

MMWR™

MORBIDITY AND MORTALITY WEEKLY REPORT

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CDC's 50th Anniversary — July 1, 1996

The Centers for Disease Control and Prevention—CDC—traces its roots to an organization established in the southeastern United States during World War II to prevent malaria among personnel training on U.S. military bases. On July 1, 1996, CDC formally celebrates its 50th anniversary as a federal agency dedicated to ensuring the public's health through close cooperation with state and local health departments and with other organizations committed to improving health in the United States and throughout the world.

To commemorate this anniversary, this issue of *MMWR* presents reports that offer special perspectives: a historical overview of CDC; national morbidity data from June 8, 1946, and June 22, 1996; reprints of articles published in CDC's earlier years—reports about an outbreak of smallpox and an outbreak of pentachlorophenol poisoning in newborn infants; and information resources about CDC. In addition, this issue reports the recent historic decision by the Council of State and Territorial Epidemiologists to designate the prevalence of cigarette smoking as a notifiable condition for national public health surveillance. A "late-breaking" report summarizes the investigation of a multistate outbreak of *Cyclospora* (an emerging pathogen) infection and underscores the continuing need to address new public health threats. Subsequent issues of *MMWR* this year may include reprints of selected reports of historical interest.

CDC and its employees invite you to use CDC services and learn more about CDC by visiting our site on the World-Wide Web (<http://www.cdc.gov>), by obtaining copies of information resources listed in this issue of *MMWR*, and by visiting the Global Health Odyssey exhibit at CDC headquarters in Atlanta.



David Satcher, M.D., Ph.D.
Director, CDC

Historical Perspectives

History of CDC

CDC, an institution synonymous around the world with public health, will be 50 years old on July 1. The Communicable Disease Center was organized in Atlanta, Georgia, on July 1, 1946; its founder, Dr. Joseph W. Mountin, was a visionary public health leader who had high hopes for this small and comparatively insignificant branch of the Public Health Service (PHS). It occupied only one floor of the Volunteer Building on Peachtree Street and had fewer than 400 employees, most of whom were engineers and entomologists. Until the previous day, they had worked for Malaria Control in War Areas, the predecessor of CDC (Figure 1), which had successfully kept the southeastern states malaria-free during World War II and, for approximately 1 year, from murine typhus fever. The new institution would expand its interests to include all communicable diseases and would be the servant of the states, providing practical help whenever called.

Distinguished scientists soon filled CDC's laboratories, and many states and foreign countries sent their public health staffs to Atlanta for training. Any tropical disease with an insect vector and all those of zoological origin came within its purview. Dr. Mountin was not satisfied with this progress, and he impatiently pushed the staff to do more. He reminded them that except for tuberculosis and venereal disease, which

FIGURE 1. Malaria Control in War Areas, Henry Rose Carter Laboratory — Savannah, Georgia, 1944



History of CDC — Continued

had separate units in Washington, D.C., CDC was responsible for any communicable disease. To survive, it had to become a center for epidemiology.

Medical epidemiologists were scarce, and it was not until 1949 that Dr. Alexander Langmuir arrived to head the epidemiology branch. He saw CDC as “the promised land,” full of possibilities. Within months, he launched the first-ever disease surveillance program, which confirmed his suspicion that malaria, on which CDC spent the largest portion of its budget, had long since disappeared. Subsequently, disease surveillance became the cornerstone on which CDC’s mission of service to the states was built and, in time, changed the practice of public health.

The outbreak of the Korean War in 1950 was the impetus for creating CDC’s Epidemic Intelligence Service (EIS). The threat of biological warfare loomed, and Dr. Langmuir, the most knowledgeable person in PHS about this arcane subject, saw an opportunity to train epidemiologists who would guard against ordinary threats to public health while watching out for alien germs. The first class of EIS officers arrived in Atlanta for training in 1951 and pledged to go wherever they were called for the next 2 years. These “disease detectives” quickly gained fame for “shoe-leather epidemiology” through which they ferreted out the cause of disease outbreaks.

The survival of CDC as an institution was not at all certain in the 1950s. In 1947, Emory University gave land on Clifton Road for a headquarters, but construction did not begin for more than a decade. PHS was so intent on research and the rapid growth of the National Institutes of Health that it showed little interest in what happened in Atlanta. Congress, despite the long delay in appropriating money for new buildings, was much more receptive to CDC’s pleas for support than either PHS or the Bureau of the Budget.

Two major health crises in the mid-1950s established CDC’s credibility and ensured its survival. In 1955, when poliomyelitis appeared in children who had received the recently approved Salk vaccine, the national inoculation program was stopped. The cases were traced to contaminated vaccine from a laboratory in California; the problem was corrected, and the inoculation program, at least for first and second graders, was resumed. The resistance of these 6- and 7-year-olds to polio, compared with that of older children, proved the effectiveness of the vaccine. Two years later, surveillance was used again to trace the course of a massive influenza epidemic. From the data gathered in 1957 and subsequent years, the national guidelines for influenza vaccine were developed.

CDC grew by acquisition. The venereal disease program came to Atlanta in 1957 and with it the first Public Health Advisors, nonscience college graduates destined to play an important role in making CDC’s disease-control programs work. The tuberculosis program moved in 1960, immunization practices and the *MMWR* in 1961. The Foreign Quarantine Service, one of the oldest and most prestigious units of PHS, came in 1967; many of its positions were soon switched to other uses as better ways of doing the work of quarantine, primarily through overseas surveillance, were developed. The long-established nutrition program also moved to CDC, as well as the National Institute for Occupational Safety and Health, and work of already established units increased. Immunization tackled measles and rubella control; epidemiology added family planning and surveillance of chronic diseases. When CDC joined the international malaria-eradication program and accepted responsibility for protecting

History of CDC — Continued

the earth from moon germs and vice versa, CDC's mission stretched overseas and into space.

CDC played a key role in one of the greatest triumphs of public health: the eradication of smallpox. In 1962 it established a smallpox surveillance unit, and a year later tested a newly developed jet gun and vaccine in the Pacific island nation of Tonga. After refining vaccination techniques in Brazil, CDC began work in Central and West Africa in 1966. When millions of people there had been vaccinated, CDC used surveillance to speed the work along. The World Health Organization used this "eradication escalation" technique elsewhere with such success that global eradication of smallpox was achieved by 1977. The United States spent only \$32 million on the project, about the cost of keeping smallpox at bay for 2½ months.

CDC also achieved notable success at home tracking new and mysterious disease outbreaks. In the mid-1970s and early 1980s, it found the cause of Legionnaires disease and toxic-shock syndrome. A fatal disease, subsequently named acquired immunodeficiency syndrome (AIDS), was first mentioned in the June 5, 1981, issue of *MMWR*. Since then, *MMWR* has published numerous follow-up articles about AIDS, and one of the largest portions of CDC's budget and staff is assigned to address this disease.

Although CDC succeeded more often than it failed, it did not escape criticism. For example, television and press reports about the Tuskegee study on long-term effects of untreated syphilis in black men created a storm of protest in 1972. This study had been initiated by PHS and other organizations in 1932 and was transferred to CDC in 1957. Although the effectiveness of penicillin as a therapy for syphilis had been established during the late 1940s, participants in this study remained untreated until the study was brought to public attention. CDC also was criticized because of the 1976 effort to vaccinate the U.S. population against swine flu, the infamous killer of 1918–19. When some vaccinees developed Guillain-Barré syndrome, the campaign was stopped immediately; the epidemic never occurred.

As the scope of CDC's activities expanded far beyond communicable diseases, its name had to be changed. In 1970 it became the Center for Disease Control, and in 1981, after extensive reorganization, Center became Centers. The words "and Prevention" were added in 1992, but, by law, the well-known three-letter acronym was retained. In health emergencies CDC means an answer to SOS calls from anywhere in the world, such as the recent one from Zaire where Ebola fever raged.

Fifty years ago CDC's agenda was noncontroversial (hardly anyone objected to the pursuit of germs), and Atlanta was a backwater. In 1996, CDC's programs are often tied to economic, political, and social issues, and Atlanta is as near Washington as the tap of a keyboard (Figure 2).

Adapted for MMWR by Elizabeth W. Etheridge, Ph.D., from her book, Sentinel for Health: A History of the Centers for Disease Control. Berkeley, California: University of California Press, 1992.

Editorial Note: When CDC's name changed in 1970, from the Communicable Disease Center to the Center for Disease Control, CDC scientists were poised to accept new challenges. The most notable of the agency's many achievements in the following 10 years was its role in global smallpox eradication, a program that finally succeeded because of the application of scientific principles of surveillance to a complex problem. In the realm of infectious diseases, CDC maintained its preeminence, identifying

History of CDC — Continued

FIGURE 2. CDC headquarters on Clifton Road — Atlanta, 1996



the Ebola virus and the sexual transmission of hepatitis B, and isolating the hepatitis C virus and the bacterium causing Legionnaires disease. The Study of the Effectiveness of Nosocomial Infection Control (SENIC) was the most expensive study the agency had ever undertaken and proved for the first time the effectiveness of recommended infection-control practices. Other studies included identification of the association of Reye syndrome with aspirin use, the relation between liver cancer and occupational exposure to vinyl chloride, and the harmful effects of the popular liquid protein diet.

The 1980s institutionalized what is considered to be a critically important scientific activity at CDC—the collaboration of laboratorians and epidemiologists. The decade began with the national epidemic of toxic-shock syndrome, documentation of the association with a particular brand of tampons, and the subsequent withdrawal of that brand from the market. CDC collaboration with the National Center for Health Statistics (NCHS) resulted in the removal of lead from gasoline, which in turn has markedly decreased this exposure in all segments of the population. The major public health event of the 1980s was the emergence of AIDS. CDC helped lead the response to this epidemic, including characterization of the syndrome and defining risk factors for disease.

CDC became involved in two very large epidemiologic studies during the 1980s. First, the Cancer and Steroid Hormone Study conducted in collaboration with the National Cancer Institute assessed the risks for breast, cervical, and ovarian cancers associated with both oral contraceptives and estrogen replacement therapy. Second, at the request of Congress, CDC undertook a series of studies of the health effects of

History of CDC — Continued

service in Vietnam on veterans and their offspring, which led to a landmark contribution of the laboratory—the development of a serum test for dioxin able to measure the toxicant in parts per quadrillion. This decade also introduced scientifically based rapid assessment methods to disaster assistance and sentinel health event surveillance to occupational public health. Epi Info, a software system for the practice of applied epidemiology, was introduced and now has been translated into 12 languages for tens of thousands of users globally. Finally, during the 1980s, NCHS was moved to CDC, further enhancing CDC's information capabilities to meet national needs.

The 1990s have been characterized by continuing applications of CDC's classic field-oriented epidemiology, as well as by the development of new methodologies. For example, the disciplines of health economics and decision sciences were merged to create a new area of emphasis—prevention effectiveness—as an approach for making more rational choices for public health interventions. In 1993, the investigation of hantavirus pulmonary syndrome required a melding between field epidemiology and the need for sensitivity to and involvement of American Indians and their culture. Similarly, the response to global problems with Ebola virus and plague underscore the importance of adapting these new methodologies. Other major CDC contributions to the world's health include global polio eradication efforts and efforts to prevent neural tube defects. Finally, in October 1992, Congress changed CDC's official name to the Centers for Disease Control and Prevention, to recognize CDC's leadership role in prevention. Today, CDC is both the nation's prevention agency and a global leader in public health. As the world enters the new millennium, CDC will remain the agency ready to address the challenges to its vision of healthy people in a healthy world through prevention.

Editorial Note by: Office of the Director, Epidemiology Program Office, CDC.

*Historical Perspectives***Notifiable Disease Surveillance and Notifiable Disease Statistics —
United States, June 1946 and June 1996**

National surveillance for infectious diseases is used to document the morbidity and impact associated with these conditions in the United States. This report includes morbidity data for the weeks ending June 8, 1946, and June 22, 1996, and describes changes since 1946 both in the procedures for conducting surveillance and in the incidence of selected diseases.

Surveillance Notes

The history of the reporting and tracking of diseases that could pose a risk to public health in the United States dates back more than a century. In 1878, Congress authorized the U.S. Marine Hospital Service (the forerunner of today's Public Health Service [PHS]) to collect morbidity reports on cholera, smallpox, plague, and yellow fever from U.S. consuls overseas; this information was used to institute quarantine measures to prevent the introduction and spread of these diseases into the United States. In 1879, a specific Congressional appropriation was made for collecting and publishing reports of these notifiable diseases. The authority for weekly reporting and publi-

Surveillance for Notifiable Diseases — Continued

cation was expanded by Congress in 1893 to include data from states and municipal authorities. By 1928, all states, the District of Columbia, Hawaii, and Puerto Rico were reporting 29 infectious diseases to the Surgeon General.

Fifty years ago, morbidity statistics published each week were accompanied by the statement "No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring." These statistics appeared under the heading "Prevalence of Disease—United States" in each issue of *Public Health Reports* printed by PHS, Office of the Surgeon General (Division of Public Health Methods) (see pages 533–6). In 1949, the collection, compilation, and publication of these morbidity statistics was transferred to the National Office of Vital Statistics, which produced the *Weekly Morbidity Report*. In 1952 the publication was renamed *Morbidity and Mortality Weekly Report*, and responsibility for the publication was transferred to CDC in 1961.

In 1946, reports of notifiable diseases consisted of summary statistics, transmitted by telegram each week by all state and some city health officers. The numbers were tabulated and sent immediately by letter to each site for verification. Data published in the June 28, 1946, issue of *Public Health Reports* were for the week ending June 8, 1946 (see pages 533–6). Today, for most diseases, each state health department enters individual case reports (rather than summary numbers) into a computer for transmission to CDC through the National Electronic Telecommunications System for Surveillance; data published in this issue of *MMWR* represent cumulative totals reported through June 22, 1996. Except for New York City and Washington, D.C., morbidity data from individual cities are no longer published weekly.

Because the reporting frequency varied for different conditions (i.e., weekly, monthly, or annually), the precise number of conditions considered nationally reportable in 1946 is unclear. The first list of 41 infectious diseases that all states agreed should be nationally notifiable to PHS was developed at the first conference of state and territorial epidemiologists in 1951 (1). This group was the forerunner of the Council of State and Territorial Epidemiologists (CSTE), now CDC's primary collaborator for determining what is nationally reportable. In 1951, as now, because reporting can be mandated only at the state level, reporting to CDC by the states was voluntary. Today, 52 infectious diseases are notifiable nationally (2); in addition, at the 1995 CSTE meeting, the first noninfectious condition—elevated blood lead levels—was added to the list of conditions designated as reportable at a national level (3). On June 6, 1996, CSTE added silicosis and acute pesticide poisoning/injuries to the list of nationally reportable conditions. Also on June 6, CSTE unanimously agreed to include **prevalence of cigarette smoking** in the list of conditions designated as reportable by states to CDC; this is the first time tobacco has been included and the first time a risk behavior, rather than a disease or illness, has been included (see box, page 537).

Disease Notes

Comparing reports of notifiable conditions during June 1946 and June 1996 highlights some of the differences in the prevalent or common diseases. For example, 50 years ago, in the fundamentally prevaccine era, for the week ending June 8, 1946, health departments reported 161 cases of poliomyelitis, 229 cases of diphtheria, 1886 cases of pertussis, and 25,041 cases of measles (see page 534–6). Through the week ending June 22, 1996, a cumulative total of no confirmed cases of polio, one case of

Surveillance for Notifiable Diseases — Continued

diphtheria, 1419 cases of pertussis, and 263 cases of measles have been reported for 1996. Since 1946, vaccines have been licensed for all four of these conditions: diphtheria and tetanus toxoids and pertussis vaccine in 1949, inactivated polio vaccine in 1955 and live attenuated vaccine in 1961, and measles vaccine in 1963. Because of the advent of these and other disease-control strategies, during the past decade public health authorities have established as targets for the year 2000 eradication of polio globally and measles elimination in the Americas. Four cases of another vaccine-preventable disease, smallpox, were reported for the week ending June 8, 1946, and a total of 337 cases for the entire year of 1946; the last documented cases of smallpox in the United States occurred 3 years later, in 1949. In 1958, the World Health Organization targeted smallpox for global eradication, a campaign that was declared successful in 1980 (4).

Among the 10 nationally notifiable infectious diseases that are most commonly reportable today, several were unknown in June 1946. The 10 most frequent nationally reportable infectious conditions in 1994 (the most recent year for which final data are available) were, in descending order, gonorrhea, acquired immunodeficiency syndrome (AIDS), salmonellosis, shigellosis, hepatitis A, tuberculosis, primary and secondary syphilis, Lyme disease, hepatitis B, and pertussis (5). Fifty years ago, AIDS and Lyme disease were unknown. "Infectious hepatitis" (subsequently identified as hepatitis A) had just been identified, and morbidity reports for this condition first appeared in 1947. In 1953, serum hepatitis (subsequently named hepatitis B) was recognized as a separate entity, although it was included in the general category of hepatitis until 1966, when infectious and serum hepatitis began to be reported separately. Other diseases reported on a weekly basis during 1946 included amebiasis, murine typhus fever, and tularemia; during the past 10 years, these three conditions were deleted from the nationally notifiable disease list and are no longer routinely reported to CDC.

Because of the acknowledged underreporting of most diseases (particularly those typically characterized by clinically mild illness) to this passive surveillance system, the National Notifiable Disease Surveillance System (NNDSS) does not capture all cases of disease nationwide. However, these data are essential for monitoring disease trends and for determining relative disease burdens. In addition, this same NNDSS—with origins dating more than a century ago—continues to be used for monitoring the decline in incidence of vaccine-preventable and other diseases and to detect and document the appearance of new public health problems.

Reported by: Systems Operations and Information Br, Div of Surveillance and Epidemiology, Epidemiology Program Office, CDC.

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PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED JUNE 8, 1946

Summary

A total of 161 cases of poliomyelitis was reported for the week, as compared with 145 last week and 92 for the corresponding week last year. The latter figure was the largest reported for a previous corresponding week in the past 11 years. States reporting 5 or more cases are as follows (last week's figures in parentheses): *Increases*—New York 6 (4), Kansas 7 (1), Florida 33 (31), Louisiana 9 (3), Texas 35 (26), California 15 (11); *decreases*—Alabama 15 (26), Colorado 5 (6). The total to date for the country as a whole is 1,195, as compared with 903 for the same period last year. Since March 16 (the approximate date of lowest weekly incidence in both years) 729 cases have been reported, as compared with 506 for the same period last year and a 5-year median for the period of 323.

No new case of smallpox was reported during the week in either California or Washington. Only 4 cases were reported for the country as a whole—1 each in Illinois, Iowa, Kansas, and Colorado. The total to date (of which 13 occurred in California and 68 in Washington) is 236, as compared with 224 for the same period last year and a 5-year median of 514.

A further slight decrease occurred in the incidence of measles. Of the total of 25,041 cases reported currently, as compared with 26,347 last week and a 5-year median of 14,662, approximately 68 percent occurred in the New England, Middle Atlantic, and East North Central areas. The total for the year to date is 567,487, as compared with 79,259 and 551,742, respectively, for the same periods of 1945 and 1944.

A total of 229 cases of diphtheria was reported, as compared with 290 last week. Both the current total and the cumulative figure (7,725) are above the respective corresponding figures of any of the past 6 years.

Deaths recorded during the current week in 93 large cities of the United States totaled 9,171, as compared with 8,272 last week, 8,890 and 8,360, respectively, for the corresponding weeks of 1945 and 1944, and a 3-year (1943-45) average of 8,818. The total to date is 222,588, as compared with 216,604 for the corresponding period last year.

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June 28, 1946

Telegraphic morbidity reports from State health officers for the week ended June 8, 1946, and comparison with corresponding week of 1945 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Me-dian 1941-45	Week ended—		Me-dian 1941-45	Week ended—		Me-dian 1941-45	Week ended—		Me-dian 1941-45
	June 8, 1946	June 9, 1945		June 8, 1946	June 9, 1945		June 8, 1946	June 9, 1945		June 8, 1946	June 9, 1945	
NEW ENGLAND												
Maine.....	3	0	0				203	3	113	0	1	1
New Hampshire.....	0	0	0	1			57	3	5	0	0	0
Vermont.....	0	5	0				182	31	85	2	0	0
Massachusetts.....	1	4	2				2,596	354	877	1	7	7
Rhode Island.....	0	0	0		19		138	11	11	0	1	1
Connecticut.....	0	1	1	1	1		636	89	342	1	1	1
MIDDLE ATLANTIC												
New York.....	29	10	8	12	12	12	3,745	142	1,268	14	21	21
New Jersey.....	4	4	5	3	2	2	3,575	57	713	6	3	3
Pennsylvania.....	11	11	14		1		1,639	620	715	5	13	13
EAST NORTH CENTRAL												
Ohio.....	6	4	4	3	4	3	888	53	315	5	14	14
Indiana.....	2	1	3	3	13	1	192	49	73	1	0	1
Illinois.....	11	4	19	7	7	7	585	401	401	5	10	10
Michigan ¹	6	9	5	1			785	251	461	4	5	5
Wisconsin.....	3	0	1	22	21	20	1,776	155	1,431	3	5	3
WEST NORTH CENTRAL												
Minnesota.....	5	1	1				93	17	309	1	1	1
Iowa.....	3	4	3				244	63	97	0	1	0
Missouri.....	0	3	0	1	11		108	45	185	4	6	6
North Dakota.....	1	1	1		1	2	16	2	21	0	0	0
South Dakota.....	0	4	1				12	36	14	0	1	0
Nebraska.....	0	2	2			1	152	105	89	0	1	0
Kansas.....	13	2	3	2			215	41	177	1	1	1
SOUTH ATLANTIC												
Delaware.....	0	0	0				24	4	10	3	0	0
Maryland ²	13	12	6		1	1	717	25	204	1	0	8
District of Columbia.....	1	0	0				137	2	60	0	1	1
Virginia.....	4	3	3	71	76	76	653	32	219	2	3	3
West Virginia.....	1	1	2			1	150	6	33	3	2	2
North Carolina.....	16	2	4			2	287	29	262	1	2	2
South Carolina.....	3	7	3	136	74	80	378	32	77	0	1	1
Georgia.....	2	4	3	7	5	6	64	4	37	1	4	2
Florida.....	5	1	2	2		2	93	1	71	1	1	1
EAST SOUTH CENTRAL												
Kentucky.....	5	0	2			2	71	13	42	0	1	1
Tennessee.....	1	0	2	9	23	16	186	63	77	2	6	6
Alabama.....	5	4	2	23	9	14	157	5	71	3	5	2
Mississippi ²	6	5	3							4	1	1
WEST SOUTH CENTRAL												
Arkansas.....	1	2	4	21	15	12	131	61	68	0	3	0
Louisiana.....	0	0	1	1		1	34	52	21	0	0	2
Oklahoma.....	1	9	2	13	31	23	94	33	38	3	2	0
Texas.....	24	28	22	256	393	287	1,000	271	271	3	3	3
MOUNTAIN												
Montana.....	0	0	0		3	3	153	7	43	1	0	0
Idaho.....	1	0	0	8	3		58	2	29	0	0	0
Wyoming.....	0	0	0				19	12	15	0	1	0
Colorado.....	4	7	8	3	63	22	303	10	151	0	0	0
New Mexico.....	1	2	1	1		1	61	1	12	0	0	0
Arizona.....	3	1	1	32	33	33	138	11	64	0	1	1
Utah ²	0	0	0				212	212	112	0	1	1
Nevada.....	0	0	0				1	4	13	0	0	0
PACIFIC												
Washington.....	6	4	3			2	116	193	223	0	4	2
Oregon.....	1	5	1		7	7	205	89	89	1	0	2
California.....	27	11	16	8	13	42	1,762	1,458	1,458	11	9	9
Total.....	229	178	178	637	831	765	25,041	5,160	14,662	93	143	143
23 weeks.....	7,725	6,115	5,897	186,516	64,459	76,675	567,487	79,259	466,940	3,701	5,020	5,020

¹ New York City only.

² Period ended earlier than Saturday.

June 28, 1946

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Telegraphic morbidity reports from State health officers for the week ended June 8, 1946, and comparison with corresponding week of 1945 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever ²		
	Week ended—		Me- dian 1941- 45	Week ended—		Me- dian 1941- 45	Week ended—		Me- dian 1941- 45	Week ended—		Me- dian 1941- 45
	June 8, 1946	June 9, 1945		June 8, 1946	June 9, 1945		June 8, 1946	June 9, 1945		June 8, 1946	June 9, 1945	
NEW ENGLAND												
Maine.....	0	0	0	18	38	13	0	0	0	1	0	0
New Hampshire.....	0	1	1	17	7	7	0	0	0	0	0	0
Vermont.....	0	0	0	3	10	5	0	0	0	1	0	0
Massachusetts.....	0	1	0	112	312	251	0	0	0	0	5	4
Rhode Island.....	0	0	0	3	5	8	0	0	0	0	0	0
Connecticut.....	1	0	1	28	45	43	0	0	0	0	1	1
MIDDLE ATLANTIC												
New York.....	6	11	4	398	526	344	0	0	0	4	7	7
New Jersey.....	0	0	0	155	112	112	0	0	0	1	1	2
Pennsylvania.....	3	1	0	209	412	219	0	0	0	5	4	6
EAST NORTH CENTRAL												
Ohio.....	4	0	0	224	336	229	0	1	1	1	4	4
Indiana.....	1	1	0	37	64	54	0	0	0	3	1	0
Illinois.....	4	2	2	173	205	146	1	0	0	2	1	2
Michigan ³	0	0	0	115	234	178	0	0	0	2	1	2
Wisconsin.....	0	0	0	76	176	151	0	0	0	0	0	1
WEST NORTH CENTRAL												
Minnesota.....	3	0	0	45	77	40	0	0	0	0	0	0
Iowa.....	1	0	0	33	28	14	1	0	0	0	0	0
Missouri.....	2	0	0	12	44	44	0	0	0	1	0	1
North Dakota.....	0	0	0	0	18	6	0	0	0	1	1	0
South Dakota.....	0	0	0	8	26	8	0	1	0	0	0	0
Nebraska.....	0	0	0	9	28	17	0	0	0	0	0	0
Kansas.....	7	0	0	23	43	27	1	0	0	0	0	1
SOUTH ATLANTIC												
Delaware.....	0	0	0	0	3	4	0	0	0	0	0	0
Maryland ³	0	0	0	68	125	39	0	0	0	1	1	1
District of Columbia.....	0	1	0	13	21	8	0	0	0	0	0	0
Virginia.....	0	2	0	43	65	20	0	0	0	2	0	3
West Virginia.....	1	1	0	20	36	18	0	0	0	1	2	2
North Carolina.....	* 2	2	0	16	41	17	0	0	0	1	3	3
South Carolina.....	3	3	1	11	12	4	0	0	0	10	1	1
Georgia.....	1	0	0	7	14	9	0	0	0	5	0	9
Florida.....	33	1	0	2	2	1	0	0	0	2	5	5
EAST SOUTH CENTRAL												
Kentucky.....	0	0	1	16	25	25	0	0	0	6	5	4
Tennessee.....	3	2	1	11	31	28	0	0	0	1	1	4
Alabama.....	15	2	1	10	13	11	0	0	0	4	9	1
Mississippi ³	1	0	0	5	5	3	0	0	0	0	0	2
WEST SOUTH CENTRAL												
Arkansas.....	2	1	1	4	3	3	0	2	1	5	0	5
Louisiana.....	9	1	1	5	19	4	0	1	1	4	4	4
Oklahoma.....	2	1	1	5	23	10	0	0	0	1	1	3
Texas.....	35	42	1	25	40	26	0	0	0	13	9	9
MOUNTAIN												
Montana.....	0	0	0	5	10	10	0	0	0	0	0	0
Idaho.....	0	0	0	2	7	7	0	0	0	2	0	0
Wyoming.....	0	0	0	10	4	5	0	0	0	0	0	0
Colorado.....	5	0	0	18	38	38	1	0	0	1	0	0
New Mexico.....	0	0	0	3	6	3	0	0	0	1	2	2
Arizona.....	1	0	0	4	8	8	0	0	0	1	2	1
Utah ³	0	1	0	17	11	11	0	0	0	0	0	0
Nevada.....	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington.....	1	2	1	19	47	20	0	0	0	0	0	0
Oregon.....	0	0	0	26	17	12	0	1	1	0	1	1
California.....	15	13	9	150	326	173	0	0	0	5	8	3
Total.....	161	92	41	2,213	3,698	2,338	4	6	7	88	80	109
23 weeks.....	*1,195	903	586	77,487	120,416	87,636	236	224	514	1,268	1,401	1,790

² Period ended earlier than Saturday.

³ Including paratyphoid fever reported separately, as follows: New York 1; Illinois 1; Michigan 1; Missouri 1; South Carolina 3; Georgia 2; Louisiana 3; California 1.

* Correction: North Carolina, week ended May 18, 1946, poliomyelitis, 2 cases (instead of 3).

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June 28, 1946

Telegraphic morbidity reports from State health officers for the week ended June 8, 1946, and comparison with corresponding week of 1945 and 5-year median—Con.

Division and State	Whooping cough			Week ended June 8, 1946							
	Week ended—		Me- dian 1941- 45	Dysentery			En- ceph- alitis, infec- tious	Rocky Mt. spot- ted fever	Tula- remia	Ty- phus fever, en- demic	Un- du- lant fever
	June 8, 1946	June 9, 1945		Ame- bic	Bacil- lary	Un- spec- ified					
NEW ENGLAND											
Maine.....	19	41	32								1
New Hampshire.....	5		2								1
Vermont.....	38	32	7								3
Massachusetts.....	100	171	171				1				
Rhode Island.....	28	16	27								
Connecticut.....	65	41	53								
MIDDLE ATLANTIC											
New York.....	145	210	241	3	6		1	1			9
New Jersey.....	184	112	122			1					1
Pennsylvania.....	63	166	215					1			2
EAST NORTH CENTRAL											
Ohio.....	72	136	130								2
Indiana.....	46	34	34								
Illinois.....	97	48	102	5	1		1		1		17
Michigan ²	71	45	218	1	1						2
Wisconsin.....	100	26	125						1		5
WEST NORTH CENTRAL											
Minnesota.....	9	11	22	2							
Iowa.....	14		23								16
Missouri.....	13	29	29								1
North Dakota.....			8			1					
South Dakota.....			4								2
Nebraska.....	1		9								
Kansas.....	26	31	55						1		2
SOUTH ATLANTIC											
Delaware.....	1	1	1					1			
Maryland ²	26	88	88					2			
District of Columbia.....	6	3	11					1			
Virginia.....	76	132	65			50					
West Virginia.....	17	11	23								
North Carolina.....	108	158	160					5		3	
South Carolina.....	67	75	79		68						
Georgia.....	5	21	27	1	3					14	7
Florida.....	27	8	10							7	3
EAST SOUTH CENTRAL											
Kentucky.....	33	23	55		1					1	1
Tennessee.....	25	33	51			1	1	1			
Alabama.....	45	67	55							5	2
Mississippi ²									2	1	3
WEST SOUTH CENTRAL											
Arkansas.....		18	42	3					2		4
Louisiana.....		5	5				1			1	3
Oklahoma.....	8	9	9								
Texas.....	180	266	266	19	303	88				18	13
MOUNTAIN											
Montana.....	1	3	6								
Idaho.....	14	1	1	1				3			
Wyoming.....		2	7								
Colorado.....	19	40	29		1			1			1
New Mexico.....	10	6	7								2
Arizona.....	17	11	11	2		66					
Utah ²	12	25	62						1		
Nevada.....			2								
PACIFIC											
Washington.....	29	17	60								
Oregon.....	20	24	20								
California.....	44	489	489	2	1		2	1		2	10
Total.....	1,886	2,679	3,778	39	385	207	7	17	8	52	113
Same week, 1945.....	2,679			40	556	172	7	15	12	97	95
Average, 1943-45.....	2,885			54	524	179	12	4 21	20	4 44	
23 weeks: 1946.....	42,905			897	7,597	2,710	200	105	400	1,067	1,973
1945.....	57,437			721	9,918	2,690	156	90	363	1,270	2,062
Average, 1943-45.....	64,066		4 88,081	694	7,183	1,945	223	4 106	345	4 1,061	

² Period ended earlier than Saturday.

⁴ 5-year median, 1941-45.

Addition of Prevalence of Cigarette Smoking as a Nationally Notifiable Condition — June 1996

On June 6, 1996, by a unanimous vote, the Council of State and Territorial Epidemiologists (CSTE) added **prevalence of cigarette smoking** to the list of conditions designated as reportable by states to CDC. The addition of prevalence of cigarette smoking marks the first time a behavior, rather than a disease or illness, has been considered nationally reportable.

Goals of smoking prevalence surveillance identified by CSTE include monitoring trends in tobacco use, guiding allocation of tobacco-use prevention resources, and evaluating public health interventions to reduce smoking. Given these goals, CSTE selected population sampling as the appropriate surveillance methodology and designated the Behavioral Risk Factor Surveillance System (BRFSS) as the preferred data source. CSTE and CDC are developing the format to regularly present this information in national disease reporting statistics. The addition of cigarette smoking prevalence brings to 56 the number of diseases and conditions designated by CSTE as reportable by states to CDC.

Reported by: Council of State and Territorial Epidemiologists. Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion; Div of Surveillance and Epidemiology, Epidemiology Program Office, CDC.

Editorial Note: National notifiable disease surveillance has been critical to the successful campaign against infectious diseases throughout this century. By agreement among states, CSTE, in partnership with CDC, determines the list of conditions reportable to CDC. The addition of prevalence of cigarette smoking to this list is a historic step in the evolution of the public health surveillance in the United States.

Although most conditions reportable by states to CDC have been acute infectious diseases, and surveillance for such diseases remains a public health priority, the addition of prevalence of cigarette smoking reflects shifts in morbidity and mortality patterns in the United States and therefore the need to expand the range of nationally reportable conditions. Traditionally, infectious disease reporting has relied on a single methodology—mandated reporting of all cases. The decision by CSTE to designate BRFSS as the recommended data source for reporting of this condition marks a transition to a more flexible system in which surveillance methods are determined by surveillance goals. Most importantly, this action underscores the role of tobacco use as the leading preventable cause of death in the United States and the need to conduct national public health surveillance for both conventional disease outcomes and for underlying causes (e.g., smoking and other risky behaviors) amenable to public health intervention (1).

Reference

1. McGinnis JM, Foege WH. Actual causes of death in the United States. *JAMA* 1993; 270:2207–12.

International Notes — Quarantine Measures

Smallpox — Stockholm, Sweden, 1963

Reprinted below is the entire series of reports published during May–July 1963 about a smallpox outbreak in Sweden. Selected tables and figures from these reports also have been recreated to resemble the originals as closely as possible. A contemporary Editorial Note follows the outbreak reports.

[From the May 24, 1963, MMWR]

Sweden — Stockholm was declared a smallpox infected area on May 16. A seaman who returned from Indonesia in late March is the apparent source of an outbreak which has now spread through two generations of transmission and has resulted in one fatality. Preliminary information on cases to date, received from the Ministry of Health, Sweden, and forwarded by Dr. Reimert T. Ravenholt, Epidemiologic Consultant, Division of Foreign Quarantine, U.S. Public Health Service, Paris, is given below:

The outbreak was recognized on May 13 when the diagnosis of smallpox was first suspected in Case #7. The disease was sufficiently mild in Cases 1, 4, 5 and 12 that medical assistance was not sought. The only fatality to date occurred in Case #2 who apparently suffered an acute hemorrhagic form of the disease, diagnosed as smallpox in retrospect.

This outbreak is of unique interest in that it represents one of the few epidemics in Western nations in recent years not evidencing a predominant spread among hospital contacts. Recent immunization programs among hospital personnel presumably have altered the pattern of hospital spread observed in other recent outbreaks. The mildness of the disease in several of the earlier cases, resulting in the failure of these patients to seek medical care and hospitalization, has contributed to the pattern of community transmission.

The outbreak emphasizes the sinister role of mild or vaccine-modified cases of smallpox in initiating and propagating outbreaks of severe disease. Since the outbreak was discovered during the second generation of indigenous cases, it is possible that Americans recently in Stockholm have been unknowingly exposed to the disease, and cases of suspicious febrile illness in such individuals should receive the utmost scrutiny by clinicians and public health authorities.

[From the May 31, 1963, MMWR]

Four additional cases of smallpox have been identified in Stockholm with onsets of illness since May 18. All four presumably acquired their disease as a result of hospital contact.

The outbreak (See MMWR, Vol. 12, page 172) now totals 16 cases, with three generations of transmission following the importation of smallpox by a seaman who presumably acquired his disease in transit through Southeast Asia. Information on cases to date received from Dr. Bo Zetterberg, Chief, Epidemiology Division, State Bacteriology Laboratory, Stockholm, is summarized in the table below [See table, page 539].

The pattern of spread of the illness is presented diagrammatically in the accompanying figure [See figure, page 540].

The first case to be identified occurred in an unvaccinated 19-year-old bricklayer (Case 7) who had onset of fever, vomiting, and backache on May 5. He was hospital-

Smallpox — Continued

SMALLPOX — STOCKHOLM
Summary of Current Information on Cases

Case No.	Age	Sex	Date of Onset	Presumed Source of Infection	Last Vaccination	Comment
1	24	M	April 6	Southeast Asia	1959	Modified illness
2	58	F	April 18	Case #1	Childhood	Died April 23
3	80	F	April 21	Case #1	Childhood	
4	24	F	April 25	Case #1	1943	Modified illness
5	20	F	Not known	Case #1	1950	No rash (Lab diagnosis)
6	53	M	May 3	Case #2	1920	Husband of Case #1
7	19	M	May 5	Case #2	Never	Died May 28
8	50	F	May 5	Case #3	Childhood	Home Nurse of Case #3
9	55	F	May 5	Case #3	1916	Home Nurse of Case #3
10	67	F	May 6 or 9	Case #3	1918	
11	72	F	May 8	Case #3	1915	No known direct contact
12	22	M	May 11	Case #4	1961	Laboratory diagnosis only
13	61	M	May 18	Case #3 or 6	1949**	Hospital acquired
14	1½	F	May 19	? Case #6	Never**	Hospital acquired
15	72	F	May 24	Case #9	Childhood	Hospital acquired— Died May 27
16	75	F	? May 24	Case #9	Childhood	Hospital acquired

*First identified case.

**Revaccinated within 8 days of onset.

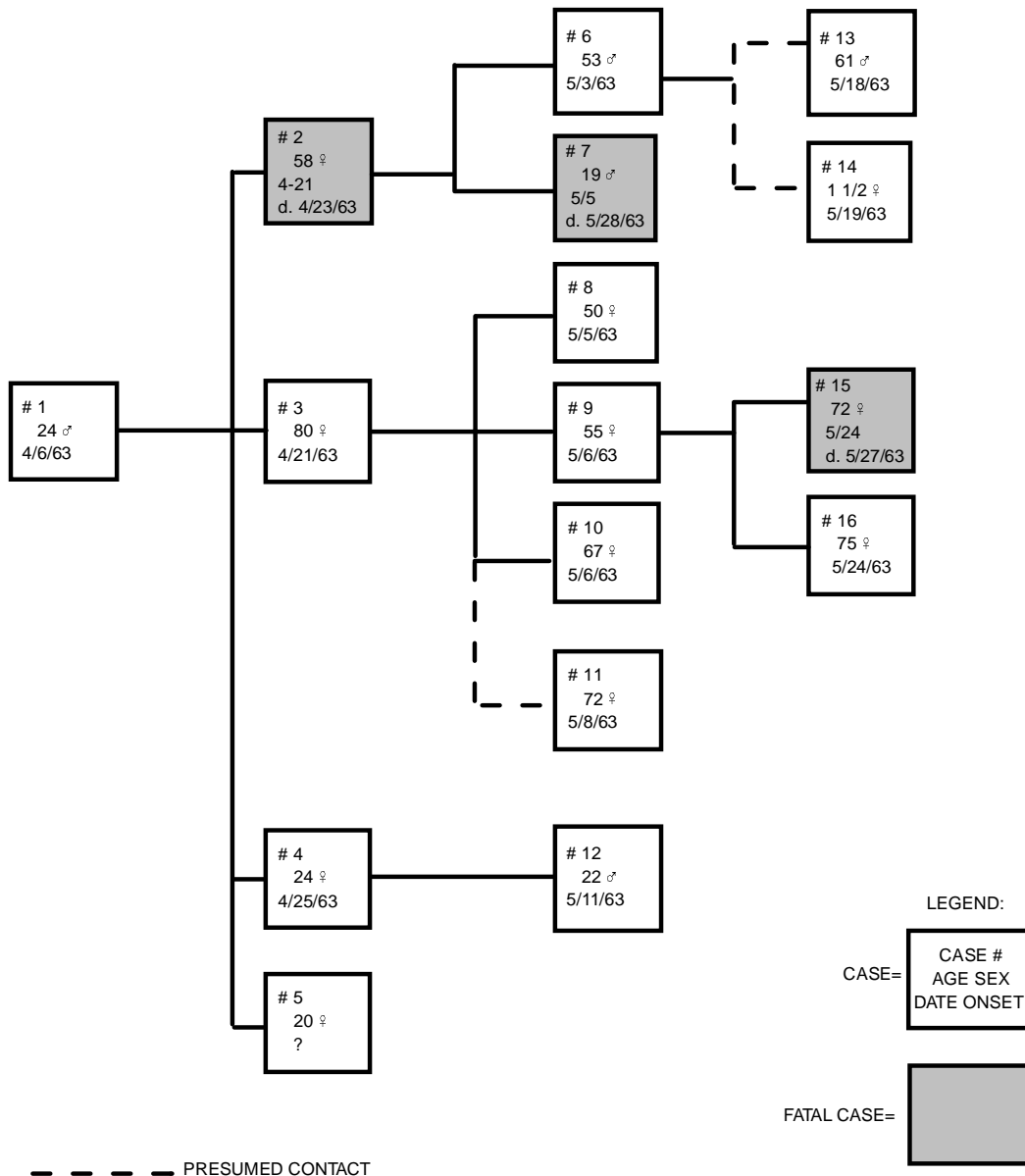
ized three days later and subsequently developed an extensive maculo-papular rash which became pustular by May 12. Smallpox was suspected and confirmed the following day by the laboratory.

Immediate epidemiologic investigation revealed that an aunt of the bricklayer (Case 2) had developed on April 18 an acute febrile illness, manifest by hemorrhagic skin lesions, and had died shortly after admission to the hospital on April 23. Ten other cases of smallpox were identified May 14–16.

The original source of the outbreak was a 24-year-old seaman who after two weeks residence in Australia left Darwin on March 22 on BOAC Flight #709. In-transit stops of not more than 50 minutes each were made in Djakarta, Singapore, Rangoon, Calcutta, Karachi, Teheran, and Damascus en route to Zurich. At Zurich, the seaman deplaned and the following day boarded Swissair Flight #250, reaching Stockholm March 24. He apparently acquired his disease as a result of in-transit exposure either at a terminal or on the plane. On April 6, 15 days after the flight, he developed a moderate fever and mild rash and remained in the home of his grandmother (Case 3) throughout his illness. Cases 2, 3, 4, and 5 all had contact with him in the grandmother's home during the course of his illness. On April 21, the grandmother fell ill, subsequently exposing three women (Cases 8–10) who visited the home to provide nursing care to the elderly woman prior to her hospitalization on May 27. She was originally diagnosed as having chickenpox and recovered uneventfully. Another resident of the building (Case 11) who lived two stories above the grandmother, developed smallpox but denied acquaintance or contact with the grandmother.

Smallpox — Continued

SMALLPOX - STOCKHOLM - 1963
 DIAGRAMMATIC REPRESENTATION OF THE OUTBREAK



Case 2, the first fatality, apparently acquired the illness from the seaman during a visit to the grandmother's apartment and subsequently transmitted it to her husband (Case 6) and her nephew (Case 7) the first identified case. Case 12 who had only fever and serologic evidence of infection, acquired his disease presumably from his fiancée, Case 4.

The appearance of cases among hospital contacts is more consistent with the previously observed patterns of imported smallpox in Western countries. Case 13 is a

Smallpox — Continued

gardener at the Infectious Disease Hospital where Cases 3 and 6 were admitted as presumptive chickenpox on April 27 and May 7, respectively. He is thought to have handled laundry from these patients prior to the first suspicion of smallpox on May 12. He was initially employed by the hospital only two months previous and had not yet been vaccinated in the hospital's annual revaccination program.

Case 14 was a patient admitted to the Infectious Disease Hospital with whooping cough on April 30. She was located in the same hospital vicinity as Case 6, although there was no connection between the rooms housing these patients. Cases 15 and 16 were patients on the same hospital ward to which Case 9 was admitted on May 9. Case 9 was originally thought to have a toxic drug eruption prior to her diagnosis of smallpox on May 15.

With the exception of Case 12 who had an exceptionally mild illness, it is apparent that spread of the disease to date has been primarily among individuals vaccinated at times far distant in the past. Of the three fatalities to date, one occurred in a person never vaccinated and the other two in persons vaccinated more than 50 years prior to exposure. The absence of additional spread to hospital personnel is probably related to efforts in Sweden to emphasize revaccination of hospital personnel at frequent intervals. Notably, the last four cases have occurred in persons already identified and isolated by virtue of being known contacts.

Some 8,000 persons living in neighborhoods of the earlier cases have been vaccinated. In addition, vaccination has been provided for other residents of Stockholm on request and to date some 300,000 persons have availed themselves of this protection.

[From the June 7, 1963, MMWR]

Three additional cases, two hospital acquired, were identified last week bringing to 19 the total number of smallpox cases comprising the current outbreak, according to information made available by Dr. Bo Zetterberg, Chief, Epidemiology Division, State Bacteriology Laboratory, Stockholm.

Two of the three cases are actually part of the second generation of transmission (See MMWR Vol. 12, pg. 174), having now been identified retrospectively by serologic means. Neither patient developed a rash. Both were nurses in the Stockholm Infectious Disease Hospital in close contact with the smallpox cases admitted there. The first, a 44-year-old female, cared for Case No. 3 from April 27 to May 7 daily, including bathing and local treatment of the lesions. On May 9, the nurse developed fever and headache, as well as nausea and low back pain. Except for May 13 and 14, she continued to work throughout her illness until isolated on May 18. She was found to have a very high hemagglutination inhibition antibody titer suggesting recent infection. Her last vaccination prior to onset of illness was in 1962. She was also in daily contact with Cases 6 and 14, and directly or indirectly may have transmitted the disease to Case 14.

The second nurse, a 22-year-old female, also employed in the Stockholm Infectious Disease Hospital, had daily contact with Case No. 2 during the period April 27–May 7. On May 11, she experienced onset of headache, fever, and sore throat and was absent from work May 11 through May 13. No rash developed. A high HAI titer verified the diagnosis of smallpox. She had previously been vaccinated in 1950 but at the time of exposure had not yet been revaccinated under the hospital's annual revaccination program.

Smallpox — Continued

The final additional case is that of a 47-year-old man who had onset of illness May 21 while already isolated as a contact. He is the father of Case 7, the first identified case. He had never been vaccinated until 7 days before onset of illness.

The total number of hospital-acquired cases now stands at 6, one-third of the secondary indigenous cases. The evidence supports close contact as the primary requisite for spread both in the hospital and in the community. The disease has spread among persons vaccinated more than 7 years prior to the time of their exposure with 2 notable exceptions, both patients with mild disease without rash. The table below presents data on the vaccination status of the 18 indigenous cases [See table below].

[From the June 14, 1963, MMWR]

Two additional cases of smallpox were identified in Stockholm last week bringing to 21 the total number of cases in the current outbreak. Unique circumstances involving these two persons, neither of whom were under surveillance as contacts at the time of their detection, indicates that the outbreak may perhaps be expected to continue.

Information made available by Dr. Bo Zetterberg, Chief, Epidemiology Division, State Bacteriology Laboratory, Stockholm, indicates that on June 6 an 85-year-old woman, who lives with her daughter, went to a hospital out-patient department for routine follow-up of a chronic medical problem. The daughter called in advance informing clinic personnel that the elderly woman had developed a rash. On arrival at the out-patient clinic, the mother spent some time in the general waiting room and was then referred to the dermatology clinic, and again spent some time in the dermatology waiting room. When seen by physicians, a clinical diagnosis of smallpox was made. In all, she had spent some four hours at the hospital and presumably exposed some 450 persons in the two crowded waiting rooms. It was noted that on May 28 she had developed a low-grade fever with dizziness, followed by the appearance of rash on June 2.

She and her 54-year-old daughter share an apartment in a boarding house for women housing some 100 occupants. The daughter works as a mortician and on April 26 had prepared the body of smallpox Case 2 of the outbreak for cremation. She had been placed under surveillance as a contact and 16 days after her exposure to the dead woman, having had no symptoms or signs of illness, she was released from quarantine. She denied any evidence of illness since being released from surveillance. The total elapsed time from her contact with the body of Case 2 and the onset of disease in her mother was 32 days, consistent with two incubation periods of smallpox. Except for the daughter's exposure, no epidemiologic evidence could be found linking the mother with a source of smallpox. Neither the mother nor daughter had

Time Lapse Since Last Vaccinated	Indigenous Cases	Clinical Characteristics		Deaths
		Rash	No Rash	
7 yrs. or less	2	—	2	—
8–14 yrs.	3	1	2	—
15–24 yrs.	2	2	—	—
25–50 yrs.	4	3	1	—
More than 50 years	4	4	—	2
Never	3	3	—	1
Totals	18	13	5	3

Smallpox — Continued

been vaccinated since childhood. The daughter demonstrated a high HAI titer on June 6, suggesting a recent infection, and in the absence of an alternative explanation, it may be presumed that the daughter developed a sub-clinical infection and transmitted virus to her mother. Two very unusual aspects of smallpox transmission seem apparent. The daughter, unvaccinated since childhood and exposed to hemorrhagic smallpox, developed an infection so mild as to produce no symptoms, yet developed serologic evidence of infection. Despite the presumed absence of any rash or systemic manifestations of disease, she was apparently able to transmit the illness to her mother.

The inadvertent exposure of the mother during her eruptive stage to some 450 persons at the hospital, as well as possible contacts in the boarding house, establishes an additional large group of contacts in which cases may yet occur.

An epidemic curve for the outbreak to date is presented showing the chronologic relationship of the generations of transmission [See Figure below]. Using the median date in the span of onset dates for each generation, it is apparent that the median incubation periods for all generations are strikingly similar.

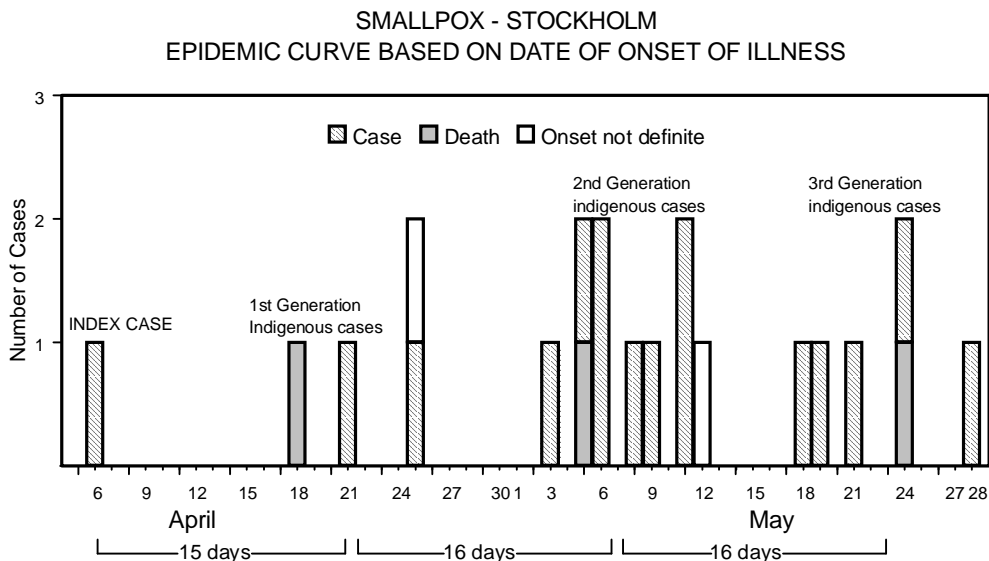
[From the July 3, 1963, MMWR]

No new cases have been reported during the past week. The total number of confirmed cases remains at 23, including four deaths. The fourth death reported involved an unvaccinated 47-year-old male who died on June 15, 25 days after onset of illness. He was the father of case 7, also a fatality (See MMWR, Vol. 12, No. 21, pp. 174 and 183).

[From the July 19, 1963, MMWR]

Two additional cases of smallpox were reported from Stockholm on July 11 and July 12, respectively. One of these, an 89-year-old female patient in a mental hospital, had onset of rash and fever on July 7, 15 days after onset of illness in Case 23, a 73-year-old woman also hospitalized at this institution.

The total number of confirmed cases that has occurred during the outbreak is 25, including four deaths.



Smallpox — Continued

Editorial Note—1996: Reading this *MMWR* account of the outbreak of imported smallpox in Sweden during April–July 1963 is as haunting now as it was frightening then. At the time, there was justifiable concern about possible spread of infection from Sweden to the United States, and when residents of Stockholm were offered vaccination during the outbreak, “some 300,000 persons...availed themselves of this protection.”

Sweden was the first major country to eliminate indigenous smallpox, a distinction it achieved in 1895 (1). This outbreak was the first appearance of imported smallpox there since 1932, except for a single case in 1945 (2). Infecting 25 persons over six indigenous generations of transmission, this was one of the larger such outbreaks in Europe (which had two other imported outbreaks in 1963, four in 1962, and 10 in 1961, for example) after 1958 (3). Despite Sweden’s active vaccination efforts among hospital personnel, eight of the indigenous cases were acquired by hospital staff or patients; most of the remainder were infected by face-to-face contact in the homes of case-patients. However, the versatile virus apparently also spread in this one outbreak from a corpse, from laundry of another case-patient, and by remote airborne exposure, and its clinical presentation ranged from six cases (among persons with old vaccinations) who did not develop a rash at all to at least one hemorrhagic case.

Several aspects of the outbreak in Sweden differed dramatically from smallpox outbreaks in Great Britain the previous winter following importations from Pakistan. In particular, this outbreak was not recognized until seven cases already had occurred; ambulatory cases with “mild” disease were important in early transmission; the overall case-fatality rate was substantially lower (15% in Sweden versus 40% in Great Britain). At the time, these differences were attributed to vaccine-modification of smallpox associated with the ameliorating influence of partial immunity from distant prior vaccinations. In retrospect, they may reflect infection with a strain of smallpox virus from Indonesia where smallpox historically seemed to be less lethal than on the Indo-Pakistan subcontinent.

In the outbreak in Sweden, hospital transmission of smallpox was not prominent in the early generations of disease as it was in most other European outbreaks associated with importation. However, once patients began to be admitted to the hospital, the hospital became the focus of transmission. In addition, transmission also was associated with contact with fatal cases; indeed, handling smallpox corpses and attending funerals of smallpox victims resulted in outbreaks in Africa and other smallpox-endemic areas during the global smallpox eradication campaign (4).

Dr. Ronald R. Roberto, an officer in CDC’s Epidemic Intelligence Service Program during 1962–1964, went to Stockholm as an international observer during this outbreak. In addition to his role in rapidly communicating emerging information to CDC, he formed relationships with Swedish colleagues—including epidemiologists H. B. Lundbeck and B. O. Ringertz and virologist J. A. Espmark—who made important contributions to the subsequent development of smallpox eradication activities of CDC and the World Health Organization.

This outbreak also highlights how interconnected the world was already in 1963, and it illustrates vividly the potential danger posed to all other humans as long as smallpox existed anywhere on the planet. Even discounting the unknown, apparently chance encounter by which the index patient in this outbreak came to be infected, the capricious nature of many of the subsequent encounters that resulted in indigenous

Smallpox — Continued

cases in Sweden is breathtaking. The painful lesson was not lost on Sweden, which contributed almost \$16 million to the global Smallpox Eradication Program, beginning in 1967, making it the second largest donor after the United States (3). Sweden's generosity was especially important during the final battles against smallpox in India, Bangladesh, and Somalia.

Finally, it is fitting that CDC marks the 50th Anniversary of its own founding by commemorating the 200 years since Edward Jenner discovered vaccination in May 1796 and the 30 years since the Nineteenth World Health Assembly resolved in May 1966 to eradicate smallpox over the next 10 years. The CDC effort in helping 20 West and Central African countries to eradicate smallpox early in the global campaign with support provided by the U.S. Agency for International Development and by the Public Health Service remains one of its finest and most beneficial achievements.

The glorious legacy of the global Smallpox Eradication Program lives today in the campaigns to eradicate dracunculiasis and poliomyelitis. Others too will follow.

Editorial Note by: Donald R. Hopkins, M.D., M.P.H., Carter Center/Global 2000, Atlanta, and Emeritus Deputy Director, CDC. J. Donald Millar, M.D., D.T.P.H. (Lond.), President, Don Millar & Associates, Inc., Atlanta, and Emeritus Director, National Institute for Occupational Safety and Health, Center for Environmental Health, Bureau of State Services, and Smallpox Eradication Program, CDC.

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*Epidemiological Notes and Reports***Pentachlorophenol Poisoning in Newborn Infants —
St. Louis, Missouri, April–August 1967**

Reprinted below is the text and editorial note of a report published in the October 7, 1967, MMWR. A contemporary Editorial Note follows.

From April to August 1967, nine cases of a clinically distinct illness characterized by fever and profuse sweating occurred in a small nursery for newborns in St. Louis, Missouri. Two of the cases were fatal. Early in the course of the outbreak the disease was felt to be an intoxication, but the nature of the poison and the mode of exposure of the patients remained obscure. Only after the ninth case developed was it discovered that an antimildew agent, containing a high concentration of sodium pentachlorophenate (the sodium salt of pentachlorophenol), was being used in the hospital laundry. All of the clinical, epidemiological, and biochemical evidence indicated that this outbreak resulted from pentachlorophenol poisoning. The only identified mode of exposure was skin absorption of sodium pentachlorophenate residues on diapers and

Pentachlorophenol Poisoning — Continued

other fabrics, resulting from the misuse of the antimildew agent in the final laundry rinse.

The outstanding clinical feature of the illness was extreme diaphoresis. Attendants consistently noticed that the infants' clothing and brows were drenched with sweat. Nevertheless, the neonates nursed avidly. As the disease progressed, fever rose as high as 103 F, respiratory rates increased, and breathing became labored, though auscultation of the lungs was normal and cyanosis was absent. Other common findings included tachycardia, hepatomegaly, and irritability followed by lethargy. Anorexia, vomiting, and diarrhea were notably absent. Stiffness of the neck, muscular fasciculations, and convulsions were not observed. Skin rashes or evidences of inflammation or irritation of the skin were not seen.

Laboratory tests frequently showed a progressive metabolic acidosis, proteinuria, a rising blood urea nitrogen, and "pneumonia" or "bronchiolitis" on X-ray. Bacterial and viral cultures of blood, cerebrospinal fluid, nose, throat and stool revealed no pathogens. Autopsy findings of the two fatal cases showed fatty metamorphosis of the liver in both cases and fatty vacuolar changes in the renal tubules of one case.

All except one of the seriously ill infants, a fatal case, were transferred to other hospitals for treatment. After the first fatal case occurred, the attending physicians suspected a toxic cause and therefore promptly performed exchange transfusions on each of the seriously ill infants who were subsequently transferred for medical care. This treatment yielded dramatic results. Within minutes to hours, the infants became more responsive and had less respiratory distress. Fever and sweating disappeared, as did metabolic acidosis. Renal function returned to normal during the next few days. Except for the two fatal cases, recovery was apparently complete.

The first four cases developed between April 17 and 19 among a group of 25 infants who were in the nursery during this interval. The first infant to become ill died. The institution was closed on April 24 and thoroughly cleaned and disinfected before reopening on May 3. A second cluster of four cases occurred between May 10 and 15. One of these also was fatal. The average age of these eight cases, at onset of illness, was 8.9 days. Several additional suspect cases with fever and sweating were detected among 13 infants who had been discharged from the hospital in apparent health between April 17 and May 15.

From the time of the first recognition of the outbreak, an intensive and persistent search was made for toxic substances in the environment of the infants. A solid-stick evaporating deodorizer had been used without change in practice for 4 years. A commercial exterminator had sprayed regularly with a carbamate insecticide monthly for 2 years within the hospital, but never in the nursery. The management of drugs and the preparation of babies' formulas revealed no deviations that were likely to permit the introduction of a toxic substance to this many babies.

For the preceding 10 months, a commercially available disinfectant containing a mixture of synthetic phenolic derivatives had been repeatedly applied to surfaces that came in contact with infants' skin.

One-dimensional thin-layer chromatography of serum specimens obtained from the first eight cases was performed. These tests revealed the presence of a phenolic substance in all test specimens, which was similar to a phenolic ingredient of the disinfectant. This substance was thought to be the toxic chemical causing the disease.

Pentachlorophenol Poisoning — Continued

The nursery was closed and recleaned. Use of the suspect disinfectant was abandoned, and all equipment that had been treated with it was discarded or rendered free of phenolic residues by extensive cleaning with alcohol. New linens and diapers were purchased and the nursery reopened July 11.

On August 29, an 8-day-old infant had the acute onset of an illness identical to the previous eight infants. The infant received an exchange transfusion and promptly recovered. A follow-up survey of infants discharged from the hospital in July and August revealed six additional infants who had the characteristic excessive sweating in a milder form of the same syndrome.

The formerly suspect disinfectant was no longer in use. Reinvestigation of laundry procedures disclosed a previously overlooked source of phenols. An antimildew agent, containing 22.9 percent sodium pentachlorophenate and 4.0 percent trichloro-carbanilide, was being used in the terminal rinse of all nursery linens and diapers, despite a warning on the label that the compound "must not be used" in laundering diapers.

This product had been in use in the laundry since March 1966. The recommended quantity was one ounce of powder per laundering cycle, but it was ascertained that the laundry was actually using 3 to 4 ounces.

Thin-layer chromatography of the serum and urine of the new case revealed an abnormal substance with characteristics that were identical to those detected in the previous infants' sera. Further studies in two different laboratories with improved methods of analysis have shown that the chemical in the urine and serum of the new case was pentachlorophenol, and was clearly not one of the phenolic ingredients in the previously suspected disinfectant. Additionally, pentachlorophenol was identified in freshly laundered diapers obtained from the nursery. The quantity of pentachlorophenol varied from 1.5 to 5.7 mg. per diaper. Pentachlorophenol, when fed to rats, was found to be highly toxic and was isolated from urine of surviving rats in concentrations comparable to that found in the sick child. Unfortunately, no samples from the earlier cases remained for these more sophisticated analyses.

Actions have been instituted to prevent further illnesses that might be caused by the misuse of this product, or two other sodium pentachlorophenate-containing products that are recommended for similar purposes. The manufacturer has been directed to trace all sales and shipments of these products during the past 18 months, and to remove such products from all hospitals and any establishment that is involved in general laundry work. The company has voluntarily ceased sale of these three products.

(Reported by J. Earl Smith, M.D., Health Commissioner, Division of Health, Department of Health and Hospitals, City of St. Louis, Missouri; L.E. Loveless, Ph.D., Chemist, Clinical Laboratories, St. Louis, Missouri; E. A. Belden, M.D., Consultant, Communicable Disease Control, Local Health Services Section, Division of Health, Missouri Department of Public Health and Welfare; the Epidemiology and Pesticides Programs of the National Communicable Disease Center, Atlanta, Georgia; the Toxicology Section, Occupational Health Program, National Center for Urban and Industrial Health, Cincinnati, Ohio; and a team of EIS Officers.)

Editorial Note: The clinical, laboratory, epidemiological, and pathological findings, as well as the prompt response to exchange transfusion, all indicate a toxic, rather than an infectious, cause of this outbreak. The fever, sweating, and acidosis are consistent with intoxication with certain phenolic derivatives, which are known to increase the metabolic rate (1). The symptoms described here are remarkably similar to industrial

Pentachlorophenol Poisoning — Continued

accidental poisonings resulting from overexposure to pentachlorophenol or its sodium salts (2,3). The exact manner in which the infants became poisoned cannot be established, but the most reasonable explanation is absorption through the intact skin as a result of repeated contact with diapers, blankets, and linens containing small, but readily absorbable, quantities of sodium pentachlorophenate. The antimildew agent, which is labelled not for use in laundering diapers or hospital linens, nevertheless, was in use in this hospital. Pediatricians, hospital administrators, housekeepers, and local health authorities should check commercial diaper services and hospital laundries to ensure that this product is not in use.

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Editorial Note—1996: This report, one of the first well-documented accounts of an investigation of a noninfectious disease problem to be published in *MMWR* after responsibility for the publication had been transferred to CDC, illustrates one of the most difficult challenges facing environmental epidemiologists—exposure assessment. Even in acute situations such as that described in this report, the search for a toxic agent and the route of exposure is difficult and time consuming. In investigations of chronic and many environmentally related illnesses, exposures that may have occurred over an extended period may be particularly difficult to characterize accurately; the paucity of accurate exposure data has been termed the “Achilles heel” of environmental epidemiology (1).

As illustrated by this investigation in St. Louis in 1967, the use of innovative laboratory methodologies has been critical to improving the accuracy of exposure assessments. For example, during this investigation, epidemiologists initially relied on the laboratory techniques of thin-layer chromatographic analysis of patient specimens to identify a phenol as the probable etiologic agent; more advanced laboratory methods were used to confirm the causative role of this agent and to further focus the investigation. Since 1967, the close collaboration between epidemiologists and laboratory scientists during environmental investigations has continued to strengthen, and the development of biomarkers of exposure, disease, and susceptibility has been critical in assisting public health scientists in exposure assessment (2). Environmental epidemiologists in state and federal health agencies are addressing the difficulties of accurately classifying exposure in other innovative ways. For example, computer mapping techniques, such as Geographic Information Systems, have enabled investigators to more accurately use environmental sampling data to represent individual exposure. Finally, although the investigation in St. Louis was highly focused, the approach to this outbreak underscored the public health benefits of basic “shoe leather epidemiology” for solving problems regardless of their etiology.

Editorial Note by: Health Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.

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Pentachlorophenol Poisoning — Continued

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Outbreaks of *Cyclospora cayetanensis* Infection — United States, 1996

Cyclospora cayetanensis (previously termed cyanobacterium-like body) is a recently characterized coccidian parasite (1); the first known cases of infection in humans were diagnosed in 1977 (2). Before 1996, only three outbreaks of *Cyclospora* infection had been reported in the United States (3–5). This report describes the preliminary findings of an ongoing outbreak investigation by the South Carolina Department of Health and Environmental Control (SCDHEC) and summarizes the findings from investigations in other states.

South Carolina

On June 14, the SCDHEC was notified of diarrheal illness among persons who attended a luncheon near Charleston on May 23. A case of *Cyclospora* infection was defined as diarrhea (three or more loose stools per day or two or more stools per day if using antimotility drugs) after attending the luncheon. All 64 attendees were interviewed. Of the 64 persons, 37 (58%) had *Cyclospora* infection, including seven with laboratory-confirmed infection. The median incubation period was 7.5 days (range: 1–23 days).

Based on univariate analysis by the SCDHEC, food items associated with illness included raspberries (RR=5.6; 95% CI=2.3–13.7), strawberries (RR=2.2; 95% CI=1.0–5.1), and potato salad (RR=1.9; 95% CI=1.3–2.7). On May 23, a total of 95 persons attended a luncheon in an adjacent room and were served strawberries obtained from the same source but were not served raspberries; no cases were identified among these persons. One person who ate raspberries at the establishment that evening developed laboratory-confirmed infection; she had not attended either luncheon or eaten strawberries.

Other investigations

In May and June 1996, social event-related clusters of cases and/or sporadic cases of *Cyclospora* infection were reported in at least 10 states and in Ontario, Canada. Several hundred laboratory-confirmed cases have been reported to CDC. Most cases have occurred in immunocompetent adults.

Preliminary evidence suggests that, in these outbreaks, consumption of fresh fruit—raspberries and mixtures of berries and other fruits (precluding determination of which fruit in the mixture was associated with illness)—may be associated with *Cyclospora* infection. CDC, the Food and Drug Administration (FDA), and health officials in state and local health departments and Canada are collaborating to determine the extent and causes of the outbreaks, the sources of contamination, and whether transmission is ongoing. Additional efforts include the use of the five-site CDC/U.S. Department of Agriculture/FDA active foodborne diseases surveillance network (established in 1995; collaborating sites include Atlanta and portions of California, Connecticut, Minnesota, and Oregon). Although standardized methods are not yet available, FDA, CDC, and others are testing samples of produce for *Cyclospora*.

Cyclospora cayetanensis Infection — Continued

Reported by: J Chambers, MD, S Somerfeldt, MS, L Mackey, S Nichols, MS, Trident Health District; R Ball, MD, D Roberts, MPH, N Dufford, MS, A Reddick, PhD, J Gibson, MD, State Epidemiologist, South Carolina Dept of Health and Environmental Control. Center for Food Safety and Applied Nutrition, and Office of Regulatory Affairs, Food and Drug Administration. Div of Field Epidemiology, Epidemiology Program Office; Foodborne and Diarrheal Diseases Br, Div of Bacterial and Mycotic Diseases, and Epidemiology Br, Div of Parasitic Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Although *Cyclospora* is transmitted by the fecal-oral route, direct person-to-person transmission is unlikely because excreted oocysts require days to weeks under favorable environmental conditions to become infectious (i.e., sporulate). Whether animals serve as sources of infection for humans is unknown. Most reported cases have occurred during spring and summer. The average incubation period is 1 week, and illness may be protracted (from days to weeks) with frequent, watery stools and other gastrointestinal symptoms; symptoms may remit and relapse.

The diameter of *Cyclospora* oocysts is 8–10 μm , approximately twice that of *Cryptosporidium parvum*. Oocysts can be identified in stool by examination of wet mounts under phase microscopy, use of modified acid-fast stains (oocysts are variably acid-fast), or demonstration of autofluorescence with ultraviolet epifluorescence microscopy. However, these procedures are not routine for most clinical laboratories, and confirmation of the diagnosis by an experienced reference laboratory is recommended. Demonstration of sporulation provides definitive evidence for the diagnosis (1). Infection with *Cyclospora* can be treated with a 7-day course of oral trimethoprim (TMP)-sulfamethoxazole (SMX) (for adults, TMP 160 mg plus SMX 800 mg twice daily; for children, TMP 5 mg/kg plus SMX 25 mg/kg twice daily) (6). Treatment regimens for patients who cannot tolerate sulfa drugs have not yet been identified.

The preliminary findings of these investigations suggest that consumption of some fresh fruits has been associated with increased risk for illness. However, the investigations have not yet determined specific sources or modes of contamination. Potential sources of infection include seasonal produce that originates from different domestic and international locations at different times of the year; the complex distribution routes and handling of these foods complicate tracebacks and other key aspects of the investigations. As always, produce to be eaten raw should be thoroughly washed. This practice may not entirely eliminate the risk of transmission of *Cyclospora*. Health-care providers should consider *Cyclospora* infection in persons with prolonged diarrheal illness and specifically request laboratory testing for this parasite; cases should be reported to local and state health departments. Health departments that identify cases of *Cyclospora* infection should contact CDC's Division of Parasitic Diseases, National Center for Infectious Diseases, telephone (770) 488-7760.

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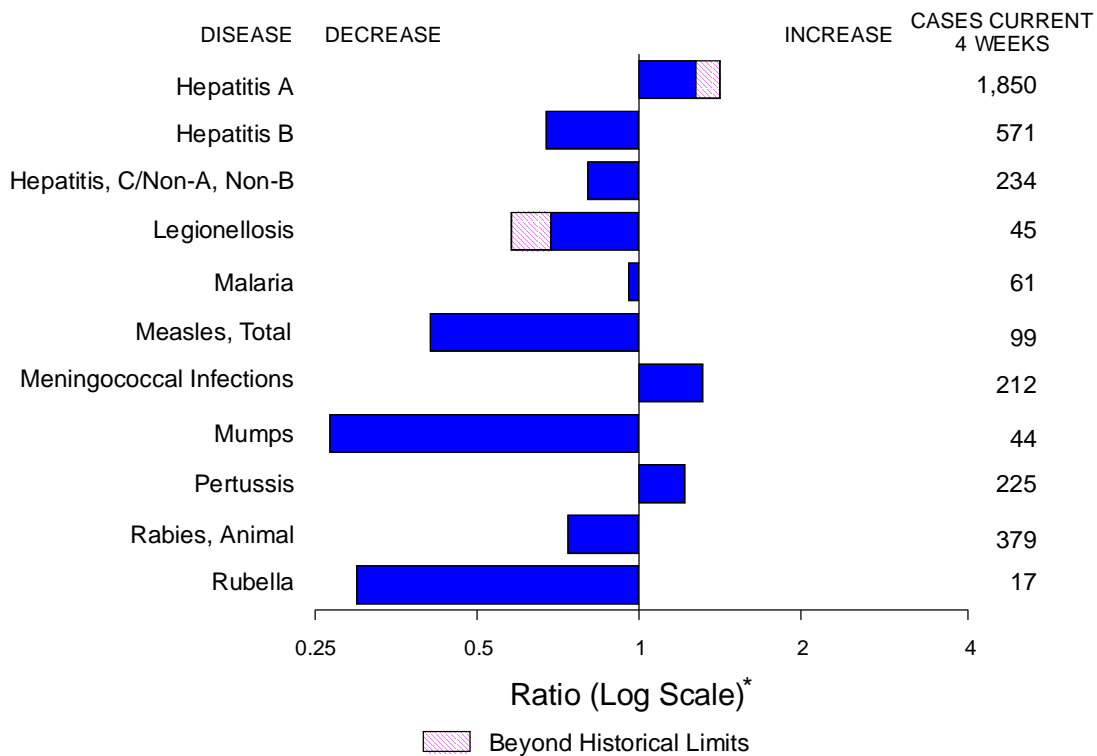
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FIGURE I. Selected notifiable disease reports, comparison of 4-week totals ending June 22, 1996, with historical data — United States



*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 — cases of selected notifiable diseases, United States, cumulative, week ending June 22, 1996 (25th Week)

	Cum. 1996		Cum. 1996
Anthrax	-	HIV infection, pediatric*§	122
Brucellosis	39	Plague	-
Cholera	2	Poliomyelitis, paralytic¶	-
Congenital rubella syndrome	1	Psittacosis	16
Cryptosporidiosis*	743	Rabies, human	-
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	147
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*	10
eastern equine*	1	Syphilis, congenital**	-
St. Louis*	-	Tetanus	10
western equine*	-	Toxic-shock syndrome	63
Hansen Disease	47	Trichinosis	11
Hantavirus pulmonary syndrome*†	6	Typhoid fever	154

-: 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, National Center for HIV, STD, and TB Prevention (NCHSTP), last update May 28, 1996.
 ¶ One suspected case of polio with onset in 1996 has been reported to date.
 ** Updated quarterly from reports to the Division of STD Prevention, NCHSTP. First quarter 1996 is not yet available.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending June 22, 1996, and June 24, 1995 (25th Week)

Reporting Area	AIDS*		Chlamydia	<i>Escherichia coli</i> O157:H7		Gonorrhea		Hepatitis C/NA,NB		Legionellosis	
	Cum. 1996	Cum. 1995		Cum. 1996	NETSS†	PHLIS‡	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996
				Cum. 1996	Cum. 1996						
UNITED STATES	28,480	34,140	142,684	544	220	132,142	184,854	1,754	1,915	336	553
NEW ENGLAND	1,123	1,717	8,288	64	18	3,549	2,366	55	59	18	10
Maine	16	26	-	3	-	21	36	-	-	1	3
N.H.	31	53	353	4	2	70	59	3	9	-	1
Vt.	9	14	-	6	6	28	20	23	6	2	-
Mass.	550	793	3,203	25	10	1,038	1,416	26	43	9	5
R.I.	73	134	973	5	-	249	245	3	1	6	1
Conn.	444	697	3,759	21	-	2,143	590	-	-	N	N
MID. ATLANTIC	7,891	8,567	19,494	53	23	14,612	21,369	176	197	68	72
Upstate N.Y.	1,000	1,117	N	35	12	2,948	4,204	151	100	20	22
N.Y. City	4,489	4,478	8,875	-	-	4,635	8,678	1	1	-	1
N.J.	1,511	1,777	2,053	18	5	2,328	1,702	-	82	7	14
Pa.	891	1,195	8,566	N	6	4,701	6,785	24	14	41	35
E.N. CENTRAL	2,298	2,871	27,126	146	70	25,804	38,056	222	158	99	180
Ohio	521	608	14,147	45	19	9,659	11,954	7	5	44	81
Ind.	347	256	4,949	23	11	3,369	4,390	7	-	25	42
Ill.	974	1,273	-	52	16	8,017	9,732	28	48	2	18
Mich.	323	562	4,101	26	24	2,911	8,820	180	105	22	19
Wis.	133	172	3,929	N	-	1,848	3,160	-	-	6	20
W.N. CENTRAL	691	784	11,764	93	45	5,658	9,636	127	31	24	41
Minn.	126	149	-	23	18	U	1,410	-	2	1	-
Iowa	51	44	1,878	17	11	481	697	97	3	5	12
Mo.	327	340	6,185	15	-	3,837	5,605	18	11	6	12
N. Dak.	6	4	2	7	6	1	15	-	3	-	2
S. Dak.	7	9	676	3	-	95	89	-	1	2	-
Nebr.	49	62	869	8	2	158	462	3	8	8	11
Kans.	125	176	2,154	20	8	1,086	1,358	9	3	2	4
S. ATLANTIC	7,305	8,716	24,737	31	5	46,386	51,917	117	135	51	93
Del.	142	163	-	-	1	691	961	1	-	-	-
Md.	853	1,295	2,978	N	1	5,952	6,145	-	6	7	16
D.C.	452	545	N	-	-	2,097	2,240	-	-	3	3
Va.	396	558	5,330	N	1	4,515	5,360	7	5	12	7
W. Va.	49	42	-	N	-	224	373	7	25	1	3
N.C.	355	491	-	7	2	9,073	11,665	22	27	3	18
S.C.	387	451	-	4	-	5,368	5,843	15	11	4	18
Ga.	1,096	1,093	5,910	7	-	10,226	9,563	-	15	1	11
Fla.	3,575	4,078	10,519	11	-	8,240	9,767	65	46	20	17
E.S. CENTRAL	953	1,032	14,260	18	13	14,951	18,834	341	585	26	25
Ky.	153	119	3,196	2	1	1,957	2,174	15	18	3	5
Tenn.	352	435	6,237	8	12	5,312	6,379	281	565	10	8
Ala.	278	261	4,060	4	-	6,317	7,804	2	2	2	4
Miss.	170	217	U	4	-	1,365	2,477	43	-	11	8
W.S. CENTRAL	2,656	2,968	6,210	25	4	8,706	24,912	207	118	2	11
Ark.	121	136	-	6	2	1,380	2,373	2	2	-	4
La.	656	360	3,318	4	2	3,710	5,724	86	77	-	2
Okla.	96	155	2,892	2	-	1,788	2,362	61	24	2	3
Tex.	1,783	2,317	-	13	-	1,828	14,453	58	15	-	2
MOUNTAIN	811	1,120	4,834	47	18	3,496	4,393	302	240	20	66
Mont.	10	9	-	4	-	13	38	10	9	1	4
Idaho	19	26	759	13	4	51	62	80	32	-	1
Wyo.	2	7	319	-	2	13	24	93	105	2	6
Colo.	248	373	-	17	5	886	1,451	27	33	6	26
N. Mex.	45	107	-	2	-	428	496	35	30	1	4
Ariz.	240	298	2,684	N	7	1,833	1,545	38	15	7	6
Utah	90	69	254	8	-	49	111	12	7	1	6
Nev.	157	231	818	3	-	223	666	7	9	2	13
PACIFIC	4,752	6,365	25,971	67	24	8,980	13,371	207	392	28	55
Wash.	366	458	4,557	16	5	1,006	1,187	32	108	1	7
Oreg.	223	208	2,711	21	14	259	202	4	24	-	-
Calif.	4,074	5,512	17,607	28	-	7,329	11,340	70	250	27	43
Alaska	11	46	494	2	-	218	341	2	1	-	-
Hawaii	78	141	602	N	5	168	301	99	9	-	5
Guam	3	-	114	N	-	26	60	1	4	-	1
P.R.	426	1,491	N	13	U	149	286	64	93	-	-
V.I.	9	21	N	N	U	-	21	-	-	-	-
Amer. Samoa	-	-	-	N	U	-	8	-	-	-	-
C.N.M.I.	-	-	N	N	U	11	13	-	-	-	-

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, National Center for HIV, STD, and TB Prevention, last update May 28, 1996.

†National Electronic Telecommunications System for Surveillance.

‡Public Health Laboratory Information System.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 22, 1996, and June 24, 1995 (25th Week)

Reporting Area	Lyme Disease		Malaria		Meningococcal Disease		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	1,896	2,698	492	491	1,823	1,714	5,374	7,658	7,761	8,711	2,573	3,539
NEW ENGLAND	312	344	24	19	72	83	73	95	183	199	294	812
Maine	3	3	3	1	11	6	-	2	4	-	-	-
N.H.	5	14	1	1	3	16	1	1	6	5	39	93
Vt.	1	5	2	-	3	6	-	-	1	2	83	110
Mass.	42	24	7	6	28	28	34	37	77	113	53	288
R.I.	43	60	3	2	-	-	1	1	21	18	25	137
Conn.	218	238	8	9	27	27	37	54	74	61	94	184
MID. ATLANTIC	1,342	1,875	114	125	149	218	209	418	1,348	1,962	407	1,025
Upstate N.Y.	703	1,007	31	24	50	65	36	38	142	203	237	591
N.Y. City	159	172	50	58	22	28	68	187	751	1,135	-	-
N.J.	86	240	28	31	37	57	55	87	310	327	67	183
Pa.	394	456	5	12	40	68	50	106	145	297	103	251
E.N. CENTRAL	23	105	42	71	227	258	959	1,276	838	742	23	20
Ohio	18	10	7	4	90	70	478	430	142	138	4	2
Ind.	5	7	7	9	37	36	120	150	91	71	1	3
Ill.	-	7	8	41	48	73	238	471	518	503	2	3
Mich.	-	1	13	9	28	47	41	130	37	U	8	11
Wis.	U	80	7	8	24	32	82	95	50	30	8	1
W.N. CENTRAL	49	39	12	10	141	96	192	407	206	287	259	173
Minn.	3	-	3	3	15	16	27	26	38	66	14	11
Iowa	19	1	2	1	32	16	11	27	31	38	129	54
Mo.	7	18	5	4	63	37	144	338	86	108	13	18
N. Dak.	-	-	-	-	2	1	-	-	2	1	28	17
S. Dak.	-	-	-	-	3	4	-	-	13	10	59	47
Nebr.	-	4	-	2	10	8	6	7	13	17	3	1
Kans.	20	16	2	-	16	14	4	9	23	47	13	25
S. ATLANTIC	86	230	113	99	413	280	1,844	2,030	1,297	1,377	1,247	1,062
Del.	7	23	2	1	2	3	18	8	20	25	38	60
Md.	38	145	22	24	36	23	284	201	139	194	299	213
D.C.	1	1	5	9	7	2	87	60	70	51	2	10
Va.	4	16	15	21	33	33	223	314	118	136	263	199
W. Va.	4	12	1	1	10	5	1	2	27	47	52	52
N.C.	20	20	10	8	48	49	517	564	217	180	327	213
S.C.	2	7	3	-	38	35	213	314	40	159	38	67
Ga.	-	4	8	10	92	57	324	373	332	16	140	143
Fla.	10	2	47	25	147	73	177	194	334	569	88	105
E.S. CENTRAL	29	19	12	10	107	109	1,273	1,507	658	645	91	129
Ky.	10	3	2	-	19	29	67	99	115	149	24	9
Tenn.	8	9	5	4	10	33	478	411	197	210	30	51
Ala.	1	1	2	5	39	25	266	302	223	185	35	66
Miss.	10	6	3	1	39	22	462	695	123	101	2	3
W.S. CENTRAL	18	46	11	8	210	195	566	1,539	877	1,104	31	70
Ark.	9	3	-	1	27	22	141	237	45	104	9	27
La.	-	-	1	1	35	30	283	524	U	106	12	22
Okla.	2	19	-	-	20	22	68	83	34	-	10	21
Tex.	7	24	10	6	128	121	74	695	798	894	-	-
MOUNTAIN	2	2	29	30	114	131	60	122	261	301	54	62
Mont.	-	-	3	2	4	2	-	3	7	3	9	23
Idaho	-	-	-	1	16	5	1	-	4	6	-	-
Wyo.	2	1	2	-	3	5	2	-	3	1	14	19
Colo.	-	-	14	16	20	35	19	70	43	25	10	-
N. Mex.	-	-	1	3	20	26	-	4	43	42	1	3
Ariz.	-	-	3	5	31	42	35	20	107	147	15	15
Utah	-	-	4	2	11	8	-	4	18	19	2	1
Nev.	-	1	2	1	9	8	3	21	36	58	3	1
PACIFIC	35	38	135	119	390	344	198	264	2,093	2,094	167	186
Wash.	1	2	8	11	56	57	3	7	114	134	-	3
Oreg.	7	3	11	7	71	61	5	6	47	23	-	-
Calif.	26	33	110	93	257	219	190	250	1,816	1,811	159	176
Alaska	-	-	2	1	4	5	-	1	33	42	8	7
Hawaii	1	-	4	7	2	2	-	-	83	84	-	-
Guam	-	-	-	1	1	2	3	3	35	59	-	-
P.R.	-	-	-	1	3	13	73	147	58	85	28	27
V.I.	-	-	-	-	-	-	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	3	-	-
C.N.M.I.	-	-	-	1	-	-	1	3	-	13	-	-

N: Not notifiable

U: Unavailable

-: no reported cases

TABLE III. Cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 22, 1996, and June 24, 1995 (25th Week)

Reporting Area	<i>H. influenzae</i> , invasive		Hepatitis (viral), by type				Measles (Rubeola)			
	Cum. 1996*	Cum. 1995	A		B		Indigenous		Imported†	
			Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	1996	Cum. 1996	1996	Cum. 1996
UNITED STATES	608	640	12,681	12,609	4,322	4,735	32	238	-	19
NEW ENGLAND	13	34	152	116	89	110	1	7	-	2
Maine	2	3	12	16	2	6	-	-	-	-
N.H.	7	7	6	5	6	12	-	-	-	-
Vt.	-	1	3	3	4	2	-	1	-	-
Mass.	4	7	78	45	24	37	1	5	-	2
R.I.	-	-	6	14	6	8	-	-	-	-
Conn.	-	16	47	33	47	45	-	1	-	-
MID. ATLANTIC	92	75	718	825	617	664	-	12	-	5
Upstate N.Y.	30	20	196	189	175	164	-	-	-	-
N.Y. City	14	19	302	409	287	222	-	4	-	3
N.J.	31	11	133	107	99	166	U	-	U	-
Pa.	17	25	87	120	56	112	-	8	-	2
E.N. CENTRAL	84	112	1,054	1,643	452	533	-	6	-	3
Ohio	51	53	457	941	60	62	-	2	-	-
Ind.	7	15	158	77	80	105	-	-	-	-
Ill.	16	27	185	320	89	143	-	2	-	1
Mich.	5	15	182	185	196	189	-	1	-	2
Wis.	5	2	72	120	27	34	-	1	-	-
W.N. CENTRAL	25	35	1,006	807	240	297	-	16	-	1
Minn.	10	14	50	88	19	26	U	13	U	1
Iowa	7	2	218	38	80	21	-	-	-	-
Mo.	5	14	467	579	110	213	-	2	-	-
N. Dak.	-	-	27	13	-	3	-	-	-	-
S. Dak.	1	-	37	18	-	2	-	-	-	-
Nebr.	1	3	113	21	8	15	-	-	-	-
Kans.	1	2	94	50	23	17	-	1	-	-
S. ATLANTIC	146	158	578	546	684	659	-	3	-	2
Del.	1	-	6	7	2	4	-	1	-	-
Md.	35	46	102	92	152	132	-	2	-	-
D.C.	5	-	15	9	15	12	-	-	-	-
Va.	4	18	78	93	69	46	-	-	-	2
W. Va.	4	6	11	11	14	29	-	-	-	-
N.C.	17	20	60	58	177	153	-	-	-	-
S.C.	3	-	30	19	40	27	-	-	-	-
Ga.	65	33	41	47	7	58	-	-	-	-
Fla.	12	35	235	210	208	198	-	-	-	-
E.S. CENTRAL	12	5	813	673	372	469	-	-	-	-
Ky.	3	1	15	30	29	47	-	-	-	-
Tenn.	3	-	563	556	231	360	-	-	-	-
Ala.	5	4	101	47	27	62	-	-	-	-
Miss.	1	-	134	40	85	-	-	-	-	-
W.S. CENTRAL	25	31	2,481	1,398	518	518	-	-	-	2
Ark.	-	4	250	125	38	23	-	-	-	-
La.	1	1	66	43	53	96	-	-	-	-
Okla.	23	17	981	336	56	74	-	-	-	-
Tex.	1	9	1,184	894	371	325	-	-	-	2
MOUNTAIN	68	68	2,043	1,936	536	401	31	67	-	1
Mont.	-	-	62	40	6	10	-	-	-	-
Idaho	1	2	130	197	62	45	-	1	-	-
Wyo.	33	4	21	67	16	12	-	-	-	-
Colo.	6	9	191	235	65	61	-	5	-	1
N. Mex.	8	10	244	385	176	161	2	2	-	-
Ariz.	9	17	814	545	131	57	-	8	-	-
Utah	6	6	469	400	59	37	29	47	-	-
Nev.	5	20	112	67	21	18	-	4	-	-
PACIFIC	143	122	3,836	4,665	814	1,084	-	127	-	3
Wash.	2	5	262	345	51	86	-	45	-	-
Oreg.	20	14	517	959	36	57	-	2	-	-
Calif.	118	101	2,985	3,248	716	924	-	16	-	2
Alaska	1	-	27	19	5	7	-	63	-	-
Hawaii	2	2	45	94	6	10	-	1	-	1
Guam	-	-	2	3	-	4	U	-	U	-
P.R.	1	2	41	43	162	241	4	6	-	-
V.I.	-	-	-	-	-	2	U	-	U	-
Amer. Samoa	-	-	-	5	-	-	U	-	U	-
C.N.M.I.	10	6	1	15	5	7	U	-	U	-

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

*Of 137 cases among children aged <5 years, serotype was reported for 32 and of those, 8 were type b.

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

TABLE III. (Cont'd.) Cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 22, 1996, and June 24, 1995 (25th Week)

Reporting Area	Measles (Rubeola), cont'd.		Mumps			Pertussis			Rubella		
	Total		1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995
	Cum. 1996	Cum. 1995									
UNITED STATES	257	227	10	326	478	92	1,418	1,273	11	94	64
NEW ENGLAND	9	4	-	-	8	46	253	195	-	11	14
Maine	-	-	-	-	4	-	8	20	-	-	1
N.H.	-	-	-	-	-	-	20	15	-	-	1
Vt.	1	-	-	-	-	-	7	12	-	2	-
Mass.	7	2	-	-	2	46	215	138	-	7	2
R.I.	-	2	-	-	-	-	-	-	-	-	-
Conn.	1	-	-	-	-	-	3	10	-	2	10
MID. ATLANTIC	17	4	2	49	70	7	111	116	-	4	9
Upstate N.Y.	-	-	1	13	16	2	59	63	-	3	2
N.Y. City	7	-	-	13	8	1	17	15	-	1	6
N.J.	-	4	U	-	9	U	-	6	U	-	1
Pa.	10	-	1	23	37	4	35	32	-	-	-
E.N. CENTRAL	9	8	1	71	79	10	168	136	-	3	-
Ohio	2	1	-	27	24	2	75	46	-	-	-
Ind.	-	-	-	5	5	-	14	15	-	-	-
Ill.	3	-	1	17	24	7	58	30	-	1	-
Mich.	3	5	-	21	26	1	16	33	-	2	-
Wis.	1	2	-	1	-	-	5	12	-	-	-
W.N. CENTRAL	17	1	-	4	29	-	62	77	-	1	-
Minn.	14	-	U	1	2	U	42	27	U	-	-
Iowa	-	-	-	-	8	-	2	2	-	1	-
Mo.	2	1	-	1	16	-	12	20	-	-	-
N. Dak.	-	-	-	2	-	-	-	6	-	-	-
S. Dak.	-	-	-	-	-	-	1	7	-	-	-
Nebr.	-	-	-	-	3	-	1	5	-	-	-
Kans.	1	-	-	-	-	-	4	10	-	-	-
S. ATLANTIC	5	5	1	45	70	10	163	115	9	23	16
Del.	1	-	-	-	-	-	9	6	-	-	-
Md.	2	-	-	13	24	1	56	16	-	-	-
D.C.	-	-	-	-	-	-	-	2	-	1	-
Va.	2	-	-	4	14	1	20	8	-	2	-
W. Va.	-	-	-	-	-	-	2	-	-	-	-
N.C.	-	-	1	10	16	7	36	55	9	9	-
S.C.	-	-	-	5	7	1	10	13	-	1	-
Ga.	-	2	-	2	1	-	7	-	-	-	-
Fla.	-	3	-	11	8	-	23	15	-	10	16
E.S. CENTRAL	-	-	-	16	7	-	46	39	-	2	-
Ky.	-	-	-	-	-	-	24	7	-	-	-
Tenn.	-	-	-	2	-	-	14	7	-	-	-
Ala.	-	-	-	3	4	-	4	25	-	2	-
Miss.	-	-	-	11	3	-	4	-	N	N	N
W.S. CENTRAL	2	19	-	14	34	6	37	71	-	2	3
Ark.	-	2	-	-	5	-	3	9	-	-	-
La.	-	17	-	10	7	-	4	4	-	1	-
Okla.	-	-	-	-	-	-	4	9	-	-	-
Tex.	2	-	-	4	22	6	26	49	-	1	3
MOUNTAIN	68	66	-	20	23	5	162	298	-	6	4
Mont.	-	-	-	-	1	1	5	3	-	-	-
Idaho	1	-	-	-	2	-	67	74	-	2	-
Wyo.	-	-	-	-	-	1	1	1	-	-	-
Colo.	6	26	-	2	-	3	24	46	-	2	-
N. Mex.	2	29	N	N	N	-	29	39	-	-	-
Ariz.	8	10	-	1	2	-	11	114	-	1	3
Utah	47	-	-	2	10	-	6	10	-	-	1
Nev.	4	1	-	15	8	-	19	11	-	1	-
PACIFIC	130	120	6	107	158	8	416	226	2	42	18
Wash.	45	17	3	13	10	8	169	41	-	1	-
Oreg.	2	1	N	N	N	-	27	15	-	1	1
Calif.	18	100	2	77	132	-	209	149	2	37	14
Alaska	63	-	-	2	12	-	2	-	-	-	-
Hawaii	2	2	1	15	4	-	9	21	-	3	3
Guam	-	-	U	3	3	U	-	2	U	-	1
P.R.	6	2	-	1	2	-	1	1	-	-	-
V.I.	-	-	U	-	2	U	-	-	U	-	-
Amer. Samoa	-	-	U	-	-	U	-	-	U	-	-
C.N.M.I.	-	-	U	-	-	U	-	-	U	-	-

N: Not notifiable

U: Unavailable

-: no reported cases

TABLE IV. Deaths in 121 U.S. cities,* week ending June 22, 1996 (25th Week)

Reporting Area	All Causes, By Age (Years)						P&J†	Total	Reporting Area	All Causes, By Age (Years)						P&J†	Total
	All Ages	≥65	45-64	25-44	1-24	<1				All Ages	≥65	45-64	25-44	1-24	<1		
NEW ENGLAND	541	378	102	40	14	7	39	S. ATLANTIC	1,162	716	256	131	40	16	60		
Boston, Mass.	143	92	26	15	4	6	17	Atlanta, Ga.	128	69	29	24	4	2	5		
Bridgeport, Conn.	30	24	6	-	-	-	1	Baltimore, Md.	165	99	38	19	4	5	21		
Cambridge, Mass.	16	9	5	2	-	-	1	Charlotte, N.C.	72	44	13	12	2	1	2		
Fall River, Mass.	39	30	6	3	-	-	-	Jacksonville, Fla.	135	93	29	9	2	2	2		
Hartford, Conn.	28	20	3	3	2	-	-	Miami, Fla.	96	60	24	10	2	-	1		
Lowell, Mass.	21	16	5	-	-	-	2	Norfolk, Va.	44	32	5	4	2	1	-		
Lynn, Mass.	22	16	5	1	-	-	1	Richmond, Va.	76	47	19	9	-	1	4		
New Bedford, Mass.	22	20	-	1	-	1	-	Savannah, Ga.	41	30	7	2	2	-	5		
New Haven, Conn.	48	28	13	4	3	-	2	St. Petersburg, Fla.	42	31	9	1	-	1	1		
Providence, R.I.	57	44	6	3	4	-	7	Tampa, Fla.	162	104	35	14	6	-	10		
Somerville, Mass.	4	3	1	-	-	-	1	Washington, D.C.	186	100	45	27	11	3	9		
Springfield, Mass.	26	15	9	1	1	-	3	Wilmington, Del.	15	7	3	-	5	-	-		
Waterbury, Conn.	26	20	4	2	-	-	1	E.S. CENTRAL	570	388	108	50	12	11	48		
Worcester, Mass.	59	41	13	5	-	-	3	Birmingham, Ala.	110	68	23	15	1	2	6		
MID. ATLANTIC	2,490	1,628	486	274	58	44	115	Chattanooga, Tenn.	55	38	11	3	2	1	3		
Albany, N.Y.	37	24	11	-	1	1	3	Knoxville, Tenn.	85	61	18	3	2	1	11		
Allentown, Pa.	23	20	2	1	-	-	-	Lexington, Ky.	77	49	20	6	1	1	12		
Buffalo, N.Y.	75	54	13	5	2	1	2	Memphis, Tenn.	U	U	U	U	U	U	U		
Camden, N.J.	48	31	9	5	2	1	5	Mobile, Ala.	64	47	9	4	1	3	4		
Elizabeth, N.J.	16	11	5	-	-	-	-	Montgomery, Ala.	42	31	4	5	1	1	2		
Erie, Pa.‡	41	30	6	3	2	-	3	Nashville, Tenn.	137	94	23	14	4	2	10		
Jersey City, N.J.	45	24	8	9	3	1	1	W.S. CENTRAL	1,482	935	317	150	50	30	84		
New York City, N.Y.	1,169	733	243	149	26	18	47	Austin, Tex.	87	57	17	10	2	1	6		
Newark, N.J.	74	26	21	18	7	2	7	Baton Rouge, La.	47	29	12	4	2	-	-		
Paterson, N.J.	25	17	4	2	-	2	-	Corpus Christi, Tex.	47	34	10	3	-	-	4		
Philadelphia, Pa.	500	335	100	45	9	11	23	Dallas, Tex.	223	132	55	26	8	2	7		
Pittsburgh, Pa.‡	85	56	17	9	2	1	4	El Paso, Tex.	91	63	19	6	2	1	11		
Reading, Pa.	11	8	1	2	-	-	-	Ft. Worth, Tex.	96	66	18	7	1	4	3		
Rochester, N.Y.	110	87	14	8	1	-	4	Houston, Tex.	353	206	75	52	13	7	26		
Schenectady, N.Y.	24	18	3	3	-	-	1	Little Rock, Ark.	74	33	22	10	4	5	5		
Scranton, Pa.‡	24	23	1	-	-	-	1	New Orleans, La.	105	59	26	10	6	4	-		
Syracuse, N.Y.	105	80	10	9	2	4	10	San Antonio, Tex.	171	120	34	9	5	3	10		
Trenton, N.J.	28	14	11	2	-	1	-	Shreveport, La.	73	55	9	3	5	1	6		
Utica, N.Y.	19	13	4	2	-	-	1	Tulsa, Okla.	115	81	20	10	2	2	6		
Yonkers, N.Y.	31	24	3	2	1	1	3	MOUNTAIN	850	552	168	93	17	19	47		
E.N. CENTRAL	1,950	1,303	383	160	43	57	104	Albuquerque, N.M.	99	66	16	9	4	4	2		
Akron, Ohio	47	34	7	5	-	1	-	Colo. Springs, Colo.	49	35	4	7	1	2	5		
Canton, Ohio	35	23	9	2	-	1	4	Denver, Colo.	108	69	24	12	1	2	6		
Chicago, Ill.	427	239	100	54	10	20	33	Las Vegas, Nev.	138	89	34	10	3	2	12		
Cincinnati, Ohio	105	71	20	7	1	6	7	Ogden, Utah	31	21	4	4	1	1	2		
Cleveland, Ohio	121	78	19	15	3	6	2	Phoenix, Ariz.	168	99	38	23	1	6	8		
Columbus, Ohio	153	111	29	9	2	2	3	Pueblo, Colo.	31	25	3	3	-	-	2		
Dayton, Ohio	104	77	17	6	2	2	2	Salt Lake City, Utah	97	63	16	12	5	1	4		
Detroit, Mich.	212	121	50	25	8	8	6	Tucson, Ariz.	129	85	29	13	1	1	6		
Evansville, Ind.	43	33	10	-	-	-	1	PACIFIC	1,908	1,312	356	162	46	32	133		
Fort Wayne, Ind.	54	42	8	1	2	1	5	Berkeley, Calif.	22	17	4	1	-	-	-		
Gary, Ind.	10	4	3	2	1	-	-	Fresno, Calif.	58	41	7	7	1	2	7		
Grand Rapids, Mich.	47	31	9	4	1	2	3	Glendale, Calif.	43	36	7	-	-	-	4		
Indianapolis, Ind.	128	89	25	9	1	4	10	Honolulu, Hawaii	82	63	11	6	1	1	8		
Madison, Wis.	59	45	9	2	2	1	6	Long Beach, Calif.	69	47	8	8	5	1	7		
Milwaukee, Wis.	132	101	25	4	1	1	9	Los Angeles, Calif.	656	433	139	60	18	6	23		
Peoria, Ill.	42	30	7	3	2	-	3	Pasadena, Calif.	21	13	4	2	2	-	2		
Rockford, Ill.	45	30	11	3	1	-	4	Portland, Ore.	126	93	19	10	1	3	8		
South Bend, Ind.	47	38	7	2	-	-	1	Sacramento, Calif.	127	78	33	10	5	1	15		
Toledo, Ohio	85	63	9	6	5	2	3	San Diego, Calif.	126	86	18	13	3	6	18		
Youngstown, Ohio	54	43	9	1	1	-	2	San Francisco, Calif.	143	83	34	20	4	2	11		
W.N. CENTRAL	853	582	161	61	25	15	50	San Jose, Calif.	150	110	22	10	3	5	14		
Des Moines, Iowa	59	46	10	3	-	-	4	Santa Cruz, Calif.	29	20	3	5	1	-	2		
Duluth, Minn.	31	20	6	3	-	2	4	Seattle, Wash.	101	79	18	3	1	-	4		
Kansas City, Kans.	49	29	12	4	3	1	-	Spokane, Wash.	52	40	8	4	-	-	5		
Kansas City, Mo.	92	61	14	5	3	-	7	Tacoma, Wash.	103	73	21	3	1	5	5		
Lincoln, Nebr.	51	35	10	5	1	-	7	TOTAL	11,806‡	7,794	2,337	1,121	305	231	680		
Minneapolis, Minn.	232	157	48	14	7	6	13										
Omaha, Nebr.	80	56	14	4	2	4	4										
St. Louis, Mo.	120	84	22	10	4	-	5										
St. Paul, Minn.	62	44	13	3	1	1	3										
Wichita, Kans.	77	50	12	10	4	1	3										

U: Unavailable - : no reported cases
 *Mortality data in this table are voluntarily reported from 121 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 these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
 §Total includes unknown ages.

Contributors to the Production of the *MMWR* (Weekly)

Weekly Notifiable Disease Morbidity Data and 121 Cities Mortality Data

Denise Koo, M.D., M.P.H.

Deborah A. Adams

Timothy M. Copeland

Patsy A. Hall

Carol M. Knowles

Sarah H. Landis

Myra A. Montalbano

Graphics Support

Sandra L. Ford

Beverly J. Holland

Desktop Publishing

Jolene W. Altman

Morie M. Higgins

Peter M. Jenkins

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Director, Centers for Disease Control
and Prevention
David Satcher, M.D., Ph.D.
Deputy Director, Centers for Disease Control
and Prevention
Claire V. Broome, M.D.
Director, Epidemiology Program Office
Stephen B. Thacker, M.D., M.Sc.

Editor, *MMWR* Series
Richard A. Goodman, M.D., M.P.H.
Managing Editor, *MMWR* (weekly)
Karen L. Foster, M.A.
Writers-Editors, *MMWR* (weekly)
David C. Johnson
Darlene D. Rumph-Person
Caran R. Wilbanks
Editorial Assistant, *MMWR* (weekly)
Teresa Rutledge

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