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MORBIDITY AND MORTALITY WEEKLY REPORT

- 833 National Breast Cancer Awareness Month — October 1996
- 833 Breast Cancer Incidence and Mortality — United States, 1992
- 837 Suffocations in Grain Bins — Minnesota, 1992–1995
- 841 Dengue Fever at the U.S.–Mexico Border, 1995–1996

National Breast Cancer Awareness Month — October 1996

October is National Breast Cancer Awareness Month. Each year, CDC; other government agencies; and major nonprofit, national cancer organizations cosponsor this month, which is dedicated to increasing awareness about the importance of early detection of breast cancer. Through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), CDC supports early detection of breast and cervical cancers through cooperative agreements with health departments in all 50 states, the District of Columbia, five territories, and 13 American Indian/Alaskan Native organizations.

Additional information about Breast Cancer Awareness Month and the NBCCEDP is available from CDC's Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, (770) 488-4751, and from the World Wide Web (<http://www.cdc.gov/nccdphp/dcpc/dcpchome.htm>).

Breast Cancer Incidence and Mortality — United States, 1992

Breast cancer is the most commonly diagnosed nondermatologic cancer and the second leading cause of cancer-related deaths among women in the United States (1–3). In 1996, a total of 184,300 new cases of and 44,300 deaths from invasive breast cancer are projected among women (3). To assess trends in incidence and death rates for breast cancer among U.S. women, CDC analyzed national incidence data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program (2) and death-certificate data from CDC's National Center for Health Statistics (NCHS) (4). This report presents incidence and death rates for breast cancer for 1992 (the most recent year for which SEER data were available) and summarizes trends in these rates for 1973–1992. Overall, these findings indicate that incidence rates for invasive breast cancer increased among women during 1973–1987 and stabilized during 1988–1992, while mortality rates remained stable during 1973–1988 and decreased during 1989–1992.

The incidence rate of breast cancer in the United States is estimated by using aggregate data reported by the SEER program, which includes a nonrandom sample

Breast Cancer — Continued

of approximately 14% of the U.S. population (2,5). Based on 1990 data from the Bureau of the Census, the demographic characteristics of persons included in SEER is representative of the total U.S. population for whites and blacks; in addition, persons included in SEER reflect the percentage of persons among the total U.S. population living below the poverty level* and the percentage of adults who graduated from high school (5). However, a higher proportion of persons included in SEER resided in urban areas (5). This analysis includes all cases of invasive breast cancer (*International Classification of Diseases, for Oncology*, codes C50.0–C50.9) registered in SEER. Annual incidence rates were computed for 1973–1992, and race- and age-specific average annual incidence rates were computed for the combined years of 1988–1992.

Decedents for which the underlying cause of death was breast cancer (*International Classification of Diseases, Adapted, Ninth Revision*, codes 174.0–174.9) were identified from public-use mortality data tapes (4). Annual death rates were computed for 1973–1992, and race-specific average annual death rates by age and by state were computed for the combined years of 1988–1992.

Denominators for annual incidence and death rate calculations were derived from U.S. census population estimates. Rates were directly standardized to the age distribution of the 1970 U.S. population using 5-year age groupings. Data are presented only for whites and blacks because numbers for other racial/ethnic groups were too small for meaningful analysis.

Breast Cancer Incidence

In 1992, the overall age-adjusted incidence rate for breast cancer was 110.6 per 100,000 women. The rate for white women (113.1) was higher than that for black women (101.0).

During 1973–1992, the overall incidence rate increased from 82.5 to 110.6: rates increased steadily during 1973–1987, and stabilized during 1988–1992 (Figure 1). During 1988–1992, incidence rates increased directly with age until age 75–79 years for whites and age 80–84 years for blacks (2); the rates for whites and blacks were similar for women aged <45 years, but for women aged ≥45 years, the rate was higher for whites than for blacks. During 1973–1992, race-specific rates varied: for white women, the age-adjusted rate increased 34% (from 84.3 to 113.1) and, for black women, increased 47% (from 68.7 to 101.0) (2).

Breast Cancer Mortality

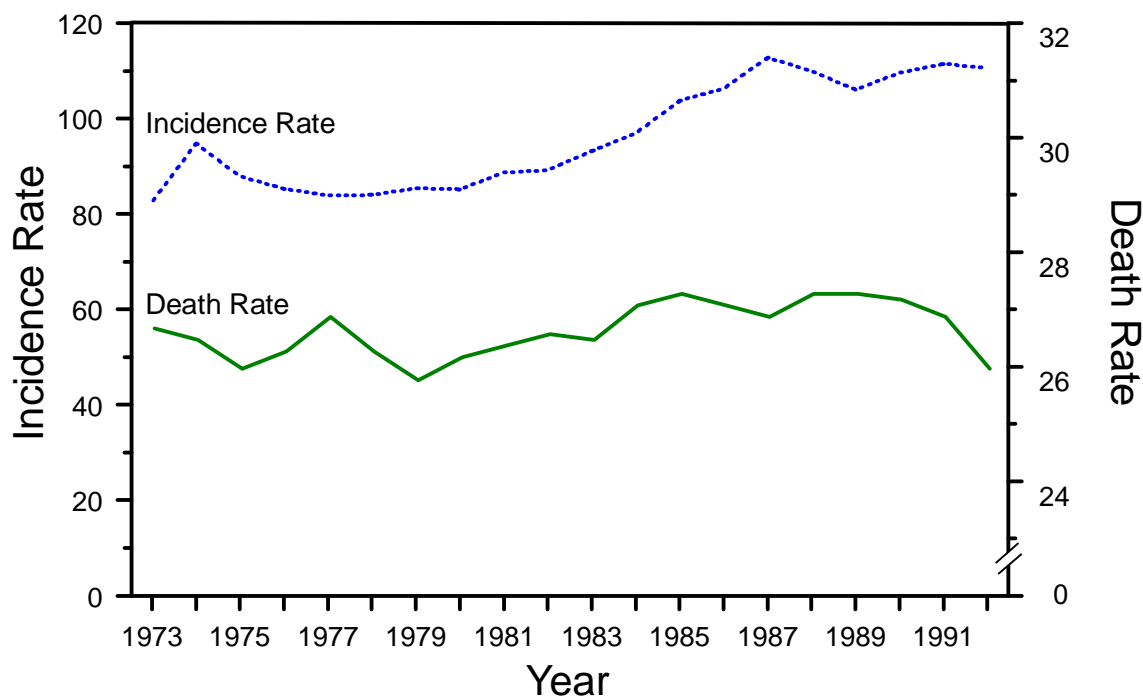
In 1992, a total of 43,063 U.S. women died from breast cancer. The death rate was 26.2 per 100,000 women.

During 1973–1992, the overall death rate varied; rates were stable during 1973–1988, before decreasing during 1989–1992 (Figure 1). During 1988–1992, the overall ratio of black-to-white death rates was 1.2 (Table 1). Rates increased directly with age (2). For women aged <70 years, the rate was higher for blacks than for whites; for women aged ≥70 years, the rate was higher for whites than for blacks. During this period, race-specific rates varied. During 1989–1992, the rate for white women decreased 6% (from 27.5 to 26.0) and, for black women, increased 3% (from 30.4 to 31.2)

*Poverty statistics are based on a definition originated by the Social Security Administration in 1964 that was subsequently modified by federal interagency committees in 1969 and 1980 and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

Breast Cancer — Continued

FIGURE 1. Age-adjusted incidence and death rates* for invasive breast cancer† — United States, 1973–1992



*Per 100,000 women. Standardized to the age distribution of the 1970 U.S. population.

†Cases of invasive breast cancer (*International Classification of Diseases, for Oncology*, codes C50.0–C50.9) were registered in SEER. Decedents for which the underlying cause of death was breast cancer (*International Classification of Disease, Adapted, Ninth Revision*, codes 174.0–174.9) were identified from public-use mortality data tapes (4).

Source: National Cancer Institute's, Surveillance, Epidemiology, and End Results program.

(2). During 1988–1992, the state-specific age-adjusted death rate ranged from 18.2 in Hawaii to 35.3 in the District of Columbia (Table 1).

Reported by: Div of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The findings in this report indicate that incidence rates for breast cancer increased 34% during 1973–1992. The increase and later stabilization of incidence rates during the 1980s is most likely related to increased use of breast cancer screening methods (6)—particularly mammography and clinical breast examination, which enable earlier diagnosis of the disease (3).

The decrease in breast cancer death rates during 1989–1992 may reflect a combination of factors, including earlier diagnosis and improved treatment. For example, screening mammography and clinical breast examination are effective methods for reducing breast cancer mortality among women aged ≥ 50 years (7). Survival from breast cancer increases when the disease is diagnosed at earlier stages, and from 1974–1976 to 1986–1991, the survival rate for invasive breast cancer increased substantially (2).

Differences in the race-specific and state-specific incidence and death rates for breast cancer during 1973–1992 may reflect differences in factors such as socioeconomic status, access to and delivery of medical care, and the prevalence of specific

Breast Cancer — Continued

TABLE 1. Number of deaths from breast cancer* and age-adjusted death rate†, by state and race‡ — United States, 1988–1992

State	No. deaths			Rate			Black-to-white ratio
	White	Black	Total	White	Black	Total	
Alabama	2,440	871	3,318	23.5¶	31.5	25.2	1.3
Alaska	158	**	190	26.3	**	23.6	**
Arizona	2,609	**	2,707	24.6	**	24.0¶	**
Arkansas	1,668	298	1,972	22.9¶	30.3	23.8¶	1.3
California	18,702	1,579	21,121	26.9	32.1	26.0¶	1.2
Colorado	2,169	**	2,260	24.9	**	24.7	**
Connecticut	2,897	181	3,089	26.7	30.0	26.9	1.1
Delaware	593	**	692	32.0	**	32.5	**
District of Columbia	197	509	712	29.3	38.0	35.3¶	1.3
Florida	11,859	1,158	13,044	25.2¶	29.0	25.5¶	1.2
Georgia	3,419	1,116	4,547	24.3¶	27.4	24.9¶	1.1
Hawaii	177	**	546	25.4	**	18.2¶	**
Idaho	712	**	717	25.0	**	24.7	**
Illinois	9,457	1,353	10,853	29.3¶	32.8	29.5¶	1.1
Indiana	4,513	365	4,888	26.7	33.9	27.2	1.3
Iowa	2,726	**	2,756	26.5	**	26.4	**
Kansas	2,078	**	2,191	25.7	**	25.8	**
Kentucky	2,823	231	3,062	25.4	33.0	25.8	1.3
Louisiana	2,324	1,046	3,386	25.0	33.2	27.2	1.3
Maine	1,110	**	1,116	26.7	**	26.7	**
Maryland	3,188	859	4,073	28.0	32.0	28.6	1.1
Massachusetts	6,110	201	6,335	30.1	31.2	30.0¶	1.0
Michigan	6,959	1,071	8,070	27.5	33.7	28.1	1.2
Minnesota	3,686	**	3,744	27.1	**	26.9	**
Mississippi	1,290	631	1,922	22.7	27.8	24.2¶	1.2
Missouri	4,271	449	4,734	26.1	32.0	26.6	1.2
Montana	626	**	646	24.8	**	24.8	**
Nebraska	1,431	**	1,463	26.9	**	26.8	**
Nevada	803	**	861	26.7	**	26.3	**
New Hampshire	1,021	**	1,025	30.8	**	30.7	**
New Jersey	7,474	894	8,423	31.5¶	34.7	31.6¶	1.1
New Mexico	963	**	1,000	24.6	**	23.6	**
New York	16,211	2,292	18,643	31.1¶	29.6	30.5¶	1.0
North Carolina	4,307	1,160	5,518	25.3	30.5	26.3	1.2
North Dakota	564	**	575	27.3	**	27.2	**
Ohio	9,404	987	10,409	28.3	32.2	28.6	1.1
Oklahoma	2,259	136	2,468	24.9	24.7	24.0¶	1.0
Oregon	2,339	**	2,389	25.7	**	25.4	**
Pennsylvania	12,081	1,089	13,200	29.2¶	34.8	29.6¶	1.2
Rhode Island	1,103	**	1,141	31.5	**	31.6	**
South Carolina	1,995	745	2,744	25.5	29.0	26.3	1.1
South Dakota	606	**	624	26.5	**	26.3	**
Tennessee	3,358	688	4,056	24.1¶	34.2	25.4	1.4
Texas	9,638	1,412	11,100	23.5¶	30.3	24.0¶	1.3
Utah	883	**	897	23.3	**	23.2	**
Vermont	494	**	494	28.0	**	27.9	**
Virginia	4,035	983	5,057	27.2	33.4	27.9	1.2
Washington	3,713	**	3,851	27.1	**	26.5	**
West Virginia	1,564	**	1,631	24.7	**	24.9	**
Wisconsin	4,312	130	4,455	27.3	33.1	27.3	1.2
Wyoming	320	**	324	25.9	**	25.6	**
Total	189,639	23,114	215,039	27.0	31.3	27.1	1.2

*Decedents for which the underlying cause of death was breast cancer (*International Classification of Diseases, Adapted, Ninth Revision*, codes 174.0–174.9) were identified from public-use mortality data tapes (4).

†Per 100,000 women. Adjusted to the age distribution of the 1970 U.S. population.

‡Numbers for racial/ethnic groups other than black and white were too small for meaningful analysis. However, all totals include numbers for other races.

¶The difference between the state-specific rate and the corresponding U.S. rate is statistically significant ($p \leq 0.0002$, Bonferroni-adjusted).

**These data were excluded because the annual average number of persons in the denominator was <75,000.

Breast Cancer — Continued

risks for disease (1,5,8). For example, women in minority populations are less likely than white women to be screened for breast cancer (9). Although socioeconomic and risk-factor data were not analyzed in this report, the findings underscore the need for further characterization of the burden of cancer for U.S. women in racial/ethnic, geographic, and other subgroups.

Early detection and appropriate treatment are essential to reducing the burden of breast cancer in the United States. CDC's National Breast and Cervical Cancer Early Detection Program provides early detection screening and referral services for cancers of the breast and cervix among older women who have low incomes or are uninsured, underinsured, or in a racial/ethnic minority. Additional efforts by this program and health-care professionals are needed to ensure that every U.S. woman at risk for breast cancer receives breast cancer screening, prompt follow-up, and assurance that tests are conducted in accordance with current federal quality standards.

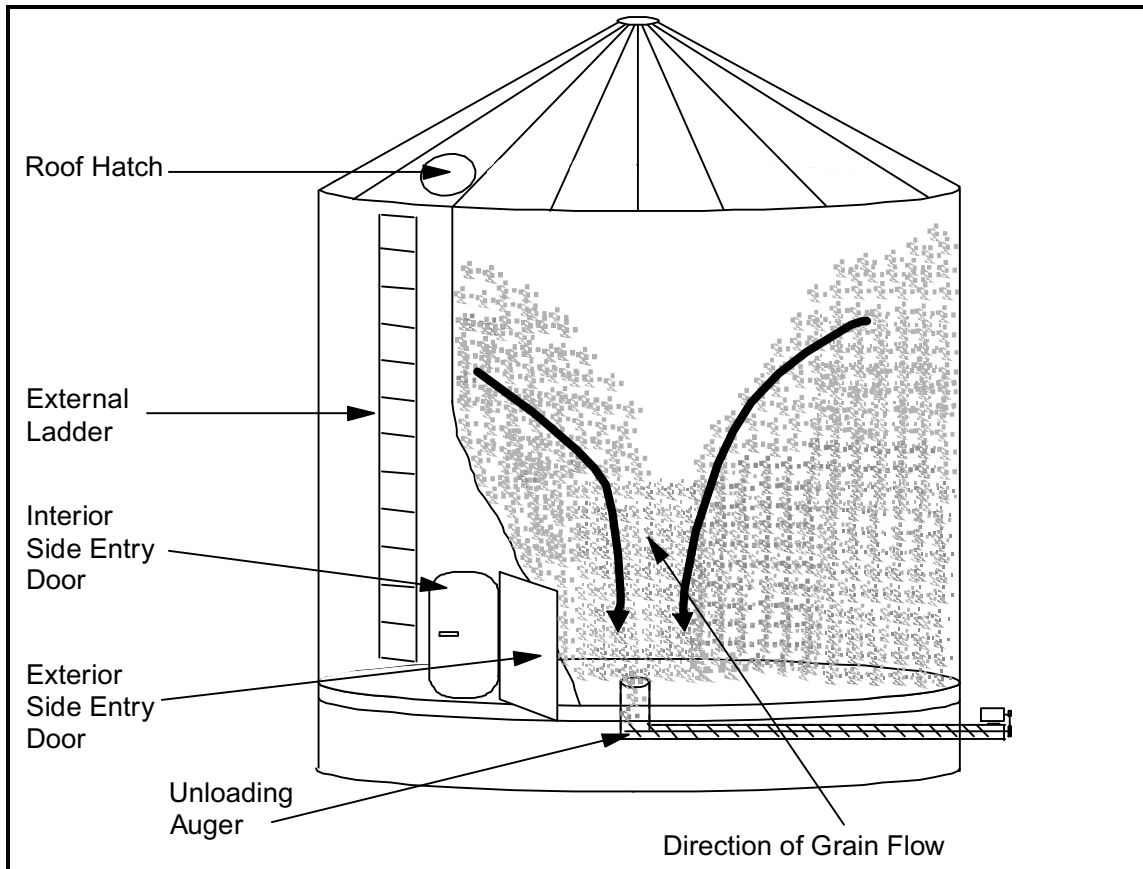
References

1. CDC. Breast and cervical cancer surveillance, United States, 1973–1987. In: CDC surveillance summaries (April). MMWR 1992;41(no. SS-2):1–15.
2. Kosary CL, Ries LAG, Miller BA, et al, eds. SEER cancer statistics review, 1973–1992: tables and graphs. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, 1995; publication no. (NIH)96-2789.
3. American Cancer Society. Cancer facts and figures, 1996. Atlanta, Georgia: American Cancer Society, 1996; publication no. 5008.96.
4. NCHS. Vital statistics mortality data, multiple cause of death, 1973–1992 [Machine-readable public-use data tapes]. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1996.
5. Miller BA, Kolonel LN, Bernstein L, et al, eds. Racial/ethnic patterns of cancer in the United States, 1988–1992. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, 1996; publication no. (NIH)96-4104.
6. CDC. Trends in cancer screening—United States, 1987 and 1992. MMWR 1995;45:57–61.
7. US Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Alexandria, Virginia: International Medical Publishing, 1996.
8. Warren RC, Hahn RA, Bristow L, Yu ES. The use of race and ethnicity in public health surveillance [Editorial]. Public Health Rep 1994;109:4–6.
9. McGinnis JM, Lee PR. Healthy people 2000 at mid decade. JAMA 1995;273:1123–9.

Suffocations in Grain Bins — Minnesota, 1992–1995

Suffocation in flowing grain is the most common cause of death associated with grain storage structures in the United States (1,2): during 1985–1989, suffocation accounted for 49 grain- and silage-handling-associated fatalities (3). During 1992–1995, nine persons in Minnesota died in separate incidents from asphyxiation after becoming engulfed in flowing grain within a grain storage structure (Figure 1). The Minnesota Fatality Assessment and Control Evaluation program (FACE), a program sponsored by CDC's National Institute for Occupational Safety and Health (NIOSH)*,

*Minnesota is one of 14 states (Alaska, California, Colorado, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, Wisconsin, and Wyoming) that receive funding from NIOSH for state FACE programs.

*Suffocations — Continued***FIGURE 1. Grain bin structure and direction of grain flow during unloading**

was notified of the incidents by the state Occupational Safety and Health Administration (MN-OSHA), Minnesota Extension Services, and a newspaper clipping service. This report describes the investigation of three of these incidents by FACE, summarizes surveillance for grain bin suffocations during 1992–1995, and provides recommendations to prevent suffocations associated with grain storage bins.

Case Reports

Incident 1. On December 17, 1992, a 32-year-old man working at a commercial grain elevator became engulfed in 60,000 bushels (1000 bushels=1240 cubic feet) of corn that were being emptied from the bottom of the bin by a grain auger[†]. He had entered the bin through the roof hatch to dislodge crusted grain. Co-workers called rescue personnel when he was noted to be absent, and holes were cut in the grain bin walls to accelerate emptying of the bin. The worker's body was recovered near the center of the bin 8 hours after the incident. Employees reported the man had been warned not to enter the bin. Confined-space safety measures, including warning signs on the bin, were in place.

Incident 2. On September 11, 1994, a 44-year-old farmer was asphyxiated after he became immersed in 6000 bushels of corn being removed from a self-unloading bin. He had entered the bin through the roof hatch to dislodge crusted grain that had

[†]A large, corkscrew-like device used to move dry materials.

Suffocations — Continued

blocked the auger intake. Several minutes later, a co-worker noted he was missing and shut off the auger. He was pulled out of the grain from above by family members, resuscitation efforts were initiated, and emergency personnel were called. He was transported to a local hospital and pronounced dead approximately 1 hour after having entered the bin.

Incident 3. On July 11, 1995, a 13-year-old boy became submerged in 2500 bushels of corn in a grain bin as the grain was being loaded into a truck by a portable auger. He had been seen observing the unloading process from a point near the roof opening of the bin; his father, who was working near the truck below, noticed he was no longer visible. Rescue personnel cut holes in the lower portion of the bin to allow the grain to spill out. The boy was then extracted and transported to the hospital but died on July 13.

Surveillance for Suffocations Associated with Grain Bins

Since 1992, the Minnesota Department of Health has compiled surveillance and field investigation data about selected work-related agricultural fatalities through FACE. FACE collects epidemiologic data from multiple sources, including police reports, on-site investigations, and MN-OSHA, regarding selected occupational fatalities and develops and disseminates prevention recommendations to address identified risks.

During 1992–1995, nine persons in Minnesota suffocated in grain bins. All nine were males aged 13–71 years (mean: 36 years). Six of the incidents occurred on family-owned farms, and three occurred at commercial grain elevators. Grain was being unloaded or removed from the involved storage bins in eight incidents and was being added to the bin in one case. The amount of grain involved in the incidents ranged from 600 to 60,000 bushels, and grain types included corn (six incidents), soybeans (two), and wheat (one). Because none of the engulfments and subsequent suffocations were witnessed, recognition of most cases and initiation of rescue efforts were delayed.

Reported by: GL Wahl, MS, SE Folken, DJ Boyle, DVM, DL Parker, MD, Minnesota Dept of Health. Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

Editorial Note: The findings in this report indicate that suffocations in grain bins are a continuing source of preventable occupationally related deaths among workers in the agriculture industry. CDC's National Traumatic Occupational Fatalities (NTOF) surveillance data from 1980 through 1992 contain death-certificate reports of 88 farm workers killed by engulfment in grain or other agriculture produce stored in bins or silos, and the Census of Fatal Occupational Injuries (CFOI) (maintained by the Bureau of Labor Statistics) contain an additional 33 reports of deaths associated with engulfment in grain bins for 1993 through 1994 (NIOSH, unpublished data, 1996)[§]. No reliable estimates are available for nonfatal incidents.

Most grain storage bins are round, flat-bottomed structures with capacities of 20,000–100,000 bushels of grain (1,2); many older bins on farms are smaller and may hold ≤5000 bushels (Figure 1). Most bins on farms are filled through a hatch in the roof and emptied through a hole in the center of the floor (4). The mechanical augers used to unload bins can move grain at rates of up to 3000 cubic feet per hour (1,2), and a person can become completely submerged in the flowing grain in 8 seconds (1,2).

[§]Data collected through NTOF surveillance include injury-related deaths of workers aged ≥16 years that are clearly identified as being work-related on death certificates. CFOI data are derived from a multisource, nationwide reporting system begun in 1992.

Suffocations — Continued

Because grain bin interior doors are designed to open inward, side doors cannot be opened during rescue efforts when grain levels are above the entry doors.

Suffocations in grain bins usually occur when bins are being emptied. During emptying, the flowing grain forms an inverted cone with strong enveloping forces, which can quickly draw a person under the surface (Figure 1) (1,2,4-6). A worker walking on stationary grain may sink only 12 inches[†]; in comparison, flowing grain has characteristics of quicksand and can rapidly induce immersion (1,2,4,5). Suffocation also can occur if a worker enters a bin containing caked, frozen, or spoiled grain. When such grain is unloaded from below, an overlying crust forms, which can collapse under the weight of a person standing or walking on the crust (1,2,4-6).

The average annual number of suffocations associated with grain bins in Minnesota increased from 1.3 during 1985-1991 to 2.3 during 1992-1995 (Minnesota Department of Health, unpublished data, 1996). During January-June 1996, three suffocations were reported in Minnesota. This increase may reflect factors such as the increased storage capacities of bins, faster speeds of grain-handling equipment, automation that enables operators to work alone (6), or increased surveillance for agriculture-related deaths.

Measures to prevent suffocations associated with grain bins include 1) updating existing grain bins by installing safety features that are now standard for most newly manufactured bins (e.g., installation of permanent inside ladders and warning stickers to alert workers to the hazards of entrapment and suffocation); 2) installing pressure-sensitive indicators on bin walls to allow workers to determine the level of the grain without entering the bin; 3) using epoxy coatings to prevent caked grain from adhering to the inside walls of bins; and 4) encouraging grain bin manufacturers and distributors to review instruction manuals with customers. In addition, NIOSH recommends the following precautions to reduce the risk for suffocation related to immersion in flowing grain (4,7):

- Workers should be educated about the risks for suffocation and trained in safe work practices and rescue measures applicable to flowing grain hazards.
- Workers should never enter grain storage structures while grain is being loaded or unloaded.
- Workers should never enter storage areas below grain that is adhering to side walls.
- If entry into a bin is necessary, workers should use safety equipment designed to keep the worker above the grain surface; workers should never stand on top of grain. In addition, all conveying equipment, whether automatic or manual, should be shut off, locked, and tagged to prevent inadvertent operation.
- When breaking up surface crusts, workers should remain positioned outside the bin and use a wooden pole or a weighted line to dislodge the crusted grain.

Because workers who enter grain bins also may be exposed to the hazards of confined spaces, grain bins should be identified as confined spaces, and workers should follow established confined space entry procedures when entering bins. Anyone entering a bin should wear a safety harness and a lifeline attached to a fixed external anchor point. In addition, a co-worker should be stationed outside the bin whenever a worker enters. Visual contact and/or audible communication should be maintained

[†]Some grains, such as flax and millet, cannot support a person even when not flowing.

Suffocations — Continued

between the worker in the bin and the co-worker at all times. When workers enter bins equipped with ventilation fans, the fans should be turned on before entry; when ventilation fans are operating, they can provide airflow through the stored grain and into the bin atmosphere, providing a safer confined-space atmosphere for entry by workers.

References

1. Baker DE. Safe storage and handling of grain. Columbia, Missouri: University of Missouri, Columbia Extension Service, October 1983.
2. Aherin RA, Schultz L. Safe storage and handling of grain. In: Minnesota Extension Service Bulletin. St. Paul, Minnesota: Minnesota Extension Service, 1981; publication no. AG-FO 568.
3. Snyder KA, Bobick TG, Hanz JL, Myers JR. Grain-handling fatalities in production agriculture, 1985–1989. Presented at the 1992 International Winter Meeting, Division of Safety Research, National Institute for Occupational Safety and Health. St. Joseph, Michigan: American Society of Agricultural Engineers, 1992; paper no. 92-5509.
4. Snyder KA, Bobick TG. Safe grain and silage handling. Cincinnati: US Department of Health and Human Services, Public Health Service, CDC, 1995; DHHS publication no. (NIOSH)95-109.
5. Aherin RA. Suffocation hazards associated with stored grain. Ames, Iowa: Iowa State University Cooperative Extension Service, 1987; publication no. PM-1293i.
6. Loewer OJ, Loewer DH. Suffocation hazards in grain bins. In: Kentucky Cooperative Extension Service Bulletin. Lexington, Kentucky: University of Kentucky, 1975; publication no. AEN-39.
7. NIOSH. NIOSH alert: request for assistance in preventing entrapment and suffocation caused by the unstable surfaces of stored grain and other materials. Cincinnati: US Department of Health and Human Services, Public Health Service, CDC, 1987; DHHS publication no. (NIOSH) 88-102.

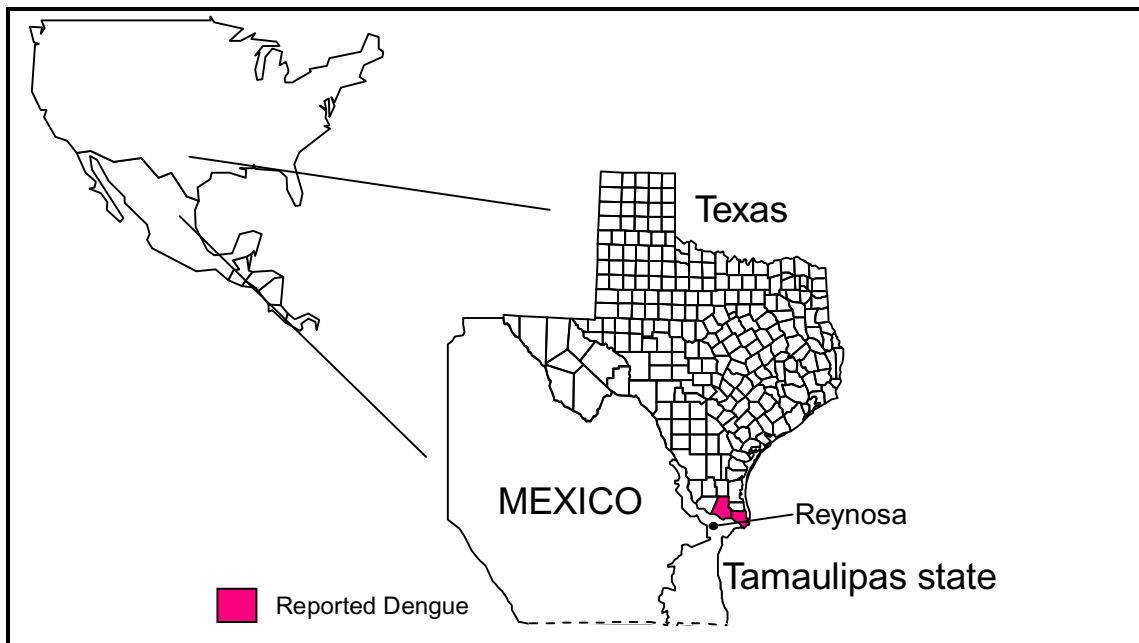
Dengue Fever at the U.S.–Mexico Border, 1995–1996

Dengue is a mosquito-transmitted acute disease caused by any of four virus serotypes (DEN-1, DEN-2, DEN-3, and DEN-4) and is characterized by acute manifestations that can include fever, headache, myalgia, arthralgia, rash, nausea, and vomiting (1). On August 25, 1995, public health authorities in Mexico notified the Texas Department of Health (TDH) of an ongoing outbreak of dengue fever in the state of Tamaulipas, which borders south Texas (Figure 1). Because of the year-round presence of the *Aedes aegypti* mosquito (a major vector for dengue) in southernmost Texas and the frequent movement of persons across the U.S.–Mexico border, the outbreak in adjacent Tamaulipas suggested an increased potential for imported and autochthonous cases in Texas, as had occurred during 1980 and 1986 (2). In response to the notification from Mexico, TDH intensified surveillance efforts for dengue, resulting in identification of 29 laboratory-diagnosed cases in Texas residents, including seven persons with no history of travel outside the state. This report summarizes results of dengue surveillance in the U.S.–Mexico border area during 1995–1996.

Mexico

During July–December 1995, health authorities in Tamaulipas (1994 population: 2,459,087) reported 4758 suspected cases of dengue to health authorities in Mexico. Dengue hemorrhagic fever (DHF)* was reported in 37 (1%) of these cases. The largest

*DHF is defined as fever, platelet count $\leq 100,000/\text{mm}^3$, any hemorrhagic manifestation, and excessive capillary permeability (demonstrated by hemoconcentration, pleural or abdominal effusions, or hypoproteinemia) (1) and may be associated with death rates up to 12% even when treated (3).

*Dengue Fever — Continued***FIGURE 1. Dengue cases along the U.S.-Mexico border — Texas, 1995**

numbers of cases were reported from the cities of Reynosa (2706 cases), adjacent to McAllen (Hidalgo County), Texas; Tampico (1404 cases), approximately 250 miles south of the border; and Matamoros (408 cases), adjacent to Brownsville (Cameron County), Texas. Dengue infection was laboratory-diagnosed by positive immunoglobulin M (IgM)-capture enzyme-linked immunosorbent assay (ELISA) (578 cases) and viral isolation (64 cases). Viral isolates included DEN-1 from southern Tamaulipas, DEN-3 and DEN-4 from northern Tamaulipas, and DEN-2 from both areas.

In Reynosa, epidemic activity began in July and peaked in October. DEN-2, DEN-3, and DEN-4 viruses were isolated from cases in Reynosa. Although cases occurred in all age groups, most (70%) were in persons aged 15–44 years; 56% of cases occurred in females. Hemorrhagic manifestations were noted in 218 patients (8%), but only 28 (1%) patients developed DHF. Mosquitoes were collected in Reynosa from mid-October through mid-November and included 847 *Ae. aegypti*, 1033 *Ae. albopictus*, and 420 *Aedes* spp. DEN-2 was recovered from two pools of *Ae. aegypti* mosquitoes.

After recognition of the outbreak, health authorities initiated community education and mosquito-control activities in Reynosa. High school students distributed educational pamphlets, and vector-control personnel conducted clean-up campaigns and treatment of larval habitats with Abate^{®†} (temephos) in all sections of the city. Ultra-low volume (ULV) applications of malathion were conducted in 179 neighborhoods.

In Tamaulipas, transmission of dengue ended by late December 1995. However, during the first week of July 1996, cases of dengue-like illness were reported in Tampico. Of 28 acute- or convalescent-phase serum samples obtained during August and sent to CDC for testing, 17 were positive for IgM dengue antibodies, and cultures of five samples yielded DEN-1.

[†]Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

*Dengue Fever — Continued***Texas**

Because of the reported outbreak in Tamaulipas, on August 25, 1995, TDH issued a dengue alert memorandum by facsimile to all local health departments, infection-control practitioners, and infectious disease physicians in south Texas. Packets of information about dengue prevention were mailed to 13,000 primary-care and emergency department physicians throughout the state. Community education efforts included a press release advising the public about the threat of dengue and recommendations for preventing mosquito exposure, the distribution of informational material on dengue prevention and the mosquito life cycle (6000 posters and 200,000 pamphlets in English and Spanish). TDH conducted active surveillance for dengue-like illness through telephone calls and personal visits to area hospitals and clinical and reference laboratories. Studies of vector densities in selected habitats confirmed that both *Ae. albopictus* and *Ae. aegypti* were abundant in this area (4).

Specimens from 273 Texas residents with suspected cases were tested at CDC; of these, 23 had virologic or serologic evidence of dengue infection. TDH received reports from commercial laboratories of seven additional patients with positive serologic tests. Of the 29 patients with laboratory-diagnosed dengue, eight reported recent travel to areas with endemic dengue outside Mexico. Of the remaining 21 persons, 14 reported recent travel to Mexico, and seven reported no travel outside Texas. The seven persons with domestically acquired dengue were women aged 20–90 years (median: 40 years). Dates of onset of illness among these seven cases were from mid-September through mid-November 1995. Four of these patients resided in Hidalgo County and three in Cameron County. DEN-2 was isolated from one of the four Hidalgo County residents, and DEN-4 was isolated from one of the three Cameron County residents. TDH and CDC are investigating an additional case of suspected dengue in a person with no travel history.

Health authorities in Mexico periodically update TDH about dengue activity in Mexico. In addition, TDH is continuing its surveillance efforts.

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Editorial Note: Since 1994, epidemics of dengue have increased substantially in the Caribbean, Mexico, and South and Central America and have been associated with circulation of all four dengue virus serotypes. In 1995, approximately 240,000 cases of dengue were reported in Central and South America (Pan American Health Organization, unpublished data, 1995). In Mexico, laboratory and morbidity surveillance have been strengthened for monitoring disease trends. During 1984–1993, only 26 cases of DHF were reported in Mexico; in comparison, during 1994 and 1995, DHF occurred in 30 and 92 patients, respectively, with laboratory-confirmed dengue. During 1995, most cases of dengue in Tamaulipas were attributed to DEN-2; however, DEN-3 was isolated for the first time in Mexico, occurring in areas from southern Mexico to Tamaulipas (5). Because of the increased risk for epidemic DHF in Mexico, the

Dengue Fever — Continued

Ministry of Health has initiated an intensive prevention and control program in areas with endemic dengue. The program emphasizes laboratory-supported dengue surveillance, health education, community participation, and intensive mosquito control.

Although dengue fever is not endemic in the United States, imported cases are diagnosed each year and additional cases probably are undetected. The seven cases acquired locally in Texas during 1995 underscore that, during periods of intense dengue activity in contiguous Mexico, indigenous dengue can occur in adjacent areas of south Texas. During 1980, following a 2-year period of intense transmission of dengue in Mexico, cases occurred among residents of Texas; these cases were the first to be indigenously transmitted in the United States since 1945. During 1986, nine of the 17 laboratory-diagnosed infections in Texas were acquired locally (2).

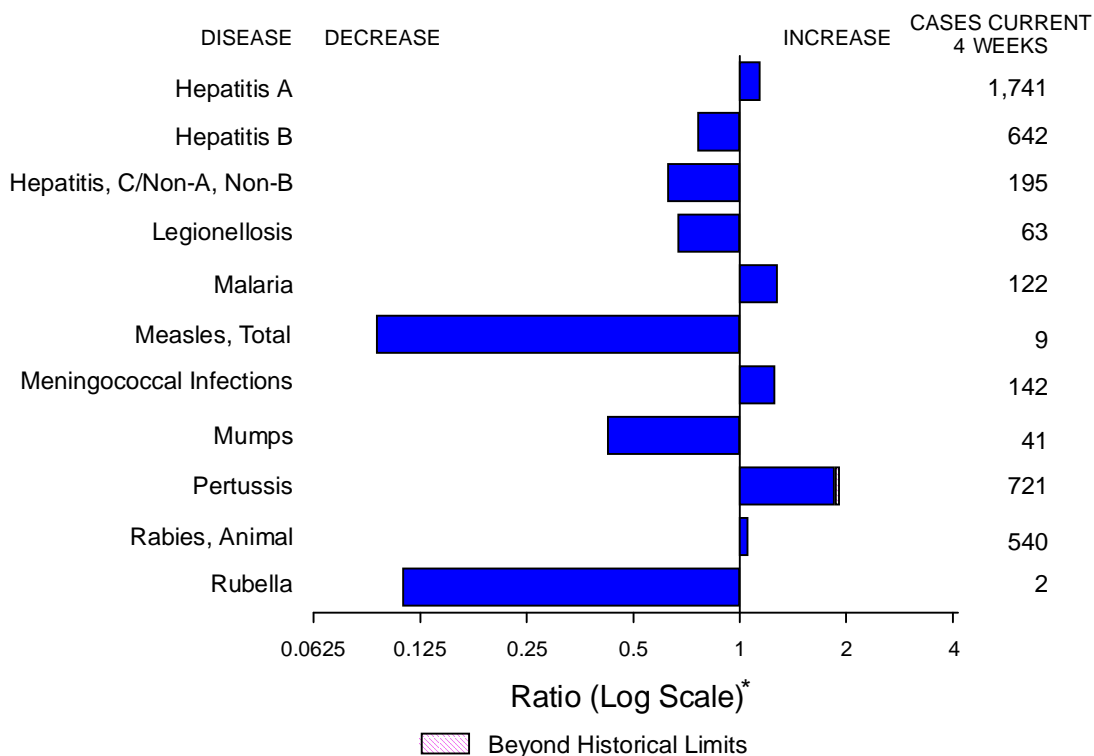
Although *Ae. aegypti* is the principal epidemic dengue vector worldwide, *Ae. albopictus* has been associated with disease transmission, primarily as a maintenance vector in Asia (6). Both species are present in south Texas and northeastern Mexico and in areas of Brazil, the Dominican Republic, and Guatemala; however, *Ae. albopictus* has not been documented to be a vector for dengue in the Americas. In Texas, the primary larval habitat for *Ae. aegypti* is water containers (e.g., flower pots, bird baths, and old cans or tires). These containers also are an important larval habitat in Mexico and, in addition to other habitats (e.g., tree holes) may be inhabited by *Ae. albopictus* larvae. *Aedes* larval habitats can be eliminated by removing, emptying, or covering these containers.

Cases of suspected dengue should be reported to state and territorial health departments. Reports should include a clinical summary, dates of onset of illness and blood collection, and other relevant epidemiologic information (e.g., a detailed travel history with dates and location of travel). Serum samples should be sent for confirmation through state health department laboratories to CDC's Dengue Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, 2 Calle Casia, San Juan, PR 00921-3200; telephone (787) 766-5181; fax (787) 766-6596.

References

1. Pan American Health Organization. Dengue and dengue hemorrhagic fever: guidelines for prevention and control. Washington, DC: Pan American Health Organization, 1994:12-3.
2. Rigau-Perez JG, Gubler DJ, Vorndam AV, Clark GG. Dengue surveillance—United States, 1986-1992. In: CDC surveillance summaries (July). MMWR 1994;43(no. SS-2):7-19.
3. Tassniyom S, Vasanawathana S, Chirawatkul A, Rojanasuphot S. Failure of high-dose methylprednisolone in established dengue shock syndrome: a placebo-controlled, double-blind study. Pediatrics 1993;92:111-5.
4. Barnett B, Hayes J. Dengue mosquito vectors in Texas. Disease Prevention News 1995;55:2-3.
5. Briseno-Garcia B, Gomez-Dantes H, Argott-Ramirez E, et al. Potential risk for dengue hemorrhagic fever: the isolation of serotype dengue-3 in Mexico. Emerging Infectious Diseases 1996;2:133-5.
6. Gubler DJ. Dengue. In: Monath TP, ed. The arboviruses: epidemiology and ecology. Boca Raton, Florida: CRS Press, 1988;2:223-60.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending September 28, 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 — provisional cases of selected notifiable diseases, United States, cumulative, week ending September 28, 1996 (39th Week)

	Cum. 1996		Cum. 1996
Anthrax	-	HIV infection, pediatric*§	216
Brucellosis	61	Plague	1
Cholera	3	Poliomyelitis, paralytic¶	-
Congenital rubella syndrome	1	Psittacosis	28
Cryptosporidiosis*	1,562	Rabies, human	1
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	532
Encephalitis: California*	56	Streptococcal toxic-shock syndrome*	14
eastern equine*	1	Syphilis, congenital**	225
St. Louis*	-	Tetanus	20
western equine*	-	Toxic-shock syndrome	103
Hansen Disease	76	Trichinosis	15
Hantavirus pulmonary syndrome*†	14	Typhoid fever	262

-: 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 September 24, 1996.

¶ Three suspected cases of polio with onset in 1996 has been reported to date.

**Updated quarterly from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending September 28, 1996, and September 30, 1995 (39th Week)

Reporting Area	AIDS*		Chlamydia	Escherichia coli 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	51,611	54,405	271,633	1,962	1,067	211,240	294,093	2,495	2,933	645	886
NEW ENGLAND	2,065	2,626	12,442	263	62	5,280	5,716	89	96	36	22
Maine	32	82	694	21	-	46	70	-	-	2	5
N.H.	66	75	397	32	31	80	89	7	12	2	1
Vt.	18	28	U	21	21	42	46	30	9	3	-
Mass.	997	1,122	4,987	129	10	1,676	1,995	46	70	20	13
R.I.	129	187	1,456	10	-	388	400	6	5	9	3
Conn.	823	1,132	4,908	50	-	3,048	3,116	-	-	N	N
MID. ATLANTIC	14,243	14,635	32,391	171	38	24,142	33,491	220	344	167	152
Upstate N.Y.	1,855	1,729	N	120	12	4,840	7,381	173	169	57	40
N.Y. City	7,855	7,609	15,097	10	-	7,762	13,276	1	1	6	5
N.J.	2,905	3,553	3,878	41	5	3,707	3,257	-	139	12	23
Pa.	1,628	1,744	13,416	N	21	7,833	9,577	46	35	92	84
E.N. CENTRAL	4,076	4,092	46,180	474	323	31,208	58,491	342	249	170	264
Ohio	871	847	13,884	134	82	9,924	18,224	27	8	76	124
Ind.	498	423	7,397	70	44	4,811	6,659	8	3	36	61
Ill.	1,808	1,726	18,363	193	84	13,341	15,291	52	70	9	25
Mich.	685	817	U	77	65	U	13,285	255	168	34	24
Wis.	214	279	6,536	N	48	3,132	5,032	-	-	15	30
W.N. CENTRAL	1,221	1,245	20,908	455	278	9,283	15,173	96	65	34	63
Minn.	226	284	2,702	200	194	U	2,176	1	2	3	5
Iowa	72	71	3,063	101	55	779	1,151	45	12	9	18
Mo.	626	559	9,184	50	-	6,176	8,682	31	18	6	13
N. Dak.	10	4	2	14	14	-	24	-	5	-	3
S. Dak.	10	14	725	19	-	103	161	-	1	2	3
Nebr.	83	84	1,920	42	3	718	881	5	15	11	14
Kans.	194	229	3,312	29	12	1,507	2,098	14	12	3	7
S. ATLANTIC	13,079	14,075	40,993	109	54	72,200	81,202	204	179	105	142
Del.	232	239	1,148	1	1	1,101	1,670	1	-	10	2
Md.	1,961	2,226	5,154	N	8	10,791	9,855	1	7	22	24
D.C.	1,001	828	N	-	-	3,313	3,483	-	-	8	4
Va.	896	1,077	8,386	N	24	6,863	8,187	12	14	13	18
W. Va.	88	84	1	N	2	382	506	9	43	1	4
N.C.	677	816	-	33	12	13,831	18,048	39	46	7	31
S.C.	667	766	-	8	7	8,275	9,333	23	16	4	28
Ga.	1,867	1,791	8,573	29	-	13,857	14,550	U	15	3	14
Fla.	5,690	6,248	17,731	27	-	13,787	15,570	119	38	37	17
E.S. CENTRAL	1,749	1,759	22,759	52	39	24,347	30,584	448	779	38	50
Ky.	309	220	4,989	9	6	3,165	3,567	25	25	5	10
Tenn.	647	709	9,945	22	30	8,899	10,349	331	752	18	24
Ala.	470	483	6,290	10	3	9,939	12,798	4	2	3	6
Miss.	323	347	U	11	-	2,344	3,870	88	U	12	10
W.S. CENTRAL	5,138	4,660	31,239	39	12	23,487	41,213	352	224	18	17
Ark.	207	209	-	12	3	2,555	4,107	7	6	2	5
La.	1,177	780	5,508	5	4	5,953	8,475	157	134	1	2
Okla.	189	206	5,617	8	1	3,604	4,172	69	36	5	4
Tex.	3,565	3,465	20,114	14	4	11,375	24,459	119	48	10	6
MOUNTAIN	1,533	1,710	12,316	163	80	5,313	7,148	436	353	35	91
Mont.	33	17	-	22	-	24	55	14	12	1	4
Idaho	32	38	1,130	28	10	81	109	92	44	-	2
Wyo.	5	12	446	10	2	29	43	141	138	3	10
Colo.	406	523	-	59	35	1,077	2,167	42	54	7	33
N. Mex.	139	137	2,965	10	-	666	801	54	42	1	4
Ariz.	461	540	5,001	N	22	2,661	2,796	53	35	16	9
Utah	144	112	1,183	19	-	232	185	22	11	2	12
Nev.	313	331	1,591	15	11	543	992	18	17	5	17
PACIFIC	8,506	9,603	52,405	236	181	15,980	21,075	308	644	42	85
Wash.	538	711	6,951	73	71	1,526	2,038	43	159	5	20
Oreg.	359	347	U	63	36	456	582	6	34	-	-
Calif.	7,440	8,295	39,659	97	64	13,418	17,479	108	412	33	60
Alaska	28	60	869	3	2	311	520	3	1	1	-
Hawaii	141	190	934	N	8	269	456	148	38	3	5
Guam	4	-	168	N	-	31	87	1	5	2	1
P.R.	1,792	1,904	N	14	U	260	446	79	179	-	-
V.I.	17	27	N	N	U	-	-	-	-	-	-
Amer. Samoa	-	-	N	N	U	-	20	-	-	-	-
C.N.M.I.	1	-	N	N	U	11	49	-	5	-	-

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 September 24, 1996.

†National Electronic Telecommunications System for Surveillance.

‡Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending September 28, 1996, and September 30, 1995 (39th 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	9,423	8,378	1,070	965	2,433	2,291	8,201	12,530	13,775	15,416	4,328	5,893
NEW ENGLAND	3,230	1,667	41	38	101	107	129	277	311	377	556	1,197
Maine	35	16	7	5	12	8	-	2	4	11	77	40
N.H.	32	19	2	1	3	18	1	1	9	15	49	120
Vt.	15	8	3	1	3	9	-	-	1	2	119	142
Mass.	242	107	13	12	41	36	61	46	163	208	89	360
R.I.	410	279	6	4	10	5	1	3	27	38	33	260
Conn.	2,496	1,238	10	15	32	31	66	225	107	103	189	275
MID. ATLANTIC	5,276	5,426	281	272	219	292	320	639	2,480	3,259	322	1,515
Upstate N.Y.	2,942	2,694	66	52	66	78	55	72	308	385	46	887
N.Y. City	206	358	143	149	31	42	94	271	1,239	1,841	-	-
N.J.	572	1,456	51	53	53	70	77	129	543	566	106	275
Pa.	1,556	918	21	18	69	102	94	167	390	467	170	353
E.N. CENTRAL	60	366	105	126	338	323	1,066	2,170	1,524	1,457	81	85
Ohio	37	23	13	9	126	92	449	689	216	199	10	10
Ind.	21	14	13	15	54	47	163	248	134	134	6	14
Ill.	2	16	35	66	89	87	327	846	815	756	22	13
Mich.	-	5	32	15	37	57	U	228	278	300	30	35
Wis.	U	308	12	21	32	40	127	159	81	68	13	13
W.N. CENTRAL	110	140	39	21	199	138	283	606	350	443	416	295
Minn.	39	68	17	4	25	23	51	34	79	107	21	24
Iowa	18	11	2	3	40	25	15	37	47	48	190	105
Mo.	22	38	9	6	84	52	185	498	151	165	17	25
N. Dak.	-	-	1	1	3	1	-	-	6	3	55	24
S. Dak.	-	-	-	2	9	5	-	-	15	20	103	76
Nebr.	3	4	3	3	17	12	12	11	13	20	3	5
Kans.	28	19	7	2	21	20	20	26	39	80	27	36
S. ATLANTIC	524	540	230	185	497	371	2,829	3,117	2,619	2,749	2,108	1,576
Del.	78	37	3	1	2	6	33	11	20	44	61	77
Md.	302	357	61	53	60	31	481	353	228	301	474	319
D.C.	3	2	7	15	10	4	111	84	104	82	9	11
Va.	40	47	36	41	47	51	312	487	201	202	448	319
W. Va.	11	22	4	2	11	8	3	9	46	56	79	95
N.C.	59	47	23	15	62	64	799	862	365	333	553	368
S.C.	4	16	10	1	45	48	298	456	264	234	72	102
Ga.	1	9	23	27	114	74	499	574	479	501	226	215
Fla.	26	3	63	30	146	85	293	281	912	996	186	70
E.S. CENTRAL	55	57	25	21	147	163	1,927	2,579	984	1,090	169	228
Ky.	14	13	3	2	23	37	108	139	179	230	34	23
Tenn.	18	23	12	8	16	63	631	669	297	338	65	78
Ala.	6	7	3	8	62	32	426	507	327	319	67	118
Miss.	17	14	7	3	46	31	762	1,264	181	203	3	9
W.S. CENTRAL	89	86	24	38	283	275	1,148	2,482	1,654	1,989	293	527
Ark.	21	7	-	2	33	26	121	377	140	162	21	34
La.	2	5	6	4	47	39	408	774	59	203	13	24
Okla.	15	36	-	1	30	30	142	150	134	146	25	28
Tex.	51	38	18	31	173	180	477	1,181	1,321	1,478	U	441
MOUNTAIN	6	7	49	48	140	164	110	173	448	490	123	149
Mont.	-	-	6	3	4	2	-	4	14	10	20	41
Idaho	-	-	-	1	19	8	4	-	7	12	-	3
Wyo.	2	3	7	-	3	7	2	-	6	2	24	23
Colo.	-	-	20	22	31	42	23	95	54	59	39	9
N. Mex.	1	1	2	5	22	30	2	6	55	64	5	5
Ariz.	-	-	6	7	35	47	66	35	181	234	27	42
Utah	1	1	4	5	14	14	2	4	39	24	3	15
Nev.	2	2	4	5	12	14	11	29	92	85	5	11
PACIFIC	73	89	276	216	509	458	389	487	3,405	3,562	260	321
Wash.	13	10	19	17	77	74	5	12	186	208	6	12
Oreg.	12	14	17	13	88	83	11	19	77	96	1	1
Calif.	47	65	230	174	333	288	372	455	2,961	3,060	245	301
Alaska	-	-	3	2	7	9	-	1	50	58	8	7
Hawaii	1	-	7	10	4	4	1	-	131	140	-	-
Guam	-	-	-	1	1	2	3	8	35	84	-	-
P.R.	-	-	-	1	5	21	101	215	63	162	37	35
V.I.	-	-	-	2	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	3	-	-
C.N.M.I.	-	-	-	1	-	-	1	9	-	31	-	-

N: Not notifiable

U: Unavailable

-: no reported cases

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending September 28, 1996, and September 30, 1995 (39th 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	818	859	20,322	21,888	7,195	7,378	-	398	-	42
NEW ENGLAND	23	32	278	212	155	178	-	11	-	4
Maine	-	3	15	23	2	7	-	-	-	-
N.H.	8	8	12	9	13	18	-	-	-	-
Vt.	1	2	6	5	10	5	-	1	-	1
Mass.	12	10	151	88	52	66	-	9	-	3
R.I.	2	3	13	25	9	8	-	-	-	-
Conn.	-	6	81	62	69	74	-	1	-	-
MID. ATLANTIC	143	126	1,379	1,338	1,126	1,050	-	23	-	5
Upstate N.Y.	42	34	327	327	264	285	-	-	-	-
N.Y. City	30	30	442	643	458	323	-	9	-	3
N.J.	45	16	250	195	191	285	-	3	-	-
Pa.	26	46	360	173	213	157	-	11	-	2
E.N. CENTRAL	131	146	1,666	2,508	740	831	-	5	-	7
Ohio	78	74	603	1,424	99	85	-	2	-	3
Ind.	9	19	242	138	123	159	-	-	-	-
Ill.	32	35	362	505	178	216	-	2	-	1
Mich.	7	16	330	280	287	312	-	-	-	3
Wis.	5	2	129	161	53	59	-	1	-	-
W.N. CENTRAL	42	64	1,776	1,496	347	481	-	20	-	2
Minn.	25	35	95	144	41	43	-	16	-	2
Iowa	6	3	286	65	75	36	-	-	-	-
Mo.	7	19	847	1,073	165	334	-	3	-	-
N. Dak.	-	-	89	22	2	4	-	-	-	-
S. Dak.	1	1	41	49	5	2	-	-	-	-
Nebr.	1	3	172	38	33	25	-	-	-	-
Kans.	2	3	246	105	26	37	-	1	-	-
S. ATLANTIC	173	171	1,009	828	1,133	944	-	6	-	9
Del.	2	-	13	9	7	7	-	1	-	-
Md.	51	55	168	165	232	195	-	2	-	2
D.C.	5	-	29	20	29	15	-	-	-	-
Va.	8	23	136	157	110	89	-	-	-	3
W. Va.	7	7	13	17	21	41	-	-	-	-
N.C.	22	25	110	88	265	224	-	3	-	1
S.C.	4	2	43	38	68	37	-	-	-	-
Ga.	55	54	123	51	30	62	-	-	-	2
Fla.	19	5	374	283	371	274	-	-	-	1
E.S. CENTRAL	22	8	1,039	1,490	625	657	-	2	-	-
Ky.	4	2	35	36	43	58	-	-	-	-
Tenn.	9	-	688	1,247	364	515	-	2	-	-
Ala.	8	5	147	69	50	84	-	-	-	-
Miss.	1	1	169	138	168	U	-	-	-	-
W.S. CENTRAL	32	54	4,240	3,072	948	984	-	26	-	2
Ark.	-	5	381	427	61	49	-	-	-	-
La.	3	1	123	94	99	154	-	-	-	-
Okla.	26	20	1,775	798	59	128	-	-	-	-
Tex.	3	28	1,961	1,753	729	653	-	26	-	2
MOUNTAIN	80	92	3,308	3,118	839	636	-	152	-	5
Mont.	-	-	92	100	10	19	-	-	-	-
Idaho	1	2	168	254	74	73	-	1	-	-
Wyo.	35	5	26	89	36	17	-	1	-	-
Colo.	11	14	350	396	110	93	-	4	-	3
N. Mex.	9	12	298	640	274	241	-	16	-	-
Ariz.	9	22	1,310	869	199	95	-	8	-	-
Utah	7	9	760	570	74	53	-	117	-	2
Nev.	8	28	304	200	62	45	-	5	-	-
PACIFIC	172	166	5,627	7,826	1,282	1,617	-	153	-	8
Wash.	2	8	358	637	73	143	-	51	-	-
Oreg.	22	22	654	2,075	57	95	-	4	-	-
Calif.	144	131	4,526	4,939	1,129	1,355	-	34	-	5
Alaska	2	1	34	38	12	11	-	63	-	-
Hawaii	2	4	55	137	11	13	-	1	-	3
Guam	-	-	2	7	-	4	U	-	U	-
P.R.	1	3	89	79	286	483	-	7	-	-
V.I.	-	-	-	6	-	14	U	-	U	-
Amer. Samoa	-	-	-	6	-	-	U	-	U	-
C.N.M.I.	10	11	1	24	5	19	U	-	U	-

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

*Of 190 cases among children aged <5 years, serotype was reported for 42 and of those, 12 were type b.

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

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending September 28, 1996, and September 30, 1995 (39th 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	440	271	8	479	637	113	3,702	3,185	-	197	106
NEW ENGLAND	15	9	-	1	11	33	764	452	-	25	44
Maine	-	-	-	-	4	-	20	27	-	-	-
N.H.	-	-	-	-	1	7	76	33	-	-	1
Vt.	2	-	-	-	-	3	71	62	-	2	-
Mass.	12	2	-	1	2	23	549	305	-	20	7
R.I.	-	5	-	-	1	-	25	2	-	-	-
Conn.	1	2	-	-	3	-	23	23	-	3	36
MID. ATLANTIC	28	12	1	64	98	13	307	269	-	9	13
Upstate N.Y.	-	1	1	21	24	13	177	122	-	4	3
N.Y. City	12	5	-	14	14	-	25	41	-	3	8
N.J.	3	6	-	2	16	-	11	16	-	2	2
Pa.	13	-	-	27	44	-	94	90	-	-	-
E.N. CENTRAL	12	14	2	86	109	18	400	372	-	3	3
Ohio	5	1	-	39	33	-	192	110	-	-	-
Ind.	-	-	1	7	8	7	43	26	-	-	-
Ill.	3	2	1	19	32	11	128	81	-	1	-
Mich.	3	5	-	20	36	-	32	59	-	2	3
Wis.	1	6	-	1	-	-	5	96	-	-	-
W.N. CENTRAL	22	2	-	14	38	14	257	192	-	1	-
Minn.	18	-	-	5	2	10	197	86	-	-	-
Iowa	-	-	-	1	9	-	13	7	-	1	-
Mo.	3	1	-	5	22	3	31	50	-	-	-
N. Dak.	-	-	-	2	1	-	1	8	-	-	-
S. Dak.	-	-	-	-	-	-	4	11	-	-	-
Nebr.	-	-	-	-	4	1	7	9	-	-	-
Kans.	1	1	-	1	-	-	4	21	-	-	-
S. ATLANTIC	15	11	1	83	93	12	436	268	-	91	9
Del.	1	-	-	-	-	-	12	10	-	-	-
Md.	4	1	-	22	28	6	160	33	-	-	1
D.C.	-	-	-	-	-	-	-	5	-	1	-
Va.	3	-	-	12	20	-	55	15	-	2	-
W. Va.	-	-	-	-	-	-	2	-	-	-	-
N.C.	4	-	-	19	16	-	79	110	-	77	1
S.C.	-	-	-	5	9	4	29	20	-	1	-
Ga.	2	2	-	3	6	-	17	19	-	-	-
Fla.	1	8	1	22	14	2	82	56	-	10	7
E.S. CENTRAL	2	-	-	21	9	2	75	260	-	2	1
Ky.	-	-	-	-	-	2	29	18	-	-	-
Tenn.	2	-	-	3	2	-	20	205	-	-	1
Ala.	-	-	-	3	4	-	18	35	-	2	-
Miss.	-	-	-	15	3	-	8	2	N	N	N
W.S. CENTRAL	28	25	1	28	44	2	89	249	-	3	7
Ark.	-	2	-	2	7	1	10	33	-	-	-
La.	-	18	1	13	9	1	8	16	-	1	-
Okla.	-	-	-	-	-	-	8	28	-	-	-
Tex.	28	5	-	13	28	-	63	172	-	2	7
MOUNTAIN	157	68	1	18	27	3	321	486	-	6	4
Mont.	-	-	-	-	1	1	26	3	-	-	-
Idaho	1	-	-	-	3	-	100	89	-	2	-
Wyo.	1	-	-	-	-	-	4	1	-	-	-
Colo.	7	26	1	3	1	2	84	78	-	2	-
N. Mex.	16	31	N	N	N	-	45	86	-	-	-
Ariz.	8	10	-	1	2	-	23	153	-	1	3
Utah	119	-	-	2	11	-	14	19	-	-	1
Nev.	5	1	-	12	9	-	25	57	-	1	-
PACIFIC	161	130	2	164	208	16	1,053	637	-	57	25
Wash.	51	19	-	18	10	-	463	212	-	2	1
Oreg.	4	1	-	-	-	-	31	40	-	1	-
Calif.	39	108	2	120	179	16	534	342	-	51	19
Alaska	63	-	-	2	12	-	3	-	-	-	-
Hawaii	4	2	-	24	7	-	22	43	-	3	5
Guam	-	-	U	5	3	U	1	2	U	-	1
P.R.	7	3	-	1	2	-	1	1	-	-	-
V.I.	-	-	U	-	3	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
September 28, 1996 (39th 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	567	396	100	45	13	13	37	S. ATLANTIC	1,147	711	238	139	36	22	62
Boston, Mass.	154	94	39	15	2	4	1	Atlanta, Ga.	133	76	31	20	5	1	5
Bridgeport, Conn.	47	31	5	6	4	1	3	Baltimore, Md.	206	116	51	33	3	3	18
Cambridge, Mass.	18	13	3	2	-	-	3	Charlotte, N.C.	103	69	25	4	3	2	6
Fall River, Mass.	25	18	3	4	-	-	1	Jacksonville, Fla.	102	77	16	9	-	-	2
Hartford, Conn.	52	33	11	3	-	5	2	Miami, Fla.	107	53	25	23	5	1	1
Lowell, Mass.	26	23	3	-	-	-	2	Norfolk, Va.	51	35	11	3	2	-	4
Lynn, Mass.	9	9	-	-	-	-	-	Richmond, Va.	86	51	20	8	3	4	1
New Bedford, Mass.	25	22	3	-	-	-	-	Savannah, Ga.	43	30	6	6	1	-	5
New Haven, Conn.	46	23	12	7	3	1	3	St. Petersburg, Fla.	45	34	5	2	3	1	-
Providence, R.I.	46	39	3	1	2	1	4	Tampa, Fla.	142	95	23	15	7	1	17
Somerville, Mass.	5	4	1	-	-	-	-	Washington, D.C.	122	68	25	16	4	9	3
Springfield, Mass.	37	27	7	2	1	-	5	Wilmington, Del.	7	7	-	-	-	-	-
Waterbury, Conn.	21	15	4	1	-	1	2	E.S. CENTRAL	797	524	165	69	20	17	51
Worcester, Mass.	56	45	6	4	1	-	11	Birmingham, Ala.	93	58	22	9	1	1	2
MID. ATLANTIC	2,313	1,561	433	235	44	40	116	Chattanooga, Tenn.	99	69	23	5	1	1	5
Albany, N.Y.	47	32	7	5	1	2	3	Knoxville, Tenn.	73	47	16	8	2	-	10
Allentown, Pa.	U	U	U	U	U	U	U	Lexington, Ky.	71	49	11	5	3	3	5
Buffalo, N.Y.	67	45	15	5	1	1	5	Memphis, Tenn.	160	111	30	15	4	-	12
Camden, N.J.	39	23	5	6	2	3	4	Mobile, Ala.	103	71	18	9	2	3	-
Elizabeth, N.J.	18	13	2	2	1	-	3	Montgomery, Ala.	51	36	5	6	2	2	2
Erie, Pa.‡	34	26	7	-	-	1	1	Nashville, Tenn.	147	83	40	12	5	7	15
Jersey City, N.J.	52	30	11	9	-	2	1	W.S. CENTRAL	1,326	808	293	143	46	36	65
New York City, N.Y.	1,175	794	225	124	23	9	37	Austin, Tex.	77	49	15	8	2	3	5
Newark, N.J.	63	25	10	23	3	2	3	Baton Rouge, La.	29	13	9	6	-	1	-
Paterson, N.J.	24	13	6	4	-	1	3	Corpus Christi, Tex.	63	43	10	4	3	3	4
Philadelphia, Pa.	411	279	75	35	11	11	20	Dallas, Tex.	157	82	38	28	9	-	4
Pittsburgh, Pa.‡	49	34	8	4	-	3	5	El Paso, Tex.	63	45	12	4	1	1	2
Reading, Pa.	14	10	1	2	-	1	2	Ft. Worth, Tex.	102	60	21	13	6	2	4
Rochester, N.Y.	129	104	19	6	-	-	13	Houston, Tex.	353	198	91	44	7	13	26
Schenectady, N.Y.	21	14	6	1	-	-	1	Little Rock, Ark.	67	41	15	5	1	5	3
Scranton, Pa.‡	23	19	4	-	-	-	1	New Orleans, La.	71	42	17	5	4	3	-
Syracuse, N.Y.	67	48	11	4	2	2	6	San Antonio, Tex.	230	150	48	20	9	3	11
Trenton, N.J.	33	19	9	3	-	2	4	Shreveport, La.	14	11	2	-	1	-	3
Utica, N.Y.	18	15	3	-	-	-	1	Tulsa, Okla.	100	74	15	6	3	2	3
Yonkers, N.Y.	29	18	9	2	-	-	3	MOUNTAIN	886	604	161	76	26	17	63
E.N. CENTRAL	1,831	1,268	312	161	44	43	78	Albuquerque, N.M.	102	82	12	6	2	-	4
Akron, Ohio	42	29	8	4	1	-	-	Colo. Springs, Colo.	50	41	4	2	2	1	7
Canton, Ohio	39	31	5	2	1	-	5	Denver, Colo.	94	56	21	11	1	5	8
Chicago, Ill.	395	226	80	64	14	8	19	Las Vegas, Nev.	220	144	48	23	4	-	11
Cincinnati, Ohio	92	60	16	9	3	4	5	Ogden, Utah	23	16	2	3	2	-	1
Cleveland, Ohio	U	U	U	U	U	U	U	Phoenix, Ariz.	165	103	28	18	9	6	14
Columbus, Ohio	181	132	34	11	-	4	5	Pueblo, Colo.	21	17	3	1	-	-	1
Dayton, Ohio	108	92	6	6	1	3	8	Salt Lake City, Utah	96	68	15	6	5	2	10
Detroit, Mich.	189	121	37	20	7	4	6	Tucson, Ariz.	115	77	28	6	1	3	7
Evansville, Ind.	53	43	7	2	1	-	2	PACIFIC	1,409	960	264	122	28	35	108
Fort Wayne, Ind.	60	43	12	3	1	1	3	Berkeley, Calif.	19	13	5	1	-	-	2
Gary, Ind.	9	5	-	1	3	-	-	Fresno, Calif.	43	31	4	2	2	4	3
Grand Rapids, Mich.	62	46	10	4	-	2	2	Glendale, Calif.	20	13	5	2	-	-	2
Indianapolis, Ind.	143	95	23	17	2	6	6	Honolulu, Hawaii	67	44	16	5	1	1	3
Madison, Wis.	48	36	10	1	-	1	5	Long Beach, Calif.	65	42	16	3	1	3	8
Milwaukee, Wis.	111	82	21	2	1	5	4	Los Angeles, Calif.	369	255	56	36	11	11	21
Peoria, Ill.	42	28	9	2	1	2	1	Pasadena, Calif.	22	20	1	-	1	-	1
Rockford, Ill.	49	37	7	2	3	-	1	Portland, Ore.	117	77	20	13	4	3	8
South Bend, Ind.	54	42	9	1	2	-	1	Sacramento, Calif.	U	U	U	U	U	U	U
Toledo, Ohio	97	77	12	5	3	-	3	San Diego, Calif.	154	97	37	13	3	4	14
Youngstown, Ohio	57	43	6	5	-	3	2	San Francisco, Calif.	112	79	20	13	-	-	16
W.N. CENTRAL	708	494	112	53	19	23	50	San Jose, Calif.	157	109	33	9	2	4	13
Des Moines, Iowa	65	46	12	5	2	-	6	Santa Cruz, Calif.	29	23	6	-	-	-	4
Duluth, Minn.	29	24	2	3	-	-	4	Seattle, Wash.	121	75	24	18	2	2	3
Kansas City, Kans.	32	18	10	2	1	1	1	Spokane, Wash.	47	34	9	2	-	2	2
Kansas City, Mo.	72	44	15	3	2	1	3	Tacoma, Wash.	67	48	12	5	1	1	8
Lincoln, Nebr.	36	25	7	2	2	-	2	TOTAL	10,984†	7,326	2,078	1,043	276	246	630
Minneapolis, Minn.	186	130	24	22	4	6	11								
Omaha, Nebr.	74	50	12	6	2	4	8								
St. Louis, Mo.	108	76	15	6	3	8	12								
St. Paul, Minn.	55	40	9	2	2	2	3								
Wichita, Kans.	51	41	6	2	1	1	-								

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.

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