CENTERS FOR DISEASE CONTROL

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MORBIDITY AND MORTALITY WEEKLY REPORT



## Deaths Attributable to Tubal Sterilization — United States, 1977-1981

From 1977 through 1981, 29 deaths attributable to tubal sterilization were reported in the United States. Eleven of these followed complications of general anesthesia; seven were due to sepsis; four, to hemorrhage; four, to cardiovascular events; and three, to other causes.

Over five million women underwent tubal sterilization during the 1970s, with an estimated case/fatality rate of 3.6/100,000 (*1*). In 1979, CDC began surveillance of tubal sterilization deaths to determine why they occur and what can be done to prevent them. Sterilization-attributable deaths were identified through a nationwide reporting effort involving individual clinicians, state health departments, medical examiners' offices, and professional societies and through the Commission on Professional and Hospital Activities (CPHA). CPHA annually collects information on approximately 40% of patients discharged from U.S. short-stay hospitals (*2*). Medical records were requested for each death, and a detailed clinical summary was prepared without any identifying information. A death was considered sterilization-attributable if it would not have occurred in the absence of the tubal sterilization.

Hypoventilation was believed to have contributed to six of the 11 deaths attributed to general anesthesia complications. No woman whose death was so attributed had been intubated. Of four women who died after intraoperative cardiac arrests of unknown causes, three had conditions that may have contributed to death. The remaining death resulted from an idiosyncratic reaction to anesthesia.

Of the four women who died of cardiovascular complications, three died of postoperative myocardial infarction; they were ages 33, 35, and 37, and none had a preoperative diagnosis of cardiac disease. The fourth woman, aged 24, who took oral contraceptives up to the day of tubal sterilization died of a mesenteric vein thrombosis.

Three of the seven women whose deaths were attributed to sepsis had apparent bowel injury following unipolar coagulation. Of the four remaining deaths, three followed other types of organ injury, and the fourth followed a pelvic infection of unknown origin. Three of the four deaths attributed to hemorrhage followed major vessel lacerations that occurred on entry into the peritoneal cavity during a laparoscopic sterilization; the remaining death occurred after a surgical ligature slipped from a fallopian tube stump.

*Reported by Epidemiologic Studies Br, Family Planning Evaluation Div, Center for Health Promotion and Education, CDC.*

**Editorial Note:** The 29 reported deaths do not represent all the sterilization-attributable deaths from 1977 to 1981; as many as 108 such deaths may have occurred (*3*). If this estimate is correct, surveillance has identified 27% of the estimated sterilization-attributable deaths.

In 1981, CDC reported that anesthesia complications were the leading cause of abortion-related deaths and that use of general anesthesia increased the risk of death associated with induced abortion (*4*). Similarly, the risk of death from tubal sterilization appears greater with general than with local anesthesia. Hypoventilation has been reported as a leading cause of

*Tubal Sterilization — Continued*

anesthesia-related deaths for a variety of surgical procedures (*4,5*) and also appears to be a major cause of anesthesia-related tubal sterilization deaths. No women whose deaths were attributed to hypoventilation had been intubated before sterilization; furthermore, four of these six women had laparoscopic tubal sterilizations. Endotracheal intubation—particularly for laparoscopic sterilization—has been recommended in an attempt to prevent hypoventilation deaths (*6*).

Four women died from cardiovascular complications following sterilization procedures. Among factors that may have increased their mortality risk were: smoking, oral contraceptive use at the time of surgery, and age over 35.

Three deaths due to sepsis were attributed to thermal bowel injury associated with unipolar coagulating devices. Because unipolar coagulation may be associated with greater risk of electrical accidents than bipolar coagulation, without any demonstrated greater efficacy, its continued use in tubal sterilization has been questioned (*7*). Recently, the Board of Trustees of the American Association of Gynecologic Laparoscopists issued a statement suggesting that procedures other than unipolar coagulation be encouraged for laparoscopic sterilization (*8*).

CDC continues its surveillance of sterilization-attributable deaths and requests that information about individual cases be reported to: Sterilization Surveillance Activity, Epidemiologic Studies Branch, Division of Reproductive Health, CDC.

*References*

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7. Peterson HB, Ory HW, Greenspan JR, Tyler CW, Jr. Deaths associated with laparoscopic sterilization by unipolar electrocoagulating devices, 1978 and 1979. Am J Obstet Gynecol 1981;139:141-3.
8. Board of Trustees, American Association of Gynecologic Laparoscopists. Unpublished communication to members.

## Hospital-Associated Outbreak of *Shigella dysenteriae* Type 2 — Maryland

An outbreak of severe dysentery caused by *Shigella dysenteriae* type 2 recently occurred at the U.S. Naval Hospital, Bethesda, Maryland. Epidemiologic investigation implicated the salad bar in the active-duty staff cafeteria as the source of infection.

In March 1983, 95 (6%) of 1,490 active-duty hospital staff members and 12 other individuals (three hospital inpatients, four visitors, and five food-service workers) became ill with acute dysentery. Onset of illness occurred over an 11-day period, and the epidemic curve was consistent with a common-source outbreak (Figure 1). Patients presented with chills, fever, abdominal cramps, and the abrupt onset of profuse watery or bloody diarrhea. Nausea, vomiting, myalgias, and dehydration were frequently noted. A case was defined as a patient with two or more of the following: 1) fever or chills, 2) nausea or vomiting, 3) watery or bloody diarrhea (more than two non-formed bowel movements per day), or 4) abdominal cramps. Twenty-four individuals required hospitalization for intravenous hydration. The duration of illness for most persons ranged from 3 to 8 days.

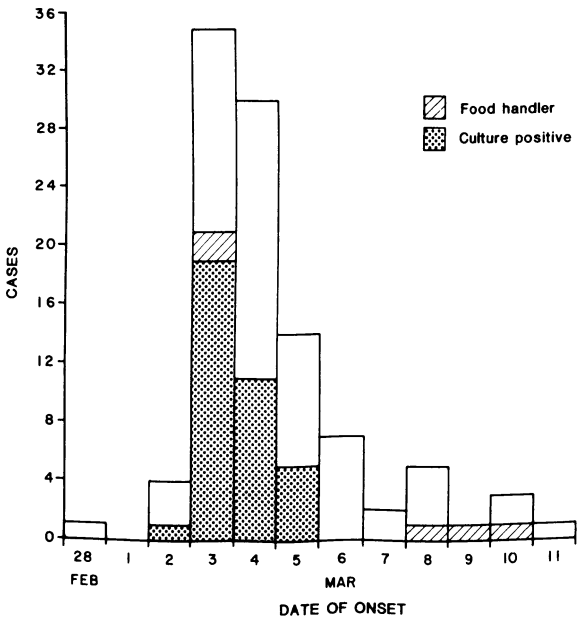
*Shigella dysenteriae — Continued*

*S. dysenteriae* type 2 was cultured from stool specimens of 36 of the 80 affected individuals who were cultured. All symptomatic individuals were treated with a 5-day course of either ampicillin or trimethoprim sulfamethoxazole, both of which were effective against the organism in vitro. One hundred three of 107 known symptomatic individuals and 102 controls matched by job category were interviewed, and food-specific histories were obtained. Eating food prepared in the staff cafeteria, where 900-1,300 persons eat one or more meals daily, was significantly associated with illness ($p < 0.0001$). Analysis of food histories from patients and controls who ate at the cafeteria at any time between February 28 and March 3 showed that patients were significantly more likely than controls to have eaten raw vegetables from the salad bar ($p = 0.004$). A single batch of salad vegetables prepared on February 28 was served at the salad bar through March 3. No single salad item or dressing was specifically implicated. No samples of salad from the days in question were available for culture, and no cultures taken from available food items were positive. No other outbreaks of food-related shigellosis were reported to state health authorities during the outbreak period.

Interviews and stool cultures were obtained from 63 food handlers. Five had illnesses meeting the case definition with onset concurrent with the other cases. Although no index case was identified, gastrointestinal illnesses appeared to be common causes of absenteeism among food handlers during the 3 weeks preceding the outbreak. No food handler had a positive stool culture; none reported recent emigration or foreign travel.

The scope of the outbreak was undoubtedly limited by the exclusion of civilians from eating in the cafeteria and because food for inpatients is prepared in separate areas by different personnel. Although a few staff members continued to work while ill, most did not work after onset of symptoms. Only ambulatory inpatients or visitors who ate in the staff cafeteria became ill. Two persons with presumed secondary cases who denied eating in the cafeteria were identified, including a civilian nurse who reported taking a rectal culture 12

**FIGURE 1.** *Shigella dysenteriae* **cases, by date of onset and culture result* — Bethesda Naval Hospital, Maryland**




*Excludes four cases with unknown date of onset.

*Shigella dysenteriae — Continued*

hours before onset of her own symptoms from a hospitalized patient with a case, and a student laboratory technician who had contact with other ill technicians.

Preliminary food histories led to closing the salad bar, the cold-sandwich line, and a self-serve ice cream machine on March 7; these were reopened on March 14. Symptomatic health care workers rapidly improved with antibiotic therapy and were allowed to return to work 48 hours after symptoms had subsided. Symptomatic food handlers were required to have two negative rectal cultures, 24 hours apart, after completion of antibiotic therapy. The impact of this outbreak on the hospital operation was considerable. Well staff members volunteered for additional shifts to care for ill co-workers who were hospitalized on a separate ward. The Naval Hospital was not forced to restrict elective admissions.

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**Editorial Note:** *S. dysenteriae* type 2 is an uncommon cause of disease in the United States; in 1982, only 0.2% (20/8,939) of the *Shigella* isolates of known serotype reported to CDC were type 2.

*(Continued on page 257)*

**TABLE I. Summary—cases specified notifiable diseases, United States**

| Disease | Cumulative, 19th Week Ending | | | 19th Week Ending | | |
|---|---|---|---|---|---|---|
| | May 14, 1983 | May 15, 1982 | Median 1978-1982 | May 14, 1983 | May 15, 1982 | Median 1978-1982 |
| Aseptic meningitis | 81 | 90 | 62 | 1,482 | 1,460 | 1,174 |
| Encephalitis: Primary (arthropod-borne & unspec.) | 16 | 17 | 15 | 299 | 310 | 225 |
| Post-infectious | 1 | 3 | 4 | 28 | 24 | 67 |
| Gonorrhea: Civilian | 15,546 | 19,169 | 18,424 | 318,866 | 338,776 | 344,307 |
| Military | 491 | 831 | 623 | 8,774 | 10,028 | 10,028 |
| Hepatitis: Type A | 390 | 454 | 576 | 8,441 | 8,308 | 9,874 |
| Type B | 395 | 409 | 339 | 7,912 | 7,523 | 5,858 |
| Non A, Non B | 67 | 47 | N | 1,194 | 776 | N |
| Unspecified | 141 | 157 | 171 | 2,854 | 3,057 | 3,654 |
| Legionellosis | 15 | 4 | N | 244 | 137 | N |
| Leprosy | 4 | 3 | 3 | 99 | 72 | 61 |
| Malaria | 10 | 16 | 16 | 237 | 291 | 291 |
| Measles: Total | 20 | 64 | 379 | 727 | 550 | 7,197 |
| Indigenous | 6 | N | N | 598 | N | N |
| Imported* | 14 | N | N | 129 | N | N |
| Meningococcal infections: Total | 61 | 73 | 69 | 1,248 | 1,355 | 1,278 |
| Civilian | 61 | 73 | 69 | 1,236 | 1,350 | 1,268 |
| Military | - | - | - | 12 | 5 | 10 |
| Mumps | 86 | 141 | 308 | 1,595 | 2,819 | 5,085 |
| Pertussis | 45 | 12 | 20 | 620 | 392 | 392 |
| Rubella (German measles) | 30 | 77 | 164 | 442 | 1,153 | 2,001 |
| Syphilis (Primary & Secondary): Civilian | 457 | 523 | 500 | 11,675 | 12,069 | 9,562 |
| Military | 5 | 8 | 8 | 175 | 150 | 129 |
| Toxic-shock syndrome | 2 | N | N | 140 | N | N |
| Tuberculosis | 377 | 492 | 561 | 7,992 | 8,931 | 9,353 |
| Tularemia | 2 | 4 | 3 | 63 | 39 | 40 |
| Typhoid fever | 4 | 4 | 8 | 132 | 134 | 138 |
| Typhus fever, tick-borne (RMSF) | 10 | 21 | 25 | 69 | 80 | 66 |
| Rabies, animal | 117 | 138 | 138 | 2,357 | 2,181 | 2,181 |

**TABLE II. Notifiable diseases of low frequency, United States**

| | Cum. 1983 | | Cum. 1983 |
|---|---|---|---|
| Anthrax | - | Plague | 2 |
| Botulism: Foodborne | 8 | Poliomyelitis: Total | 1 |
| Infant | 25 | Paralytic | 1 |
| Other | - | Psittacosis (Mich. 1, Oreg. 1) | 36 |
| Brucellosis (Va. 1, Tex. 4) | 45 | Rabies, human | 2 |
| Cholera | - | Tetanus | 16 |
| Congenital rubella syndrome | 9 | Trichinosis (N.J. 1) | 15 |
| Diphtheria | - | Typhus fever, flea-borne (endemic, murine) | 11 |
| Leptospirosis | 12 | | |

*Thirteen of the 20 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

## TABLE III. Cases of specified notifiable diseases, United States, weeks ending May 14, 1983 and May 15, 1982 (19th week)

| Reporting Area | Aseptic Meningitis | Encephalitis | | Gonorrhea (Civilian) | | Hepatitis (Viral), by type | | | | Legionellosis | Leprosy | Malaria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Primary | Post-infectious | | | A | B | NA,NB | Unspecified | | | |
| | 1983 | Cum. 1983 | Cum. 1983 | Cum. 1983 | Cum. 1982 | 1983 | 1983 | 1983 | 1983 | 1983 | Cum. 1983 | Cum. 1983 |
| UNITED STATES | 81 | 299 | 28 | 318,866 | 338,776 | 390 | 395 | 67 | 141 | 15 | 99 | 237 |
| NEW ENGLAND | 4 | 16 | - | 8,173 | 8,110 | 7 | 16 | 3 | 7 | 6 | 2 | 7 |
| Maine | 1 | - | - | 435 | 354 | 1 | - | - | - | - | - | - |
| N.H. | - | 1 | - | 217 | 266 | 2 | - | - | - | - | 2 | - |
| Vt. | - | 1 | - | 145 | 169 | - | - | 1 | - | - | - | - |
| Mass. | 2 | 8 | - | 3,579 | 3,801 | 4 | 6 | 1 | 7 | - | - | 2 |
| R.I. | - | - | - | 454 | 555 | - | 2 | - | - | - | - | 1 |
| Conn. | 1 | 6 | - | 3,343 | 2,965 | - | 8 | 1 | - | 6 | - | 4 |
| MID ATLANTIC | 8 | 36 | 4 | 39,955 | 40,430 | 71 | 63 | 3 | 30 | 1 | 17 | 39 |
| Upstate N.Y. | 4 | 11 | - | 5,856 | 6,498 | 7 | 23 | 3 | 6 | - | - | 13 |
| N.Y. City | 1 | 7 | - | 17,284 | 17,098 | 55 | 12 | - | 5 | 1 | 16 | 13 |
| N.J. | 3 | 8 | - | 7,853 | 7,106 | 9 | 28 | - | 19 | - | - | 10 |
| Pa. | U | 10 | 4 | 8,962 | 9,728 | U | U | U | U | U | 1 | 3 |
| E.N. CENTRAL | 5 | 53 | 4 | 42,336 | 48,407 | 36 | 38 | 10 | 10 | 6 | 3 | 10 |
| Ohio | 2 | 21 | 3 | 12,562 | 13,803 | 7 | 19 | 3 | 3 | 6 | 1 | 1 |
| Ind. | 1 | 5 | 1 | 5,091 | 5,347 | 12 | 7 | 3 | 7 | - | - | - |
| Ill. | - | - | - | 8,427 | 13,508 | 3 | 3 | 3 | - | - | 1 | 2 |
| Mich. | 2 | 25 | - | 12,312 | 11,281 | 14 | 9 | 1 | - | - | 1 | 7 |
| Wis. | - | 2 | - | 3,944 | 4,468 | - | - | - | - | - | - | - |
| W.N. CENTRAL | 10 | 39 | 4 | 15,189 | 15,993 | 7 | 5 | 2 | 5 | - | 3 | 9 |
| Minn. | - | 18 | 1 | 2,225 | 2,396 | 6 | 1 | - | 1 | - | 2 | 3 |
| Iowa | 2 | 17 | - | 1,672 | 1,749 | - | 1 | 2 | - | - | - | 2 |
| Mo. | 7 | 2 | - | 7,297 | 7,359 | - | 1 | - | 4 | - | - | 2 |
| N. Dak. | - | - | - | 148 | 228 | - | - | - | - | - | - | 1 |
| S. Dak. | - | - | 1 | 432 | 445 | 1 | 1 | - | - | - | - | - |
| Nebr. | - | 2 | - | 889 | 988 | - | - | - | - | - | - | - |
| Kans. | 1 | - | 2 | 2,526 | 2,828 | - | 1 | - | - | - | 1 | 1 |
| S. ATLANTIC | 16 | 43 | 8 | 82,329 | 87,462 | 38 | 95 | 11 | 16 | 1 | 3 | 32 |
| Del. | - | - | - | 1,509 | 1,328 | - | - | - | 2 | - | - | - |
| Md. | 1 | 7 | - | 10,469 | 10,725 | 2 | 25 | 1 | 2 | - | - | 4 |
| D.C. | - | - | - | 5,619 | 4,532 | - | 3 | - | - | - | - | 3 |
| Va. | 3 | 15 | 1 | 6,823 | 7,481 | 2 | 1 | - | 3 | - | - | 5 |
| W. Va. | - | - | - | 872 | 995 | 2 | 1 | - | - | - | - | 1 |
| N.C. | 6 | 8 | - | 11,915 | 14,059 | 4 | 16 | - | 4 | - | - | 1 |
| S.C. | 1 | 2 | - | 7,993 | 8,316 | 2 | 7 | 2 | - | - | - | 3 |
| Ga. | - | 3 | - | 17,971 | 16,009 | 3 | 18 | 2 | 2 | - | 1 | 2 |
| Fla. | 5 | 8 | 7 | 19,158 | 24,017 | 23 | 24 | 6 | 3 | 1 | 2 | 13 |
| E.S. CENTRAL | 5 | 9 | 2 | 27,377 | 28,563 | 29 | 20 | 1 | 1 | - | - | 3 |
| Ky. | - | - | - | 3,277 | 3,763 | 19 | 5 | - | - | - | - | - |
| Tenn. | 2 | 1 | - | 10,839 | 10,823 | 3 | 8 | 1 | 1 | - | - | - |
| Ala. | 3 | 8 | 2 | 8,910 | 8,812 | 4 | 4 | - | - | - | - | 1 |
| Miss. | - | - | - | 4,351 | 5,165 | 3 | 3 | - | - | - | - | 2 |
| W.S. CENTRAL | 14 | 31 | 1 | 45,967 | 47,027 | 81 | 55 | 3 | 40 | - | 9 | 29 |
| Ark. | 1 | 4 | - | 3,405 | 4,006 | - | 3 | 1 | 2 | - | - | 2 |
| La. | 2 | 3 | - | 8,228 | 8,215 | 18 | 7 | - | 2 | - | - | 2 |
| Okla. | 2 | 6 | 1 | 5,457 | 5,088 | 11 | 19 | 2 | 3 | - | - | 7 |
| Tex. | 9 | 18 | - | 28,877 | 29,718 | 52 | 26 | - | 33 | - | 9 | 18 |
| MOUNTAIN | - | 18 | 2 | 9,851 | 11,882 | 33 | 20 | 6 | 6 | - | 11 | 10 |
| Mont. | - | - | - | 453 | 489 | - | 1 | - | - | - | - | - |
| Idaho | - | - | - | 455 | 544 | 2 | - | - | - | - | - | - |
| Wyo. | U | 2 | - | 251 | 326 | U | U | U | U | U | - | - |
| Colo. | - | 7 | - | 2,707 | 3,143 | 6 | 1 | 1 | 1 | - | 2 | 4 |
| N. Mex. | - | 1 | - | 1,264 | 1,515 | 4 | 2 | 1 | - | - | - | 2 |
| Ariz. | - | 1 | 2 | 2,673 | 3,326 | 20 | 13 | 3 | 4 | - | 9 | 3 |
| Utah | - | 7 | - | 474 | 544 | 1 | 3 | 1 | 1 | - | - | 1 |
| Nev. | - | - | - | 1,574 | 1,995 | - | - | - | - | - | - | - |
| PACIFIC | 19 | 54 | 3 | 47,689 | 50,902 | 88 | 83 | 28 | 26 | 1 | 51 | 98 |
| Wash. | - | 4 | - | 3,373 | 4,258 | 6 | 10 | 10 | - | - | 5 | 2 |
| Oreg. | - | - | 1 | 2,433 | 2,799 | 7 | 6 | 2 | - | - | 1 | 4 |
| Calif. | 15 | 48 | 2 | 39,817 | 41,676 | 71 | 66 | 15 | 26 | 1 | 32 | 92 |
| Alaska | - | - | - | 1,123 | 1,277 | 4 | - | 1 | - | - | - | - |
| Hawaii | 4 | 2 | - | 943 | 892 | - | 1 | - | - | - | 13 | - |
| Guam | U | - | - | 33 | 49 | U | U | U | U | U | - | - |
| P.R. | - | - | - | 1,111 | 1,071 | 5 | 19 | - | 8 | - | - | 1 |
| V.I. | U | - | - | 92 | 87 | U | U | U | U | U | - | - |
| Pac. Trust Terr. | U | - | - | - | 165 | U | U | U | U | U | - | - |

N: Not notifiable U: Unavailable

## TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending May 14, 1983 and May 15, 1982 (19th week)

| Reporting Area | Measles (Rubeola) | | | | | Menin-gococcal Infections | Mumps | | | Pertussis | | | Rubella | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Indigenous | | Imported* | | Total | | | | | | | | | | |
| | 1983 | Cum. 1983 | 1983 | Cum. 1983 | Cum. 1982 | Cum. 1983 | 1983 | Cum. 1983 | Cum. 1982 | 1983 | Cum. 1983 | Cum. 1982 | 1983 | Cum. 1983 | Cum. 1982 |
| UNITED STATES | 6 | 598 | 14 | 129 | 550 | 1,248 | 86 | 1,595 | 2,819 | 45 | 620 | 392 | 30 | 442 | 1,153 |
| NEW ENGLAND | - | 2 | - | 2 | 8 | 61 | 3 | 67 | 129 | - | 18 | 24 | - | 6 | 9 |
| Maine | - | - | - | - | - | 6 | - | 12 | 29 | - | - | - | - | - | - |
| N.H. | - | - | - | - | 1 | 2 | - | 13 | 13 | - | 2 | 4 | - | 2 | 8 |
| Vt. | - | - | - | - | 2 | 3 | - | 7 | 4 | - | 2 | 1 | - | 2 | - |
| Mass. | - | 2 | - | - | 2 | 21 | 1 | 16 | 62 | - | 12 | 9 | - | 2 | - |
| R.I. | - | - | - | - | - | 3 | 2 | 9 | 10 | - | 2 | 8 | - | - | 1 |
| Conn. | - | - | - | 2 | 3 | 26 | - | 10 | 11 | - | - | 2 | - | - | - |
| MID ATLANTIC | - | 8 | - | 14 | 39 | 184 | 6 | 116 | 202 | 19 | 197 | 68 | 2 | 26 | 66 |
| Upstate N.Y. | - | - | - | 2 | 23 | 71 | 1 | 48 | 39 | 9 | 57 | 43 | 2 | 17 | 33 |
| N.Y. City | - | 8 | - | 8 | 14 | 30 | 1 | 8 | 31 | 9 | 24 | 13 | - | 2 | 21 |
| N.J. | - | - | - | 1 | - | 26 | 4 | 22 | 30 | 1 | 11 | 5 | - | 2 | 12 |
| Pa. | U | - | U | 3 | 2 | 57 | U | 38 | 102 | U | 105 | 7 | U | 5 | - |
| E.N. CENTRAL | 5 | 356 | - | 51 | 31 | 211 | 48 | 792 | 1,632 | 11 | 139 | 125 | 9 | 70 | 106 |
| Ohio | - | 5 | - | 13 | - | 77 | 6 | 377 | 1,193 | 1 | 45 | 22 | - | 1 | - |
| Ind. | - | 270 | - | - | 1 | 23 | 1 | 18 | 25 | 4 | 13 | 11 | 1 | 13 | 18 |
| Ill. | 5 | 81 | - | 33 | 15 | 50 | 9 | 84 | 113 | 3 | 66 | 62 | 7 | 32 | 30 |
| Mich. | - | - | - | 5 | 15 | 44 | 32 | 268 | 230 | 3 | 9 | 7 | 1 | 12 | 38 |
| Wis. | - | - | - | - | - | 17 | - | 45 | 71 | - | 6 | 23 | - | 12 | 20 |
| W.N. CENTRAL | - | - | - | - | 2 | 73 | 1 | 112 | 229 | 2 | 43 | 18 | 1 | 29 | 24 |
| Minn. | - | - | - | - | - | 12 | - | 17 | 136 | - | 17 | 7 | - | 5 | 2 |
| Iowa | - | - | - | - | - | 8 | - | 33 | 24 | - | 4 | 1 | - | - | - |
| Mo. | - | - | - | - | 2 | 37 | - | 15 | 7 | - | 5 | 5 | - | - | 16 |
| N. Dak. | - | - | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - |
| S. Dak. | - | - | - | - | - | 2 | - | - | 1 | - | 2 | 2 | - | - | 1 |
| Nebr. | - | - | - | - | - | 1 | - | 2 | - | - | - | 1 | - | - | - |
| Kans. | - | - | - | - | - | 12 | 1 | 45 | 61 | 2 | 14 | 2 | 1 | 24 | 5 |
| S. ATLANTIC | - | 130 | - | 16 | 31 | 277 | 7 | 100 | 170 | 5 | 75 | 40 | 7 | 55 | 35 |
| Del. | - | - | - | - | - | - | - | 5 | 3 | - | - | 3 | - | - | 1 |
| Md. | - | - | - | 2 | 2 | 27 | - | 15 | 13 | - | 8 | - | - | 1 | 14 |
| D.C. | - | - | - | - | 1 | 4 | - | - | - | - | - | 1 | - | - | - |
| Va. | - | 1 | - | 11 | 14 | 39 | - | 20 | 27 | 3 | 28 | 7 | - | 1 | 8 |
| W. Va. | - | - | - | - | 1 | 2 | 3 | 19 | 71 | - | 2 | 3 | - | - | 1 |
| N.C. | - | - | - | - | - | 56 | - | 4 | 7 | - | 5 | 6 | - | 6 | - |
| S.C. | - | - | - | 3 | - | 35 | 1 | 6 | 9 | - | 5 | 4 | - | - | 1 |
| Ga. | - | 6 | - | - | - | 46 | 3 | 31 | 8 | 2 | 20 | 9 | 2 | 8 | 3 |
| Fla. | - | 123 | - | - | 13 | 68 | - | - | 32 | - | 7 | 7 | 5 | 39 | 7 |
| E.S. CENTRAL | - | - | - | 1 | 5 | 78 | 2 | 28 | 26 | - | 5 | 9 | 1 | 6 | 34 |
| Ky. | - | - | - | 1 | 1 | 15 | 2 | 13 | 9 | - | 2 | 1 | - | 5 | 19 |
| Tenn. | - | - | - | - | 4 | 29 | - | 12 | 10 | - | 2 | 4 | - | - | - |
| Ala. | - | - | - | - | - | 22 | - | - | 4 | - | - | - | 1 | 1 | - |
| Miss. | - | - | - | - | - | 12 | - | 3 | 3 | - | 1 | 4 | - | - | 15 |
| W.S. CENTRAL | - | 33 | 12 | 24 | 6 | 146 | 8 | 119 | 109 | 6 | 59 | 22 | 1 | 69 | 52 |
| Ark. | - | - | - | 1 | - | 12 | - | 2 | 6 | 1 | 3 | 1 | - | - | - |
| La. | - | - | 12† | 2 | - | 27 | - | - | 3 | - | 2 | - | - | 9 | - |
| Okla. | - | - | - | - | - | 17 | - | - | - | 4 | 27 | 2 | - | - | 2 |
| Tex. | - | 33 | - | 1 | 6 | 90 | 8 | 117 | 100 | 1 | 27 | 19 | 1 | 60 | 50 |
| MOUNTAIN | - | - | - | 2 | - | 48 | 2 | 73 | 44 | - | 64 | 23 | 2 | 16 | 33 |
| Mont. | - | - | - | - | - | 3 | - | 2 | 3 | - | 1 | - | - | 3 | 3 |
| Idaho | - | - | - | - | - | 4 | - | 4 | 2 | - | 2 | 1 | 1 | 5 | - |
| Wyo. | U | - | U | - | - | 1 | U | - | 2 | U | 4 | 1 | U | 1 | 5 |
| Colo. | - | - | - | 2 | - | 22 | - | 9 | 10 | - | 40 | 7 | - | - | 3 |
| N. Mex. | - | - | - | - | - | 5 | - | - | - | - | 5 | 3 | - | - | 3 |
| Ariz. | - | - | - | - | - | 8 | 2 | 50 | 14 | - | 9 | 10 | - | 4 | 7 |
| Utah | - | - | - | - | - | 5 | - | 6 | 11 | - | 3 | 1 | 1 | 2 | 10 |
| Nev. | - | - | - | - | - | - | - | 2 | 2 | - | - | - | - | 1 | 2 |
| PACIFIC | 1 | 69 | 2§ | 19 | 428 | 170 | 9 | 188 | 278 | 2 | 20 | 63 | 7 | 165 | 794 |
| Wash. | - | 1 | 1§ | 2 | 18 | 24 | 1 | 27 | 43 | - | 1 | 11 | - | 6 | 22 |
| Oreg. | - | 5 | - | - | - | 28 | - | - | - | 2 | 5 | 7 | - | 9 | 3 |
| Calif. | 1 | 62 | 1† | 17 | 408 | 114 | 8 | 141 | 225 | - | 14 | 45 | 7 | 150 | 762 |
| Alaska | - | - | - | - | - | - | - | 9 | 6 | - | - | - | - | - | 1 |
| Hawaii | - | 1 | - | - | 2 | 4 | - | 11 | 4 | - | - | - | - | - | 6 |
| Guam | U | - | U | - | 5 | 1 | U | - | 1 | U | - | - | U | - | 1 |
| P.R. | - | 56 | - | - | 62 | 7 | 2 | 72 | 26 | 2 | 5 | 12 | - | 2 | 4 |
| V.I. | U | - | U | 5 | - | - | U | - | - | U | - | - | U | 1 | - |
| Pac. Trust Terr. | U | - | U | - | - | - | U | - | 1 | U | - | - | U | - | - |

*For measles only, imported cases includes both out-of-state and international importations. U: Unavailable †International §Out-of-state

## TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending May 14, 1983 and May 15, 1982 (19th week)

| Reporting Area | Syphilis (Civilian) (Primary & Secondary) | | Toxic-shock Syndrome | Tuberculosis | | Tula-remia | Typhoid Fever | Typhus Fever (Tick-borne) (RMSF) | Rabies, Animal |
|---|---|---|---|---|---|---|---|---|---|
| | Cum. 1983 | Cum. 1982 | 1983 | 1983 | Cum. 1983 | Cum. 1983 | Cum. 1983 | Cum. 1983 | Cum. 1983 |
| UNITED STATES | 11,675 | 12,069 | 2 | 377 | 7,992 | 63 | 132 | 69 | 2,357 |
| NEW ENGLAND | 282 | 222 | - | 14 | 209 | - | 5 | 1 | 3 |
| Maine | 12 | 1 | - | - | 13 | - | - | - | 2 |
| N.H. | 7 | 1 | - | - | 16 | - | - | - | 1 |
| Vt. | 2 | - | - | - | 2 | - | - | - | - |
| Mass. | 178 | 156 | - | 12 | 111 | - | 5 | 1 | - |
| R.I. | 6 | 12 | - | - | 16 | - | - | - | - |
| Conn. | 77 | 52 | - | 2 | 51 | - | - | - | - |
| MID ATLANTIC | 1,452 | 1,638 | - | 66 | 1,457 | - | 27 | - | 62 |
| Upstate N.Y. | 73 | 187 | - | 27 | 248 | - | 4 | - | 30 |
| N.Y. City | 881 | 982 | - | 31 | 598 | - | 13 | - | - |
| N.J. | 302 | 197 | - | 8 | 316 | - | 9 | - | - |
| Pa. | 196 | 272 | U | U | 295 | - | 1 | - | 32 |
| E.N. CENTRAL | 506 | 769 | - | 43 | 1,054 | - | 20 | 2 | 182 |
| Ohio | 170 | 115 | - | 4 | 160 | - | 5 | - | 23 |
| Ind. | 62 | 81 | - | - | 91 | - | 1 | - | 11 |
| Ill. | 150 | 409 | - | 24 | 468 | - | 8 | - | 99 |
| Mich. | 94 | 124 | - | 13 | 284 | - | 6 | 2 | - |
| Wis. | 30 | 40 | - | 2 | 51 | - | - | - | 49 |
| W.N. CENTRAL | 138 | 232 | - | 20 | 276 | 21 | 6 | 4 | 350 |
| Minn. | 57 | 41 | - | 3 | 48 | - | - | - | 73 |
| Iowa | 4 | 11 | - | - | 27 | - | - | - | 94 |
| Mo. | 52 | 142 | - | 13 | 152 | 15 | 1 | 3 | 41 |
| N. Dak. | 1 | 4 | - | - | - | - | - | 1 | 23 |
| S. Dak. | 3 | - | - | - | 19 | - | - | - | 58 |
| Nebr. | 7 | 8 | - | 1 | 8 | 2 | - | - | 28 |
| Kans. | 14 | 26 | - | 3 | 22 | 4 | 5 | - | 33 |
| S. ATLANTIC | 3,056 | 3,305 | 1 | 78 | 1,559 | 12 | 19 | 24 | 832 |
| Del. | 15 | 7 | - | - | 10 | - | - | - | 1 |
| Md. | 189 | 193 | - | - | 114 | 5 | 5 | 2 | 347 |
| D.C. | 129 | 207 | - | 2 | 65 | - | - | - | 1 |
| Va. | 218 | 241 | - | 11 | 146 | 1 | 4 | 6 | 309 |
| W. Va. | 11 | 8 | 1 | 2 | 60 | - | 2 | 1 | 62 |
| N.C. | 278 | 240 | - | - | 183 | 5 | 1 | 9 | 6 |
| S.C. | 199 | 150 | - | 9 | 146 | - | 1 | 4 | 7 |
| Ga. | 568 | 689 | - | 25 | 340 | 1 | - | 1 | 85 |
| Fla. | 1,449 | 1,570 | - | 29 | 495 | - | 6 | 1 | 14 |
| E.S. CENTRAL | 803 | 858 | - | 48 | 775 | 7 | 2 | 4 | 197 |
| Ky. | 44 | 41 | - | 13 | 209 | - | - | 1 | 41 |
| Tenn. | 220 | 237 | - | 12 | 226 | 5 | 1 | 1 | 133 |
| Ala. | 338 | 302 | - | 18 | 195 | - | - | 2 | 23 |
| Miss. | 201 | 278 | - | 5 | 145 | 2 | 1 | - | - |
| W.S. CENTRAL | 3,108 | 2,991 | - | 31 | 897 | 19 | 8 | 31 | 512 |
| Ark. | 85 | 79 | - | 15 | 90 | 12 | - | 3 | 93 |
| La. | 669 | 634 | - | 8 | 145 | 2 | 1 | - | 14 |
| Okla. | 97 | 64 | - | 8 | 111 | 5 | - | 15 | 51 |
| Tex. | 2,257 | 2,214 | - | - | 551 | - | 7 | 13 | 354 |
| MOUNTAIN | 273 | 302 | - | 11 | 218 | 1 | 7 | 2 | 82 |
| Mont. | 4 | 1 | - | - | 22 | - | 1 | 1 | 63 |
| Idaho | 3 | 17 | - | - | 13 | - | - | 1 | - |
| Wyo. | 4 | 9 | U | U | 4 | - | - | - | 1 |
| Colo. | 65 | 90 | - | - | 15 | - | 1 | - | - |
| N. Mex. | 90 | 60 | - | 2 | 42 | 1 | - | - | 2 |
| Ariz. | 66 | 67 | - | 9 | 95 | - | 3 | - | 16 |
| Utah | 9 | 10 | - | - | 18 | - | 1 | - | - |
| Nev. | 32 | 48 | - | - | 9 | - | 1 | - | - |
| PACIFIC | 2,057 | 1,752 | 1 | 66 | 1,547 | 3 | 38 | 1 | 137 |
| Wash. | 60 | 57 | - | 6 | 83 | 2 | 2 | - | - |
| Oreg. | 37 | 48 | - | 2 | 70 | - | - | - | - |
| Calif. | 1,925 | 1,595 | 1 | 53 | 1,278 | 1 | 35 | 1 | 130 |
| Alaska | 8 | 6 | - | - | 13 | - | - | - | 7 |
| Hawaii | 27 | 46 | - | 5 | 103 | - | 1 | - | - |
| Guam | - | 1 | U | U | 1 | - | - | - | - |
| P.R. | 311 | 221 | - | 3 | 315 | - | - | - | 20 |
| V.I. | 8 | 1 | U | U | 1 | - | - | - | - |
| Pac. Trust Terr. | - | - | U | U | - | - | - | - | - |

U: Unavailable

## TABLE IV. Deaths in 121 U.S. cities,* week ending May 14, 1983 (19th week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I** Total |
|---|---|---|---|---|---|---|---|
| | All Ages | ≥65 | 45-64 | 25-44 | 1-24 | <1 | |
| NEW ENGLAND | 640 | 426 | 138 | 36 | 18 | 22 | 49 |
| Boston, Mass. | 191 | 115 | 48 | 11 | 7 | 10 | 21 |
| Bridgeport, Conn. | 40 | 25 | 9 | 3 | 2 | 1 | 3 |
| Cambridge, Mass. | 22 | 15 | 7 | - | - | - | 2 |
| Fall River, Mass. | 37 | 30 | 3 | 3 | 1 | - | - |
| Hartford, Conn. | 60 | 33 | 18 | 3 | 1 | 5 | 3 |
| Lowell, Mass. | 27 | 18 | 7 | 2 | - | - | 1 |
| Lynn, Mass. | 18 | 14 | 4 | - | - | - | - |
| New Bedford, Mass. | 25 | 15 | 5 | 3 | - | 2 | 2 |
| New Haven, Conn. | 41 | 27 | 9 | 2 | 1 | 2 | 1 |
| Providence, R.I. | 52 | 39 | 8 | 4 | 1 | - | 6 |
| Somerville, Mass. | 6 | 5 | 1 | - | - | - | 1 |
| Springfield, Mass. | 33 | 24 | 5 | 2 | 1 | 1 | 3 |
| Waterbury, Conn. | 32 | 25 | 3 | 2 | 2 | - | 2 |
| Worcester, Mass. | 56 | 41 | 11 | 1 | 2 | 1 | 4 |
| MID. ATLANTIC | 2,620 | 1,663 | 622 | 204 | 50 | 81 | 102 |
| Albany, N.Y. | 43 | 31 | 9 | - | 1 | 2 | 1 |
| Allentown, Pa. | 16 | 12 | 4 | - | - | - | - |
| Buffalo, N.Y. | 122 | 73 | 38 | 8 | - | 3 | 10 |
| Camden, N.J. | 29 | 22 | 4 | 3 | - | - | 1 |
| Elizabeth, N.J. | 28 | 17 | 11 | - | - | - | 1 |
| Erie, Pa.† | 36 | 28 | 7 | 1 | - | - | 1 |
| Jersey City, N.J. | 60 | 40 | 12 | 4 | - | 4 | 1 |
| N.Y. City, N.Y. | 1,377 | 870 | 324 | 132 | 28 | 23 | 42 |
| Newark, N.J. | 70 | 26 | 26 | 12 | 5 | 1 | 9 |
| Paterson, N.J. | 19 | 16 | 2 | - | 1 | - | - |
| Philadelphia, Pa.† | 394 | 215 | 101 | 30 | 7 | 41 | 18 |
| Pittsburgh, Pa.† | 65 | 45 | 17 | 1 | 1 | 1 | 2 |
| Reading, Pa. | 33 | 26 | 5 | - | 2 | - | 1 |
| Rochester, N.Y. | 96 | 74 | 17 | 3 | 2 | - | 9 |
| Schenectady, N.Y. | 21 | 14 | 7 | - | - | - | 1 |
| Scranton, Pa.† | 32 | 27 | 5 | - | - | - | 1 |
| Syracuse, N.Y. | 98 | 61 | 22 | 6 | 3 | 6 | 2 |
| Trenton, N.J. | 31 | 25 | 5 | 1 | - | - | - |
| Utica, N.Y. | 21 | 18 | 2 | 1 | - | - | 1 |
| Yonkers, N.Y. | 29 | 23 | 4 | 2 | - | - | 1 |
| E.N. CENTRAL | 2,297 | 1,505 | 516 | 138 | 59 | 79 | 80 |
| Akron, Ohio | 49 | 30 | 14 | - | 2 | 3 | - |
| Canton, Ohio | 51 | 41 | 5 | 4 | - | 1 | 3 |
| Chicago, Ill | 579 | 368 | 134 | 53 | 11 | 13 | 15 |
| Cincinnati, Ohio | 156 | 100 | 41 | 6 | 1 | 8 | 12 |
| Cleveland, Ohio | 184 | 107 | 44 | 8 | 7 | 18 | 5 |
| Columbus, Ohio | 138 | 81 | 35 | 10 | 7 | 5 | 1 |
| Dayton, Ohio | 91 | 63 | 21 | 2 | 2 | 3 | 4 |
| Detroit, Mich. | 254 | 168 | 53 | 20 | 7 | 6 | 9 |
| Evansville, Ind. | 40 | 28 | 8 | 3 | - | 1 | 1 |
| Fort Wayne, Ind. | 54 | 34 | 11 | 1 | 5 | 3 | 3 |
| Gary, Ind. | 14 | 9 | 3 | 1 | 1 | - | - |
| Grand Rapids, Mich. | 63 | 48 | 10 | 2 | - | 3 | 2 |
| Indianapolis, Ind. | 177 | 105 | 49 | 8 | 8 | 7 | 5 |
| Madison, Wis. | 31 | 21 | 7 | 1 | - | 2 | 3 |
| Milwaukee, Wis. | 109 | 82 | 21 | 4 | 1 | 1 | 10 |
| Peoria, Ill. | 13 | 9 | 3 | - | - | 1 | - |
| Rockford, Ill. | 46 | 28 | 11 | 3 | 1 | 3 | 2 |
| South Bend, Ind. | 59 | 48 | 7 | 2 | 2 | - | 3 |
| Toledo, Ohio | 128 | 89 | 28 | 8 | 3 | - | 2 |
| Youngstown, Ohio | 61 | 46 | 11 | 2 | 1 | 1 | - |
| W.N. CENTRAL | 751 | 494 | 167 | 34 | 16 | 39 | 35 |
| Des Moines, Iowa | 54 | 40 | 11 | - | 2 | 1 | 4 |
| Duluth, Minn. | 20 | 13 | 6 | - | - | 1 | 1 |
| Kansas City, Kans. | 32 | 18 | 7 | 3 | 2 | 1 | 5 |
| Kansas City, Mo. | 111 | 76 | 25 | 5 | 2 | 3 | 2 |
| Lincoln, Nebr. | 32 | 27 | 5 | - | - | - | 4 |
| Minneapolis, Minn. | 101 | 67 | 22 | 3 | 2 | 7 | 2 |
| Omaha, Nebr. | 80 | 46 | 16 | 7 | 2 | 9 | 3 |
| St. Louis, Mo. | 165 | 107 | 37 | 8 | 3 | 10 | 8 |
| St. Paul, Minn. | 79 | 59 | 15 | 2 | 1 | 2 | 1 |
| Wichita, Kans. | 77 | 41 | 23 | 6 | 2 | 5 | 5 |
| S. ATLANTIC | 1,188 | 728 | 274 | 96 | 39 | 51 | 51 |
| Atlanta, Ga. | 149 | 93 | 38 | 12 | 2 | 4 | 4 |
| Baltimore, Md. | 226 | 147 | 48 | 17 | 10 | 4 | 6 |
| Charlotte, N.C. | 61 | 38 | 18 | 3 | 1 | 1 | 6 |
| Jacksonville, Fla. | 112 | 60 | 28 | 15 | 6 | 3 | 6 |
| Miami, Fla. | 132 | 72 | 26 | 21 | 8 | 5 | 1 |
| Norfolk, Va. | 63 | 42 | 15 | 4 | 1 | 1 | 3 |
| Richmond, Va. | 60 | 40 | 14 | 3 | 1 | 2 | 4 |
| Savannah, Ga. | 55 | 31 | 14 | 1 | - | 9 | 6 |
| St. Petersburg, Fla. | 80 | 63 | 9 | 5 | - | 3 | 5 |
| Tampa, Fla. | 81 | 48 | 19 | 2 | 4 | 8 | 3 |
| Washington, D.C. | 121 | 62 | 38 | 9 | 5 | 7 | 3 |
| Wilmington, Del. | 48 | 32 | 7 | 4 | 1 | 4 | 4 |
| E.S. CENTRAL | 700 | 437 | 170 | 46 | 27 | 20 | 42 |
| Birmingham, Ala. | 108 | 66 | 28 | 8 | 3 | 3 | 1 |
| Chattanooga, Tenn. | 48 | 31 | 11 | 4 | 2 | - | 5 |
| Knoxville, Tenn. | 35 | 23 | 8 | 1 | 1 | 2 | - |
| Louisville, Ky. | 126 | 80 | 32 | 8 | 3 | 3 | 19 |
| Memphis, Tenn. | 140 | 90 | 32 | 7 | 5 | 6 | 2 |
| Mobile, Ala. | 69 | 44 | 13 | 7 | 4 | 1 | 2 |
| Montgomery, Ala. | 62 | 31 | 20 | 3 | 5 | 3 | 7 |
| Nashville, Tenn. | 112 | 72 | 26 | 8 | 4 | 2 | 6 |
| W.S. CENTRAL | 1,342 | 763 | 333 | 126 | 73 | 47 | 45 |
| Austin, Tex. | 73 | 49 | 9 | 9 | 5 | 1 | - |
| Baton Rouge, La. | 24 | 13 | 8 | 1 | 1 | 1 | - |
| Corpus Christi, Tex. | 40 | 25 | 13 | 1 | 1 | - | - |
| Dallas, Tex. | 181 | 92 | 48 | 20 | 12 | 9 | 3 |
| El Paso, Tex. | 65 | 37 | 17 | 2 | 3 | 6 | 3 |
| Fort Worth, Tex. | 93 | 61 | 18 | 7 | 5 | 2 | 6 |
| Houston, Tex. | 341 | 172 | 84 | 49 | 21 | 15 | 5 |
| Little Rock, Ark. | 74 | 47 | 18 | 3 | 3 | 3 | 6 |
| New Orleans, La. | 170 | 91 | 44 | 16 | 11 | 8 | 4 |
| San Antonio, Tex. | 171 | 99 | 51 | 10 | 9 | 2 | 12 |
| Shreveport, La. | 31 | 23 | 6 | 1 | 1 | - | - |
| Tulsa, Okla. | 79 | 54 | 17 | 7 | 1 | - | 6 |
| MOUNTAIN | 656 | 417 | 146 | 40 | 23 | 30 | 37 |
| Albuquerque, N.Mex. | 83 | 56 | 16 | 6 | 3 | 2 | 4 |
| Colo. Springs, Colo. | 36 | 28 | 6 | - | 1 | 1 | 7 |
| Denver, Colo. | 101 | 63 | 20 | 9 | 3 | 6 | 5 |
| Las Vegas, Nev. | 79 | 40 | 24 | 7 | 5 | 3 | 7 |
| Ogden, Utah | 27 | 16 | 7 | 2 | - | 2 | 1 |
| Phoenix, Ariz. | 147 | 90 | 33 | 9 | 7 | 8 | 3 |
| Pueblo, Colo. | 24 | 14 | 6 | 4 | - | - | 1 |
| Salt Lake City, Utah | 53 | 31 | 11 | 2 | 1 | 8 | 1 |
| Tucson, Ariz. | 106 | 79 | 23 | 1 | 3 | - | 8 |
| PACIFIC | 1,846 | 1,234 | 398 | 110 | 51 | 52 | 119 |
| Berkeley, Calif. | 18 | 13 | 2 | 2 | - | 1 | - |
| Fresno, Calif. | 69 | 41 | 16 | 5 | 4 | 2 | 6 |
| Glendale, Calif. | 21 | 18 | 2 | - | 1 | - | - |
| Honolulu, Hawaii | 82 | 49 | 23 | 3 | 3 | 4 | 7 |
| Long Beach, Calif. | 90 | 53 | 31 | 2 | 2 | 2 | 6 |
| Los Angeles, Calif. | 569 | 382 | 116 | 44 | 17 | 10 | 26 |
| Oakland, Calif. | 87 | 53 | 27 | 3 | - | 4 | 5 |
| Pasadena, Calif. | 32 | 21 | 10 | 1 | - | - | 5 |
| Portland, Oreg. | 117 | 81 | 23 | 8 | - | 5 | 6 |
| Sacramento, Calif. | 66 | 48 | 11 | 2 | 3 | 2 | 6 |
| San Diego, Calif. | 135 | 91 | 27 | 8 | 5 | 4 | 17 |
| San Francisco, Calif. | 143 | 103 | 24 | 7 | 4 | 5 | 6 |
| San Jose, Calif. | 154 | 105 | 31 | 7 | 6 | 5 | 11 |
| Seattle, Wash. | 123 | 90 | 22 | 7 | 2 | 2 | 5 |
| Spokane, Wash. | 67 | 38 | 16 | 8 | 2 | 3 | 7 |
| Tacoma, Wash. | 73 | 48 | 17 | 3 | 2 | 3 | 6 |
| TOTAL | 12,040†† | 7,667 | 2,764 | 830 | 356 | 421 | 560 |

* 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 4 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.

*Shigella dysenteriae — Continued*

Because the infectious dose of *Shigella* is relatively small, it is more likely to spread person-to-person than are other enteric pathogens such as *Salmonella* and *Vibrio cholerae* 01. Although 6% of the active duty hospital staff members became ill, there was no evidence of secondary spread from staff to patients. The opportunity for spread from staff to patients was undoubtedly decreased, since most ill staff members did not work after onset of symptoms.

## Illness Associated with Elevated Levels of Zinc in Fruit Punch — New Mexico

On November 19, 1982, a group of students in a Grant County, New Mexico, junior high school became ill, with symptoms of headache, chills, dizziness, nausea, and vomiting. An investigation by the New Mexico Health and Environment Department (NMHED) showed that illness was confined to students who attended the 9:30 and 11:15 a.m. home economics classes on November 19, where fruit punch and cookies prepared the previous evening were served.

Thirty-one (25 females and six males) of the 47 students attending those classes were interviewed. Eighteen (58%) reported at least one symptom, including nausea (83%), abdominal cramps (61%), metallic taste (33%), headache (33%), dizziness (22%), vomiting (11%), and chills (11%).

Eighteen (69%) of 26 students who drank punch reported illness, but none of the five who did not drink punch reported illness ($p = 0.007$). The percentage of illness was higher among those who drank 4 or more ounces of punch (89%) than those who drank less than 4 ounces (40%) ($p = 0.046$). Illness was not associated with eating cookies.

Onset of illness ranged from 5 minutes to 2 hours after the punch—a mixture of two brands of commercial fruit punch, lemonade, and ginger ale—was consumed. The mixture was stored overnight in three 5-gallon water containers that had galvanized metal linings, with large areas of corrosion. The punch was transferred to plastic pitchers immediately before it was served.

The NMHED Scientific Laboratory Division analyzed samples of implicated punch for heavy metals. The analyses showed elevated levels of zinc and slightly elevated levels of iron (Table 1). No other metals, including cadmium, showed elevated levels. Because of its low pH, the punch was not examined for microorganisms.

*Reported by S Lapham, MD, R Vanderly, R Brackbill, PhD, M Tikkanen, New Mexico Health and Environment Dept; Special Studies Br, Div of Chronic Diseases, Center for Environmental Health, CDC.*

**Editorial Note:** Zinc is a major constituent of galvanized metal. On contact with acidic foods and beverages, it is converted to zinc salts, which are readily absorbed by the body.

Outbreaks of illness mainfested by fever, nausea, vomiting, abdominal cramps, and diarrhea have been reported after consumption of foods or beverages prepared or stored in galva-

**TABLE 1. Concentration of heavy metals in two samples of fruit punch — Grant County, New Mexico, 1982**

| | Heavy metal concentration* (ppm) | | |
|---|---|---|---|
| **Punch sample** | **pH** | **Zinc** | **Iron** |
| From container | 3.8 | 443 | 13.2 |
| From student's glass | 3.4 | 241 | 40.1 |

*Analysis by inductively coupled atomic emission spectroscopy.

*Zinc Illness — Continued*

nized containers (*1-3*). Onset of symptoms has ranged from a few minutes to 24 hours, with the shorter periods associated with ingestion of liquids (*3*). In previously reported outbreaks, zinc levels found in contaminated foods or beverages have exceeded 1,000 parts per million. The emetic dose of zinc is 225-450 mg for adults (*4*), but may be lower for teenagers with lower body weights. Although only two students in this episode vomited, 83% complained of nausea.

The Food and Drug Administration considers galvanized metal an unacceptable surface material for equipment and utensils used with food and beverages (other than water) (*5*).

*References*

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2. Dornickx CG. Zinc as cause of food poisoning (abstract). JAMA 1938;111:1887.
3. Brown MA, Thom JV, Orth GL, Cova P, Juarez J. Food poisoning involving zinc contamination. Arch Environ Health 1964;8:657-60.
4. Sollman TH. Manual of pharmacology, 8th ed. Philadelphia: Saunders, 1957;1303-4.
5. Food and Drug Administration. Consumer memo: cooking utensils . . . some facts about their safety. Rockville, Maryland: Food and Drug Administration (HHS publication no. [FDA] 80-2123). Reissued November 1979.

## Adenovirus Type 7 Outbreak in a Pediatric Chronic-Care Facility — Pennsylvania, 1982

In July 1982, an outbreak of respiratory disease caused by adenovirus type 7 (Ad 7) occurred in a chronic-care facility in a pediatric hospital in Pennsylvania. On June 6, a physician, the presumed index case, developed injected conjunctiva; 2 days later, conjunctivitis; and on June 12, an acute upper respiratory-tract illness ([URI] coryza and/or pharyngitis). Between June 15 and July 9, four of the 14 children in the facility became ill with an acute respiratory illness characterized by either URI or lower respiratory-tract illness ([LRI] fever and respiratory distress). These four, and three other asymptomatic children, were culture-positive for Ad 7 (Table 2). Three of the four ill children had LRI and required mechanical ventilation; one with congenital heart disease and one with bronchopulmonary dysplasia died. In addition, three of the other 35 staff members (physicians, nurses, and play therapists) developed acute URI, and Ad 7 was isolated from cultures from two of them.

The chronic-care facility has a nurses' station, treatment room, playroom, and three patient rooms—with four, six, and seven beds, respectively. All 14 children remained in the facility throughout the outbreak. Culture-positive children resided in two of the three rooms.

The index case had contact with all 14 children on June 6-7 and from June 14 on. Both culture-positive staff members had contact with the first ill child as early as June 15. Ultimately, one of these staff members had contact with all seven culture-positive and three of seven culture-negative children. The other had contact with three culture-positive children and one culture-negative child. When these staff members became ill, they were excluded from patient contact. When the extent of the outbreak was recognized on June 22, children culture-positive for Ad 7 were moved into one room, and staff members with acute respiratory illness were excluded from contact with the children.

*Reported by MA Fee, MD, E Charney, MD, SA Plotkin, MD, HM Friedman, MD, P Pershing, A O'Hara, C Forrer, Children's Hospital of Philadelphia; Hospital Infections Program, Div of Viral Diseases, Center for Infectious Diseases, CDC.*

**Editorial Note:** This outbreak serves as a reminder of the risks of Ad 7 nosocomial infections. Of all the adenovirus types, types 7, 3, and 21 are most likely to cause serious respiratory disease, particularly in young children (*1-3*). Adenovirus outbreaks among infants and children have been reported from a variety of closed communities, including hospitals

*Adenovirus — Continued*

and children's homes (*4-6*). Significant mortality and long-term morbidity are sometimes associated with these infections, especially among infants and immunocompromised children (*1-6*). In this report, the fatalities may have been related to underlying cardiac and respiratory disease. Other respiratory viruses can also cause serious nosocomial disease resulting in significant morbidity, prolonged hospitalization, and death (*7*). Respiratory syncytial virus (RSV) is a particularly serious and frequent nosocomial pathogen among infants and young children (*7,8*).

Viral infections are increasingly recognized as important nosocomial problems, and guidelines for their prevention and control are being developed (*7*). Prevention and control of respiratory viruses as nosocomial pathogens are particularly difficult. These viruses are epidemic in the community during the fall, winter, and spring, and illness caused by the serious nosocomial pathogens, e.g. RSV and Ad 7, is often indistinguishable from that caused by less serious nosocomial pathogens, e.g. rhinoviruses. They can infect staff and patients alike, and in some instances, virus can be shed for long periods of time.

Because of the seriousness of some nosocomial viral respiratory infections, some authorities recommend isolation and other infection-control measures for infants and children hospitalized with symptoms of viral respiratory-tract infections (*8*). The "Guidelines for Preven-

**TABLE 2. Characteristics of adenovirus type 7 cases in a chronic-care pediatric unit — Pennsylvania, 1982**

| Case | Onset of symptoms | Positive Ad 7 cultures | Age | Underlying disease | Predominant symptoms |
|---|---|---|---|---|---|
| 1 | June 6 | ND* | Adult (staff) | none | URI,† conjunctivitis |
| 2 | June 15 | June 15 | 9 mo | BPD§ ileostomy tracheostomy | URI, fever, diarrhea, wheezing |
| 3 | June 22 | July 7 | Adult (staff) | none | URI, fever, conjunctivitis |
| 4 | June 22 | ND | Adult (staff) | none | URI |
| 5 | June 22 | June 29 | 11 mo | BPD¶ | URI, LRI†† |
| 6 | June 24 | June 29 | 12 mo | CHD**¶ | LRI vomiting, diarrhea |
| 7 | — | June 29 | 2 yr | cervical cord trauma | asymptomatic |
| 8 | — | June 29 | 3 yr | BPD | asymptomatic |
| 9 | June 30 | July 7 | adult (staff) | none | URI, fever |
| 10 | July 1 | July 1 | 7 mo | Downs syndrome gastrostomy CHD tracheostomy | LRI, vomiting, diarrhea |
| 11 | — | July 9 | 18 mo | BPD | asymptomatic |

*Not done
†Upper respiratory illness
§Bronchopulmonary dysplasia
¶Patient died
**Congenital heart disease
††Lower respiratory illness

*Adenovirus – Continued*

tion of Nosocomial Pneumonia" recommends that personnel with URI not be assigned to the direct care of high-risk patients, such as neonates and young children (*9*).

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**The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.**

**The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report,* Centers for Disease Control, Atlanta, Georgia 30333.**






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