CENTERS FOR DISEASE CONTROL

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MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT



## *Epidemiologic Notes and Reports*

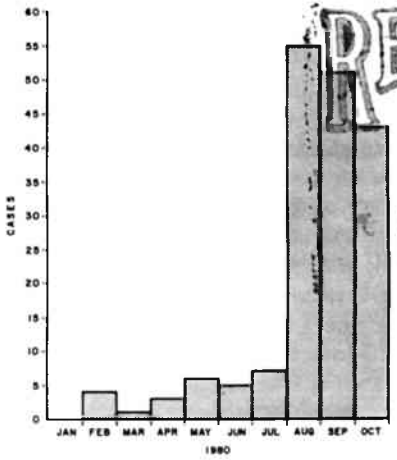
### Penicillinase-Producing *Neisseria gonorrhoeae* — Los Angeles, California

In the period August 1-October 17, 1980, 149 cases of infection due to penicillinase-producing *Neisseria gonorrhoeae* (PPNG) were reported in Los Angeles County, California. This represents a sharp increase compared to the 11 cases reported from March 1976 through December 1979 and to the 26 cases reported during the first 7 months of 1980 (Figure 1). Although cases were reported from 21 of the 27 health districts in the county, the majority of recent cases were in the Long Beach, Compton, South, Southeast, Southwest, and Inglewood health districts (Figure 2). Except for Long Beach, these are districts which historically have had relatively high reported rates of non-PPNG gonococcal infections as compared to the rest of the county. Of the 68 women reported with PPNG infection since August 1, 1980, 18 (26.5%) have had signs or symptoms of acute salpingitis.

Unlike PPNG cases in most other areas of the United States, only 6% of the Los Angeles County cases in 1980 could be traced to infection acquired outside of the United States. Sustained disease transmission has occurred among county residents; as many as 6 persons have been consecutively infected in a single chain of transmission.

Control activities have been concentrated in 3 major areas. First, recommendations

**FIGURE 1. Reported cases of penicillinase-producing *Neisseria gonorrhoeae*, Los Angeles County,* January 1-October 17, 1980**

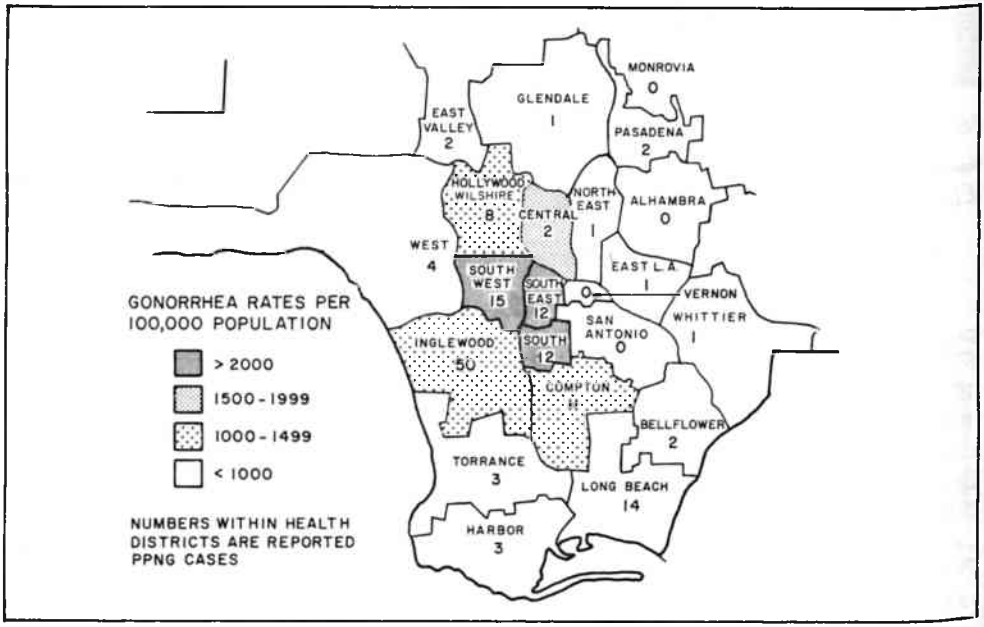





*For comparison purposes, from March 1, 1976-December 31, 1979, the total number of PPNG cases was 11.

*PPNG – Continued*

**FIGURE 2. Gonorrhea rates for 1978 and the number of cases of penicillinase-producing *Neisseria gonorrhoeae* in Los Angeles County Health Districts, August 1-October 17, 1980**




concerning diagnosis, treatment, and reporting of PPNG infections were sent to all health care providers in the county. Second, public laboratories have begun testing all pretreatment and post-treatment gonococcal isolates for B-lactamase production. Excluding testing done on isolates from sexual contacts of known PPNG cases, 1,797 tests have been done since the middle of September 1980. Of these tests, 34 (1.9%) have been positive. In testing done by the Inglewood health district laboratory, 3.7% of pretreatment isolates have been PPNG. Recommendations to begin similar testing programs have been made to all laboratory directors in the county. Third, efforts to interview all persons with PPNG infections and to locate their contacts have been intensified. Since August 1, 1980, 97% of the 149 PPNG-infected persons have been interviewed. The proportion of cases brought to treatment through contact tracing has risen from 20% in August to 43% in September and October.

*Reported by MD Finn, MD, MPH, RL Barnes, PhD, JN Spencer, County of Los Angeles Dept of Health Services; California Dept of Health Services; Bur of State Services, CDC.*

**Editorial Note:** The establishment of an endemic focus of PPNG infections in Los Angeles and recent increases in cases reported from other metropolitan areas, such as Pierce County (Tacoma), Washington, and New York City, emphasize the need for continuing surveillance for these cases. CDC recommends that all positive post-treatment gonorrhea cultures be tested for B-lactamase production. Health departments in areas that are experiencing outbreaks of PPNG infections or in which cases unrelated to importation are occurring should consider expanding B-lactamase testing programs to include all pretreatment gonococcal isolates.

To minimize the spread of PPNG infections, previously published CDC guidelines for spectinomycin use (*1*) are still appropriate for all parts of the United States. However,

*PPNG — Continued*

further increases in the prevalence of PPNG in particular areas may necessitate expanding spectinomycin use to include the initial treatment of all patients with uncomplicated gonococcal infection from these areas. Such a change in treatment practice should be considered when more than 5% of gonococcal isolates in a particular area are penicillin resistant.

**Clarification:** In a previous report (*1*), CDC recommended the following regimen for treatment of PPNG pharyngeal infections: sulfamethoxazole/trimethoprim 9 tablets (400 mg sulfamethoxazole/80 mg trimethoprim per tablet) daily for 5 days; these tablets should be taken as a single daily dose. Sulfamethoxazole/trimethoprim should be avoided by pregnant or nursing women (*2*).

*References*

1. MMWR 1980;29:381-2.
2. Rubin RH, Swartz MN. Trimethoprim-sulfamethoxazole. N Engl J Med 1980;303:426-32.

## Tuberculosis in a Drug Rehabilitation Center — Colorado

In April 1979, a 23-year-old woman was found to have symptomatic, cavitary pulmonary tuberculosis with sputum smears markedly positive for acid-fast bacilli. Before a chest X ray was taken and the diagnosis made, the patient had been seen several times by a physician over a period of months for cough, sputum production, fever, malaise, and weight loss.

The patient lived in a drug rehabilitation center that housed 52 other adults and 13 children. During the day, she took care of 8 children, 7 of whom slept in a single room adjacent to hers. Seven women shared her sleeping quarters. She had few contacts outside the center.

Initial skin testing of the residents identified 18 (35%) adults and 8 (62%) children with a response of greater than 5 mm of induration to 5 tuberculin units of purified protein derivative (PPD). Seven of the children had chest X-ray abnormalities compatible with current tuberculosis. Skin-test conversions were observed in 12 adults at 1 month, 2 adults at 3 months, and none at 6 months. Thus, the overall rate of infection was 62% (40 of 65). Grouping the residents according to intimacy of contact with the source patient showed the following skin-test reactivity rates: (1) women roommates — 7/7 (100%); (2) children under her daily care — 7/8 (88%); (3) other women — 6/8 (75%); (4) men — 19/37 (51%); and (5) other children — 1/5 (20%).

The 7 children with current tuberculosis were treated with isoniazid (INH) and rifampin. All skin-test positive persons plus the skin-test negative child who had been under the patient's daily care were given a 1-year course of INH preventive therapy.

*Reported by BJ Catlin, RN, F Hanson, MD, MD Iseman, MD, JA Sbarbaro, MD, Denver Dept of Health and Hospitals; RS Hopkins, MD, State Epidemiologist, Colorado State Dept of Health; and Tuberculosis Control Div, Bur of State Services, CDC.*

**Editorial Note:** This episode demonstrates several principles in the investigation and control of tuberculosis. First, although transmission of tuberculosis is most often observed among close family contacts, it is also common among close contacts in institutional settings. For example, outbreaks in nursing homes and prisons have recently been reported (*1-4*). Second, repeat skin testing is necessary to identify recently infected persons who had not developed reactivity at the time of the initial investigation. Such reactivity usually becomes apparent 2-10 weeks after infection. Third, contact investiga-

*Tuberculosis – Continued*

tion may be divided into "concentric circles" of exposure. Investigation need not be further extended when the "circle" under investigation exhibits a prevalence of infection no greater than the background rate for the group being evaluated.

All close contacts with a positive tuberculin test and close contacts with a negative skin test who are at high risk of disease should be examined for current tuberculosis. If disease is present, the patient should be treated with 2 or more antituberculosis drugs. If disease is not present, the person should be given INH preventive therapy. More detailed guidelines for the investigation and management of tuberculosis contacts have been published (*5,6*).

*References*

1. Stead WW. Epidemic of tuberculosis among elderly residents of a nursing home. Am Rev Respir Dis 1980;121:462 (abstract).
2. MMWR 1979;27:523-5.
3. Stead WW. Undetected tuberculosis in prison: source of infection for community at large. JAMA 1978;240:2544-7.
4. MMWR 1980;28:465-7.
5. American Thoracic Society. Guidelines for the investigation and management of tuberculosis contacts. Am Rev Respir Dis 1976;114:459-63.
6. American Thoracic Society and Center for Disease Control. Preventive therapy of tuberculosis infection. Am Rev Respir Dis 1974;110:371-4.

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

*[Cumulative totals include revised and delayed reports through previous weeks.]*

| DISEASE | 45th WEEK ENDING | | MEDIAN 1975-1979 | CUMULATIVE, FIRST 45 WEEKS | | |
|---|---|---|---|---|---|---|
| | November 8, 1980 | November 10, 1979 | | November 8, 1980 | November 10, 1979 | MEDIAN 1975-1979 |
| Aseptic meningitis | 169 | 227 | 83 | 6,403 | 7,303 | 4,120 |
| Brucellosis | 1 | – | 4 | 155 | 151 | 195 |
| Chickenpox | 1,360 | 1,274 | 1,470 | 162,246 | 177,421 | 158,299 |
| Diphtheria | – | 1 | 1 | 4 | 59 | 76 |
| Encephalitis: Primary (arthropod-borne & unspec.) | 35 | 28 | 24 | 986 | 952 | 1,048 |
| Post-infectious | 3 | 2 | 2 | 188 | 211 | 211 |
| Hepatitis, Viral: Type B | 403 | 298 | 237 | 15,491 | 12,640 | 12,885 |
| Type A | 581 | 606 | 573 | 24,318 | 25,780 | 26,486 |
| Type unspecified | 263 | 232 | 185 | 10,203 | 8,984 | 7,295 |
| Malaria | 38 | 20 | 10 | 1,670 | 665 | 473 |
| Measles (rubeola) | 25 | 88 | 174 | 13,118 | 12,676 | 25,000 |
| Meningococcal infections: Total | 56 | 41 | 31 | 2,282 | 2,247 | 1,500 |
| Civilian | 56 | 41 | 31 | 2,271 | 2,227 | 1,489 |
| Military | – | – | – | 11 | 20 | 20 |
| Mumps | 81 | 144 | 329 | 7,749 | 12,161 | 18,304 |
| Pertussis | 30 | 25 | 26 | 1,449 | 1,189 | 1,406 |
| Rubella (German measles) | 18 | 60 | 85 | 3,481 | 11,113 | 15,482 |
| Tetanus | 4 | 3 | 2 | 64 | 62 | 65 |
| Tuberculosis | 529 | 475 | 559 | 23,759 | 23,777 | 26,101 |
| Tularemia | – | – | 3 | 187 | 173 | 124 |
| Typhoid fever | 15 | 13 | 8 | 447 | 449 | 366 |
| Typhus fever, tick-borne (Rky. Mt. spotted) | 11 | 9 | 5 | 1,106 | 1,000 | 1,000 |
| Venereal diseases: | | | | | | |
| Gonorrhea: Civilian | 22,659 | 19,553 | 19,202 | 869,217 | 868,348 | 868,348 |
| Military | 663 | 637 | 495 | 23,518 | 24,032 | 24,032 |
| Syphilis, primary & secondary: Civilian | 601 | 541 | 404 | 23,391 | 21,598 | 20,882 |
| Military | 1 | 8 | 5 | 268 | 272 | 272 |
| Rabies in animals | 108 | 91 | 62 | 5,537 | 4,458 | 2,715 |

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

| | CUM. 1980 | | CUM. 1980 |
|---|---|---|---|
| Anthrax | 1 | Poliomyelitis: Total | 8 |
| Botulism | 56 | Paralytic | 6 |
| Cholera | 8 | Psittacosis Ups. N.Y. 1, Fla. 1 | 94 |
| Congenital rubella syndrome | 46 | Rabies in man | – |
| Leprosy: III. 1 | 192 | Trichinosis Ohio 1 | 101 |
| Leptospirosis Fla. 1, Hawaii 1 | 66 | Typhus fever, flea-borne (endemic, murine) | 61 |
| Plague | 18 | | |

All delayed reports and corrections will be included in the following week's cumulative totals.

## TABLE III. Cases of specified notifiable diseases, United States, weeks ending November 8, 1980, and November 10, 1979 (45th week)

| REPORTING AREA | ASEPTIC MENINGITIS | BRUCELLOSIS | CHICKEN-POX | DIPHTHERIA | | ENCEPHALITIS | | | HEPATITIS (VIRAL), BY TYPE | | | MALARIA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Primary | | Post-infectious | B | A | Unspecified | | |
| | 1980 | 1980 | 1980 | 1980 | CUM. 1980 | 1980 | 1979 | 1980 | 1980 | 1980 | 1980 | 1980 | CUM. 1980 |
| UNITED STATES | 169 | 1 | 1,360 | – | 4 | 35 | 28 | 3 | 403 | 581 | 263 | 38 | 1,670 |
| NEW ENGLAND | 5 | – | 176 | – | – | – | – | – | 11 | 13 | 8 | 5 | 99 |
| Maine | – | – | 77 | – | – | – | – | – | – | – | – | – | 14 |
| N.H. | 1 | – | 13 | – | – | – | – | – | – | 2 | 1 | – | 7 |
| Vt. | – | – | 20 | – | – | – | – | – | – | – | – | – | 1 |
| Mass. | 2 | – | 31 | – | – | – | – | – | 7 | 3 | 7 | 4 | 54 |
| R.I. | – | – | 7 | – | – | – | – | – | 2 | 4 | – | – | 9 |
| Conn. | 2 | – | 28 | – | – | – | – | – | 2 | 4 | – | 1 | 14 |
| MID. ATLANTIC | 47 | – | 48 | – | 1 | 7 | 3 | – | 48 | 33 | 18 | 3 | 220 |
| Upstate N.Y. | 8 | – | 41 | – | – | – | 1 | – | 6 | 8 | 4 | 1 | 37 |
| N.Y. City | 8 | – | 7 | – | 1 | 2 | 1 | – | 20 | 9 | 1 | – | 61 |
| N.J. | 3 | – | NN | – | – | – | 1 | – | 22 | 16 | 13 | 2 | 56 |
| Pa. | 28 | – | – | – | – | 5 | – | – | NA | NA | NA | – | 66 |
| E.N. CENTRAL | 21 | – | 625 | – | 1 | 6 | 6 | 1 | 30 | 58 | 18 | 7 | 104 |
| Ohio | 1 | – | 57 | – | – | 6 | 3 | 1 | 5 | 9 | 7 | 2 | 18 |
| Ind. | – | – | 52 | – | – | – | – | – | 5 | 8 | 2 | – | 12 |
| Ill. | 2 | – | 56 | – | – | – | – | – | 6 | 21 | 4 | 3 | 40 |
| Mich. | 12 | – | 291 | – | 1 | – | 3 | – | 13 | 17 | 5 | 1 | 23 |
| Wis. | 6 | – | 169 | – | – | – | – | – | 1 | 3 | – | 1 | 11 |
| W.N. CENTRAL | 4 | – | 283 | – | 1 | – | 1 | 1 | 12 | 25 | 7 | – | 69 |
| Minn. | – | – | – | – | – | – | – | – | 3 | 4 | 1 | – | 25 |
| Iowa | 2 | – | 102 | – | – | – | 1 | – | 4 | 3 | 3 | – | 7 |
| Mo. | – | – | 2 | – | 1 | – | – | – | – | 2 | 3 | – | 13 |
| N. Dak. | – | – | 17 | – | – | – | – | – | – | – | – | – | – |
| S. Dak. | – | – | 40 | – | – | – | – | – | – | – | – | – | 4 |
| Nebr. | – | – | – | – | – | – | – | – | 1 | – | – | – | 7 |
| Kans. | 2 | – | 122 | – | – | – | – | 1 | 4 | 16 | – | – | 13 |
| S. ATLANTIC | 23 | – | 89 | – | – | 4 | 4 | – | 102 | 69 | 17 | – | 174 |
| Del. | – | – | – | – | – | – | – | – | 1 | – | 1 | – | – |
| Md. | 1 | – | 8 | – | – | 3 | 3 | – | 10 | 3 | 2 | – | 29 |
| D.C. | – | – | – | – | – | – | – | – | 2 | – | – | – | 3 |
| Va. | 1 | – | 1 | – | – | 1 | – | – | 10 | 4 | 2 | – | 59 |
| W. Va. | – | – | 29 | – | – | – | – | – | 3 | 7 | – | – | 4 |
| N.C. | 4 | – | NN | – | – | – | 1 | – | 9 | 2 | 5 | – | 17 |
| S.C. | 1 | – | – | – | – | – | – | – | 13 | 1 | 1 | – | 10 |
| Ga. | – | – | – | – | – | – | – | – | 31 | 18 | – | – | 17 |
| Fla. | 16 | – | 51 | – | – | – | – | – | 23 | 34 | 6 | – | 35 |
| E.S. CENTRAL | 9 | – | 7 | – | – | 4 | 4 | – | 28 | 43 | 5 | – | 12 |
| Ky. | 5 | – | 7 | – | – | 3 | – | – | 4 | 15 | 1 | – | 3 |
| Tenn. | 1 | – | NN | – | – | – | 2 | – | 11 | 18 | 2 | – | – |
| Ala. | 3 | – | – | – | – | – | – | – | 12 | 4 | 2 | – | 7 |
| Miss. | – | – | – | – | – | 1 | 2 | – | 1 | 6 | – | – | 2 |
| W.S. CENTRAL | 19 | – | 38 | – | – | 8 | 4 | – | 26 | 88 | 56 | 2 | 141 |
| Ark. | – | – | 2 | – | – | – | – | – | 3 | 11 | 2 | – | 8 |
| La. | – | – | NN | – | – | – | 1 | – | – | 12 | 1 | – | 42 |
| Okla. | 6 | – | – | – | – | – | 2 | – | 2 | 7 | 1 | – | 12 |
| Tex. | 13 | – | 36 | – | – | 8 | 1 | – | 21 | 58 | 52 | 2 | 79 |
| MOUNTAIN | 9 | – | 62 | – | – | 2 | 5 | – | 11 | 29 | 15 | 1 | 87 |
| Mont. | 1 | – | 15 | – | – | – | 1 | – | – | – | – | – | 1 |
| Idaho | – | – | 4 | – | – | – | – | – | – | 1 | – | – | 1 |
| Wyo. | – | – | – | – | – | – | – | – | – | – | – | – | 2 |
| Colo. | 2 | – | 43 | – | – | 1 | 2 | – | 3 | 11 | 2 | – | 34 |
| N. Mex. | – | – | – | – | – | – | – | – | – | 5 | – | – | 6 |
| Ariz. | 1 | – | NN | – | – | – | – | – | 4 | 9 | 10 | 1 | 18 |
| Utah | – | – | – | – | – | – | 2 | – | 1 | 1 | 1 | – | 15 |
| Nev. | 5 | – | – | – | – | 1 | – | – | 3 | 2 | 2 | – | 10 |
| PACIFIC | 32 | 1 | 32 | – | 1 | 4 | 1 | 1 | 135 | 223 | 119 | 20 | 764 |
| Wash. | 4 | – | 24 | – | 1 | – | – | – | – | – | – | – | 49 |
| Oreg. | 4 | – | 2 | – | – | – | – | – | 7 | 18 | 2 | 5 | 45 |
| Calif. | 24 | 1 | – | – | – | 4 | 1 | 1 | 124 | 204 | 117 | 15 | 647 |
| Alaska | – | – | 2 | – | – | – | – | – | 1 | 1 | – | – | 6 |
| Hawaii | – | – | 4 | – | – | – | – | – | 3 | – | – | – | 17 |
| Guam | | | | | | | | | | | | | |
| P.R. | NA | NA | NA | NA | – | NA | – | – | NA | NA | NA | NA | 3 |
| V.I. | – | – | 11 | – | – | – | – | – | – | 5 | 1 | – | 3 |
| Pac. Trust Terr. | NA | NA | NA | NA | – | NA | – | – | NA | NA | NA | NA | – |
| | NA | NA | NA | NA | – | NA | – | – | NA | NA | NA | NA | 2 |

NN: Not notifiable. NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

## TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending November 8, 1980, and November 10, 1979 (45th week)

| REPORTING AREA | MEASLES (RUBEOLA) | | | MENINGOCOCCAL INFECTIONS TOTAL | | | MUMPS | | PERTUSSIS | RUBELLA | | TETANUS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1980 | CUM. 1980 | CUM. 1979 | 1980 | CUM. 1980 | CUM. 1979 | 1980 | CUM. 1980 | 1980 | 1980 | CUM. 1980 | CUM. 1980 |
| UNITED STATES | 25 | 13,118 | 12,676 | 56 | 2,282 | 2,247 | 81 | 7,749 | 30 | 18 | 3,481 | 64 |
| NEW ENGLAND | – | 672 | 290 | 4 | 127 | 127 | 1 | 584 | 2 | 1 | 209 | 3 |
| Maine | – | 33 | 17 | 1 | 6 | 7 | – | 298 | 1 | – | 68 | 1 |
| N.H. | – | 328 | 33 | – | 8 | 13 | – | 22 | 1 | – | 37 | – |
| Vt. | – | 226 | 119 | – | 14 | 7 | – | 12 | – | – | 3 | – |
| Mass. | – | 58 | 15 | 3 | 44 | 47 | – | 124 | – | – | 71 | – |
| R.I. | – | 2 | 102 | – | 9 | 8 | 1 | 30 | – | – | 9 | 1 |
| Conn. | – | 25 | 4 | – | 46 | 45 | – | 98 | – | 1 | 21 | 1 |
| MID. ATLANTIC | 5 | 3,806 | 1,546 | 9 | 400 | 350 | 17 | 869 | 5 | 1 | 562 | 8 |
| Upstate N.Y. | 3 | 701 | 650 | – | 121 | 120 | 6 | 138 | 2 | 1 | 216 | 3 |
| N.Y. City | 2 | 1,196 | 791 | 2 | 100 | 79 | 1 | 93 | 2 | – | 99 | 2 |
| N.J. | – | 828 | 58 | 1 | 83 | 90 | 2 | 117 | 1 | – | 101 | – |
| Pa. | – | 1,081 | 47 | 6 | 96 | 61 | 8 | 520 | – | – | 146 | 3 |
| E.N. CENTRAL | 1 | 2,448 | 3,318 | 8 | 264 | 251 | 37 | 2,913 | 4 | 1 | 833 | 4 |
| Ohio | – | 380 | 282 | 1 | 85 | 98 | 14 | 1,176 | 1 | – | 8 | 1 |
| Ind. | 1 | 93 | 223 | – | 41 | 44 | 2 | 136 | 1 | 1 | 354 | – |
| Ill. | – | 347 | 1,457 | 3 | 54 | 22 | 4 | 383 | 1 | – | 165 | 1 |
| Mich. | – | 250 | 840 | 4 | 68 | 68 | 14 | 874 | 1 | – | 129 | 1 |
| Wis. | – | 1,378 | 516 | – | 16 | 19 | 3 | 344 | – | – | 177 | 1 |
| W.N. CENTRAL | – | 1,321 | 1,799 | 5 | 100 | 72 | 3 | 301 | – | – | 200 | 4 |
| Minn. | – | 1,105 | 1,218 | 4 | 34 | 15 | 1 | 19 | – | – | 28 | 1 |
| Iowa | – | – | 16 | – | 11 | 13 | – | 51 | – | – | 9 | 1 |
| Mo. | – | 65 | 417 | – | 38 | 33 | – | 101 | – | – | 42 | 1 |
| N. Dak. | – | 1 | 21 | – | 2 | 1 | – | 4 | – | – | 5 | – |
| S. Dak. | – | – | 2 | 1 | 6 | 4 | – | 4 | – | – | 2 | – |
| Nebr. | – | 83 | 51 | – | – | – | – | 9 | – | – | 1 | – |
| Kans. | – | 67 | 74 | – | 9 | 6 | 2 | 113 | – | – | 113 | 1 |
| S. ATLANTIC | 3 | 1,964 | 2,014 | 12 | 538 | 549 | 9 | 1,050 | 3 | 3 | 345 | 11 |
| Del. | – | 3 | 1 | – | 2 | 5 | – | 40 | – | – | 1 | – |
| Md. | – | 83 | 16 | 2 | 49 | 53 | – | 340 | – | – | 71 | 1 |
| D.C. | – | 5 | – | – | 2 | – | – | 4 | – | – | 1 | – |
| Va. | – | 339 | 275 | 4 | 55 | 78 | – | 71 | – | 3 | 56 | 3 |
| W. Va. | 1 | 16 | 60 | – | 20 | 9 | 5 | 119 | – | – | 26 | 1 |
| N.C. | – | 130 | 114 | – | 94 | 85 | 1 | 94 | – | – | 46 | 1 |
| S.C. | – | 159 | 174 | – | 60 | 59 | 1 | 207 | – | – | 54 | 3 |
| Ga. | – | 826 | 521 | 5 | 101 | 80 | 1 | 10 | 2 | – | – | – |
| Fla. | 2 | 403 | 853 | 1 | 155 | 180 | 1 | 165 | 1 | – | 90 | 2 |
| E.S. CENTRAL | 1 | 334 | 212 | 4 | 194 | 162 | 1 | 877 | 2 | 2 | 86 | 6 |
| Ky. | 1 | 56 | 37 | 1 | 59 | 34 | – | 755 | 2 | 2 | 42 | 2 |
| Tenn. | – | 172 | 66 | 3 | 54 | 45 | – | 30 | – | – | 39 | 2 |
| Ala. | – | 22 | 85 | – | 52 | 38 | – | 29 | – | – | 3 | 2 |
| Miss. | – | 84 | 24 | – | 29 | 45 | 1 | 63 | – | – | 2 | – |
| W.S. CENTRAL | 5 | 972 | 926 | 4 | 243 | 332 | 3 | 278 | 1 | 1 | 137 | 18 |
| Ark. | – | 16 | 7 | – | 19 | 25 | – | 22 | 1 | – | 4 | 2 |
| La. | – | 12 | 254 | – | 90 | 118 | – | 68 | – | – | 12 | 5 |
| Okla. | – | 776 | 22 | 1 | 21 | 37 | – | – | – | – | 6 | 1 |
| Tex. | 5 | 168 | 643 | 3 | 113 | 152 | 3 | 188 | – | 1 | 115 | 10 |
| MOUNTAIN | 4 | 494 | 324 | 5 | 95 | 88 | 1 | 212 | 10 | 1 | 158 | – |
| Mont. | – | 2 | 56 | – | 3 | 10 | – | 58 | – | – | 45 | – |
| Idaho | – | – | 18 | 1 | 6 | 9 | – | 16 | 3 | – | 22 | – |
| Wyo. | – | – | 36 | 1 | 4 | 1 | – | – | – | – | 1 | – |
| Colo. | – | 24 | 68 | – | 23 | 5 | 1 | 59 | – | – | 12 | – |
| N. Mex. | – | 14 | 38 | – | 10 | 5 | – | – | 1 | – | 5 | – |
| Ariz. | 3 | 397 | 77 | – | 15 | 36 | – | 43 | 6 | 1 | 39 | – |
| Utah | – | 47 | 19 | – | 5 | 9 | – | 27 | – | – | 28 | – |
| Nev. | 1 | 10 | 12 | 3 | 29 | 13 | – | 9 | – | – | 6 | – |
| PACIFIC | 6 | 1,107 | 2,247 | 5 | 321 | 316 | 9 | 666 | 3 | 8 | 951 | 10 |
| Wash. | – | 177 | 1,139 | 1 | 59 | 54 | 2 | 140 | – | – | 86 | – |
| Oreg. | – | – | 62 | – | 51 | 26 | 2 | 86 | – | – | 62 | – |
| Calif. | 6 | 918 | 961 | 4 | 202 | 220 | 5 | 408 | 3 | 8 | 786 | 10 |
| Alaska | – | 6 | 17 | – | 9 | 6 | – | 12 | – | – | 12 | – |
| Hawaii | – | 6 | 68 | – | – | 10 | – | 20 | – | – | 5 | – |
| Guam | NA | 6 | 12 | – | 1 | 1 | NA | 10 | NA | NA | 2 | – |
| P.R. | – | 157 | 370 | – | 9 | 6 | 1 | 144 | – | – | 23 | 12 |
| V.I. | NA | 6 | 5 | – | 1 | 3 | NA | 2 | NA | NA | – | – |
| Pac. Trust Terr. | NA | 10 | 9 | – | – | 1 | NA | 21 | NA | NA | 1 | – |

NA: Not available.

All delayed reports and corrections will be included in the following week's cumulative totals.

## TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending November 8, 1980, and November 10, 1979 (45th week)

| REPORTING AREA | TUBERCULOSIS | | TULAREMIA | TYPHOID FEVER | | TYPHUS FEVER (Tick-borne) (RMSF) | | VENEREAL DISEASES (Civilian) | | | | | | RABIES (in Animals) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | GONORRHEA | | | SYPHILIS (Pri. & Sec.) | | | |
| | 1980 | CUM. 1980 | CUM. 1980 | 1980 | CUM. 1980 | 1980 | CUM. 1980 | 1980 | CUM. 1980 | CUM. 1979 | 1980 | CUM. 1980 | CUM. 1979 | CUM. 1980 |
| UNITED STATES | 529 | 23,759 | 187 | 15 | 447 | 11 | 1,106 | 22,659 | 869,217 | 868,348 | 601 | 23,391 | 21,598 | 5,537 |
| NEW ENGLAND | 15 | 664 | 6 | – | 11 | – | 14 | 580 | 22,025 | 21,380 | 13 | 454 | 426 | 55 |
| Maine | – | 46 | – | – | 1 | – | – | 18 | 1,252 | 1,506 | 1 | 6 | 10 | 24 |
| N.H. | – | 15 | – | – | – | – | – | 14 | 778 | 788 | – | 5 | 16 | 7 |
| Vt. | 2 | 24 | – | – | – | – | – | 8 | 491 | 540 | – | 6 | 2 | – |
| Mass. | 7 | 368 | 4 | – | 7 | – | 7 | 261 | 9,278 | 8,447 | 11 | 272 | 243 | 14 |
| R.I. | 2 | 64 | 1 | – | 1 | – | 2 | 40 | 1,419 | 1,730 | – | 29 | 16 | 1 |
| Conn. | 4 | 147 | 1 | – | 2 | – | 5 | 239 | 8,807 | 8,369 | 1 | 136 | 139 | 9 |
| MID. ATLANTIC | 81 | 3,831 | 3 | – | 83 | – | 48 | 2,859 | 96,219 | 94,995 | 57 | 3,162 | 3,254 | 68 |
| Upstate N.Y. | 6 | 729 | 1 | – | 14 | – | 14 | 546 | 17,725 | 16,447 | 7 | 283 | 231 | 36 |
| N.Y. City | 33 | 1,386 | 1 | – | 37 | – | 3 | 1,000 | 37,367 | 37,227 | 36 | 2,025 | 2,215 | – |
| N.J. | 30 | 848 | 1 | – | 19 | – | 19 | 661 | 17,763 | 16,889 | 7 | 386 | 430 | 13 |
| Pa. | 12 | 868 | – | – | 13 | – | 12 | 652 | 23,364 | 24,432 | 7 | 468 | 378 | 19 |
| E.N. CENTRAL | 94 | 3,418 | 1 | 3 | 47 | 2 | 28 | 3,364 | 134,825 | 136,204 | 134 | 2,383 | 2,720 | 842 |
| Ohio | 20 | 619 | – | 1 | 13 | 2 | 15 | 785 | 35,088 | 37,460 | 10 | 326 | 523 | 53 |
| Ind. | 15 | 377 | – | – | – | – | 2 | 497 | 14,176 | 11,375 | 5 | 170 | 188 | 69 |
| Ill. | 22 | 1,179 | – | – | 18 | – | 6 | 1,036 | 42,651 | 43,138 | 91 | 1,443 | 1,536 | 455 |
| Mich. | 34 | 1,031 | 1 | 1 | 11 | – | 3 | 825 | 30,740 | 31,875 | 23 | 356 | 400 | 15 |
| Wis. | 3 | 212 | – | 1 | 5 | – | 2 | 221 | 12,170 | 12,356 | 5 | 88 | 73 | 250 |
| W.N. CENTRAL | 15 | 856 | 29 | – | 27 | – | 54 | 981 | 42,088 | 43,005 | 12 | 317 | 277 | 1,785 |
| Minn. | 4 | 159 | 1 | – | 3 | – | – | 241 | 6,851 | 7,168 | 6 | 105 | 77 | 202 |
| Iowa | 1 | 79 | 1 | – | 2 | – | 3 | 84 | 4,410 | 5,147 | – | 23 | 29 | 406 |
| Mo. | 5 | 403 | 24 | – | 18 | – | 34 | 430 | 18,829 | 18,447 | 4 | 149 | 125 | 348 |
| N. Dak. | 3 | 45 | – | – | 1 | – | – | 11 | 576 | 749 | – | 4 | 2 | 212 |
| S. Dak. | – | 42 | – | – | 1 | – | 2 | 21 | 1,210 | 1,419 | – | 5 | 2 | 385 |
| Nebr. | 2 | 37 | 1 | – | 1 | – | 5 | 65 | 3,249 | 3,026 | 2 | 10 | 6 | 90 |
| Kans. | – | 91 | 2 | – | 1 | – | 10 | 129 | 6,963 | 7,049 | – | 21 | 36 | 142 |
| S. ATLANTIC | 103 | 5,227 | 10 | – | 43 | 5 | 693 | 5,769 | 219,361 | 209,997 | 137 | 5,672 | 5,115 | 446 |
| Del. | – | 66 | – | – | 1 | – | 2 | 128 | 3,058 | 3,474 | – | 15 | 27 | 1 |
| Md. | 29 | 629 | 2 | – | 3 | – | 73 | 458 | 23,331 | 25,912 | 10 | 394 | 325 | 32 |
| D.C. | 7 | 325 | – | – | 4 | – | – | 311 | 15,039 | 13,914 | 6 | 421 | 390 | – |
| Va. | – | 556 | – | – | 8 | 2 | 95 | 450 | 20,122 | 20,092 | 19 | 513 | 411 | 23 |
| W. Va. | 2 | 188 | – | – | 4 | – | 5 | 76 | 2,994 | 2,849 | – | 16 | 45 | 24 |
| N.C. | 17 | 937 | 3 | – | 5 | 2 | 314 | 1,042 | 33,111 | 30,422 | 9 | 424 | 387 | 20 |
| S.C. | 6 | 449 | – | – | 3 | – | 140 | 631 | 20,572 | 19,744 | 6 | 329 | 267 | 59 |
| Ga. | 5 | 710 | 5 | – | – | 1 | 57 | 1,419 | 42,947 | 39,516 | 36 | 1,612 | 1,424 | 221 |
| Fla. | 37 | 1,367 | – | – | 15 | – | 7 | 1,254 | 58,187 | 54,074 | 51 | 1,948 | 1,839 | 66 |
| E.S. CENTRAL | 48 | 2,193 | 10 | – | 12 | – | 113 | 2,472 | 71,173 | 73,736 | 64 | 1,950 | 1,448 | 308 |
| Ky. | 12 | 494 | – | – | 3 | – | 19 | 199 | 10,352 | 9,871 | 1 | 117 | 144 | 131 |
| Tenn. | 22 | 712 | 7 | – | 1 | – | 61 | 931 | 25,667 | 26,681 | 33 | 821 | 603 | 127 |
| Ala. | 5 | 572 | 1 | – | 3 | – | 17 | 1,030 | 21,235 | 21,807 | 19 | 433 | 265 | 50 |
| Miss. | 9 | 415 | 2 | – | 5 | – | 16 | 312 | 13,919 | 15,377 | 11 | 579 | 436 | – |
| W.S. CENTRAL | 51 | 2,649 | 85 | 3 | 70 | 3 | 135 | 2,514 | 108,425 | 111,795 | 76 | 4,628 | 3,914 | 1,266 |
| Ark. | 6 | 294 | 57 | – | 8 | 1 | 35 | 144 | 8,885 | 8,663 | 4 | 194 | 138 | 166 |
| La. | – | 500 | – | – | 2 | – | 3 | 378 | 19,882 | 20,000 | – | 1,164 | 975 | 14 |
| Okla. | 8 | 294 | 20 | – | 6 | 2 | 70 | 255 | 10,985 | 11,092 | 1 | 93 | 80 | 226 |
| Tex. | 37 | 1,561 | 8 | 3 | 54 | – | 27 | 1,737 | 68,673 | 72,040 | 71 | 3,177 | 2,721 | 860 |
| MOUNTAIN | 25 | 671 | 32 | – | 26 | – | 16 | 833 | 33,350 | 34,836 | 6 | 580 | 431 | 229 |
| Mont. | – | 30 | 9 | – | 1 | – | 3 | NA | 1,020 | 1,716 | NA | 5 | 8 | 55 |
| Idaho | – | 25 | 1 | – | 1 | – | 1 | 53 | 1,489 | 1,540 | – | 26 | 25 | 2 |
| Wyo. | – | 20 | 4 | – | – | – | 2 | 23 | 984 | 999 | 1 | 12 | 8 | 15 |
| Colo. | 7 | 113 | 8 | – | 7 | – | 5 | 185 | 9,099 | 9,276 | 4 | 152 | 89 | 54 |
| N. Mex. | 4 | 124 | 2 | – | 3 | – | 4 | 55 | 4,092 | 4,266 | – | 103 | 78 | 44 |
| Ariz. | 11 | 288 | 1 | – | 7 | – | – | 333 | 8,970 | 9,707 | – | 190 | 125 | 55 |
| Utah | 3 | 43 | 5 | – | 7 | – | 1 | 34 | 1,686 | 1,777 | – | 15 | 4 | 3 |
| Nev. | – | 28 | 2 | – | – | – | – | 150 | 6,010 | 5,555 | 1 | 77 | 94 | 1 |
| PACIFIC | 97 | 4,250 | 11 | 9 | 128 | 1 | 5 | 3,287 | 141,751 | 142,400 | 102 | 4,245 | 4,013 | 538 |
| Wash. | 9 | 363 | – | – | 3 | – | – | NA | 11,659 | 12,514 | NA | 189 | 189 | – |
| Oreg. | 2 | 157 | 4 | – | 9 | – | 1 | 142 | 9,754 | 8,939 | 1 | 97 | 150 | 4 |
| Calif. | 86 | 3,588 | 6 | 9 | 114 | 1 | 4 | 3,031 | 114,022 | 113,798 | 100 | 3,814 | 3,567 | 488 |
| Alaska | – | 53 | 1 | – | – | – | – | 68 | 3,497 | 4,424 | – | 8 | 23 | 46 |
| Hawaii | – | 89 | – | – | 2 | – | – | 46 | 2,819 | 2,725 | 1 | 137 | 84 | – |
| Guam | NA | 52 | – | NA | 1 | NA | – | NA | 97 | 104 | NA | 5 | – | – |
| P.R. | 26 | 197 | – | – | 8 | – | – | 59 | 2,370 | 1,903 | 9 | 529 | 502 | 47 |
| V.I. | NA | – | – | NA | – | NA | – | NA | 108 | 138 | NA | 10 | 7 | – |
| Pac. Trust Terr. | NA | 35 | – | NA | – | NA | – | NA | 379 | 422 | NA | – | 1 | – |

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

## TABLE IV. Deaths in 121 U.S. cities,* week ending November 8, 1980 (45th week)

| REPORTING AREA | ALL CAUSES, BY AGE (YEARS) | | | | | P&I** TOTAL |
|---|---|---|---|---|---|---|
| | ALL AGES | >65 | 45-64 | 25-44 | <1 | |
| NEW ENGLAND | 683 | 452 | 162 | 36 | 15 | 51 |
| Boston, Mass. | 176 | 107 | 43 | 12 | 5 | 13 |
| Bridgeport, Conn. | 38 | 24 | 11 | 2 | 1 | 2 |
| Cambridge, Mass. | 25 | 18 | 5 | 2 | – | 5 |
| Fall River, Mass. | 30 | 20 | 8 | 2 | – | 2 |
| Hartford, Conn. | 78 | 49 | 22 | 4 | 3 | 5 |
| Lowell, Mass. | 25 | 21 | 4 | – | – | 4 |
| Lynn, Mass. | 25 | 18 | 7 | – | – | 1 |
| New Bedford, Mass. | 25 | 18 | 5 | 1 | 1 | 1 |
| New Haven, Conn. | 45 | 24 | 11 | 5 | 1 | 4 |
| Providence, R.I. | 78 | 50 | 21 | 3 | 2 | 2 |
| Somerville, Mass. | 8 | 5 | 3 | – | – | – |
| Springfield, Mass. | 35 | 27 | 7 | – | 1 | 5 |
| Waterbury, Conn. | 20 | 15 | 4 | – | – | 1 |
| Worcester, Mass. | 75 | 56 | 11 | 5 | 1 | 6 |
| MID. ATLANTIC | 2,497 | 1,669 | 585 | 138 | 49 | 99 |
| Albany, N.Y. | 44 | 28 | 7 | 3 | 2 | – |
| Allentown, Pa. | 18 | 16 | 2 | – | – | – |
| Buffalo, N.Y. | 103 | 67 | 24 | 8 | 2 | 4 |
| Camden, N.J. | 44 | 27 | 12 | 3 | – | 3 |
| Elizabeth, N.J. | 20 | 14 | 3 | – | – | 1 |
| Erie, Pa.† | 42 | 24 | 16 | – | 2 | 3 |
| Jersey City, N.J. | 38 | 21 | 13 | 3 | – | – |
| Newark, N.J. | 41 | 19 | 13 | 5 | 1 | 1 |
| N.Y. City, N.Y. | 1,477 | 998 | 337 | 83 | 33 | 47 |
| Paterson, N.J. | 30 | 18 | 7 | 2 | 1 | 2 |
| Philadelphia, Pa.† | 219 | 134 | 59 | 17 | 3 | 9 |
| Pittsburgh, Pa.† | 57 | 42 | 11 | 3 | 1 | 5 |
| Reading, Pa. | 36 | 26 | 9 | – | 1 | 9 |
| Rochester, N.Y. | 133 | 94 | 31 | 4 | 1 | 6 |
| Schenectady, N.Y. | 40 | 29 | 10 | 1 | – | 1 |
| Scranton, Pa.† | 28 | 23 | 4 | – | 1 | 2 |
| Syracuse, N.Y. | 43 | 28 | 7 | 3 | 1 | 1 |
| Trenton, N.J. | 31 | 19 | 10 | 2 | – | – |
| Utica, N.Y. | 23 | 17 | 5 | 1 | – | 2 |
| Yonkers, N.Y. | 30 | 25 | 5 | – | – | 3 |
| E.N. CENTRAL | 2,322 | 1,409 | 559 | 152 | 114 | 62 |
| Akron, Ohio | 78 | 51 | 16 | 5 | 2 | – |
| Canton, Ohio | 40 | 28 | 9 | – | 2 | 2 |
| Chicago, Ill. | 566 | 306 | 141 | 52 | 32 | 9 |
| Cincinnati, Ohio | 142 | 79 | 39 | 13 | 6 | 8 |
| Cleveland, Ohio | 163 | 86 | 47 | 11 | 14 | 3 |
| Columbus, Ohio | 134 | 81 | 28 | 11 | 10 | 6 |
| Dayton, Ohio | 107 | 67 | 24 | 6 | 9 | 2 |
| Detroit, Mich. | 251 | 159 | 53 | 14 | 14 | 7 |
| Evansville, Ind. | 51 | 38 | 10 | 2 | 1 | 1 |
| Fort Wayne, Ind. | 63 | 38 | 15 | 3 | 3 | 2 |
| Gary, Ind. | 14 | 4 | 7 | 2 | 1 | – |
| Grand Rapids, Mich. | 50 | 30 | 15 | 2 | 3 | 1 |
| Indianapolis, Ind. | 139 | 87 | 37 | 6 | 4 | 2 |
| Madison, Wis. | 45 | 25 | 16 | 1 | 3 | 3 |
| Milwaukee, Wis. | 163 | 118 | 33 | 5 | 4 | 5 |
| Peoria, Ill. | 55 | 34 | 13 | 4 | 2 | 4 |
| Rockford, Ill. | 51 | 34 | 9 | 3 | 1 | 2 |
| South Bend, Ind. | 48 | 38 | 8 | 1 | – | 2 |
| Toledo, Ohio | 105 | 65 | 28 | 10 | 1 | 2 |
| Youngstown, Ohio | 57 | 41 | 11 | 1 | 2 | 1 |
| W.N. CENTRAL | 761 | 509 | 137 | 38 | 42 | 31 |
| Des Moines, Iowa | 68 | 50 | 7 | 3 | 4 | 3 |
| Duluth, Minn. | 44 | 36 | 3 | – | 4 | 1 |
| Kansas City, Kans. | 47 | 30 | 10 | 1 | 1 | 2 |
| Kansas City, Mo. | 139 | 78 | 36 | 10 | 10 | 9 |
| Lincoln, Nebr. | 27 | 19 | 5 | 3 | – | 1 |
| Minneapolis, Minn. | 86 | 64 | 10 | 6 | 4 | – |
| Omaha, Nebr. | 76 | 52 | 17 | 1 | 2 | 3 |
| St. Louis, Mo. | 143 | 88 | 30 | 6 | 12 | 2 |
| St. Paul, Minn. | 62 | 45 | 8 | 5 | 2 | – |
| Wichita, Kans. | 69 | 47 | 11 | 3 | 3 | 10 |

| REPORTING AREA | ALL CAUSES, BY AGE (YEARS) | | | | | P&I** TOTAL |
|---|---|---|---|---|---|---|
| | ALL AGES | >65 | 45-64 | 25-44 | <1 | |
| S. ATLANTIC | 1,230 | 776 | 309 | 79 | 39 | 50 |
| Atlanta, Ga. | 128 | 76 | 38 | 7 | 2 | 2 |
| Baltimore, Md. | 322 | 212 | 75 | 20 | 11 | 10 |
| Charlotte, N.C. | 52 | 35 | 10 | 3 | 3 | 4 |
| Jacksonville, Fla. | 110 | 64 | 23 | 14 | 5 | 1 |
| Miami, Fla. | 90 | 57 | 24 | 2 | 3 | 3 |
| Norfolk, Va. | 57 | 34 | 15 | 6 | 2 | 4 |
| Richmond, Va. | 64 | 38 | 19 | 3 | 1 | 4 |
| Savannah, Ga. | 35 | 19 | 13 | 1 | 2 | 2 |
| St. Petersburg, Fla. | 68 | 56 | 7 | 3 | 2 | 6 |
| Tampa, Fla. | 74 | 54 | 14 | – | 4 | 10 |
| Washington, D.C. | 194 | 109 | 61 | 19 | 4 | 4 |
| Wilmington, Del. | 36 | 22 | 10 | 1 | – | – |
| E.S. CENTRAL | 698 | 399 | 193 | 48 | 32 | 40 |
| Birmingham, Ala. | 113 | 61 | 29 | 6 | 13 | 5 |
| Chattanooga, Tenn. | 70 | 42 | 24 | 3 | 1 | 6 |
| Knoxville, Tenn. | 39 | 23 | 10 | 3 | 1 | 2 |
| Louisville, Ky. | 114 | 67 | 29 | 8 | 8 | 7 |
| Memphis, Tenn. | 167 | 90 | 53 | 13 | 2 | 7 |
| Mobile, Ala. | 52 | 30 | 13 | 3 | 4 | 3 |
| Montgomery, Ala. | 51 | 33 | 12 | 3 | 1 | 5 |
| Nashville, Tenn. | 92 | 53 | 23 | 9 | 2 | 5 |
| W.S. CENTRAL | 1,327 | 764 | 328 | 137 | 41 | 29 |
| Austin, Tex. | 45 | 31 | 7 | 5 | 1 | – |
| Baton Rouge, La. | 45 | 27 | 12 | 5 | – | 1 |
| Corpus Christi, Tex. | 30 | 18 | 5 | 1 | 1 | – |
| Dallas, Tex. | 166 | 98 | 39 | 15 | 8 | 5 |
| El Paso, Tex. | 54 | 31 | 17 | 3 | 2 | 4 |
| Fort Worth, Tex. | 111 | 71 | 22 | 8 | 6 | 1 |
| Houston, Tex. | 399 | 194 | 109 | 57 | 10 | 4 |
| Little Rock, Ark. | 66 | 45 | 12 | 6 | 1 | 3 |
| New Orleans, La. | 158 | 99 | 43 | 10 | 4 | – |
| San Antonio, Tex. | 132 | 79 | 32 | 16 | 3 | 5 |
| Shreveport, La. | 51 | 30 | 13 | 4 | 1 | 3 |
| Tulsa, Okla. | 70 | 41 | 17 | 7 | 4 | 3 |
| MOUNTAIN | 584 | 372 | 130 | 42 | 19 | 20 |
| Albuquerque, N. Mex. | 67 | 38 | 14 | 6 | 3 | 1 |
| Colo. Springs, Colo. | 24 | 18 | 5 | – | – | 2 |
| Denver, Colo. | 126 | 77 | 36 | 8 | – | 3 |
| Las Vegas, Nev. | 70 | 37 | 21 | 6 | 3 | – |
| Ogden, Utah | 13 | 8 | 2 | 2 | – | – |
| Phoenix, Ariz. | 120 | 79 | 21 | 10 | 9 | – |
| Pueblo, Colo. | 31 | 25 | 5 | 1 | – | 4 |
| Salt Lake City, Utah | 37 | 20 | 8 | 3 | 4 | 1 |
| Tucson, Ariz. | 96 | 70 | 18 | 6 | – | 9 |
| PACIFIC | 1,802 | 1,157 | 402 | 128 | 55 | 50 |
| Berkeley, Calif. | 23 | 17 | 5 | 1 | – | 1 |
| Fresno, Calif. | 55 | 40 | 6 | 5 | 2 | 2 |
| Glendale, Calif. | 27 | 23 | 4 | – | – | 1 |
| Honolulu, Hawaii | 47 | 25 | 14 | 3 | 3 | 1 |
| Long Beach, Calif. | 108 | 70 | 28 | 5 | 2 | 3 |
| Los Angeles, Calif. | 591 | 363 | 134 | 50 | 16 | 13 |
| Oakland, Calif. | 72 | 54 | 11 | 4 | 1 | 5 |
| Pasadena, Calif. | 28 | 21 | 5 | 1 | – | 3 |
| Portland, Oreg. | 110 | 65 | 27 | 7 | 6 | – |
| Sacramento, Calif. | 65 | 42 | 16 | 2 | 2 | 1 |
| San Diego, Calif. | 131 | 87 | 25 | 12 | 6 | 2 |
| San Francisco, Calif. | 150 | 98 | 36 | 9 | 3 | 1 |
| San Jose, Calif. | 157 | 99 | 39 | 10 | 7 | 11 |
| Seattle, Wash. | 144 | 92 | 36 | 10 | 1 | 4 |
| Spokane, Wash. | 50 | 33 | 11 | 3 | 2 | – |
| Tacoma, Wash. | 44 | 28 | 5 | 6 | 4 | 2 |
| TOTAL | 11,904 | 7,507 | 2,805 | 798 | 406 | 432 |

*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.

## Measles Vaccination Reactions Among College Students — North Carolina, Massachusetts

The increasing proportion of measles cases among young adults in recent years has resulted in immunization programs for civilians in outbreak situations as well as ongoing immunization programs for personnel in military training centers. Such programs have raised the issue of whether these populations experience severe side effects from measles vaccination (*1*). However, 2 recent studies, done in North Carolina and Massachusetts and detailed below, support the growing evidence (*2,3*) that young adults are not at increased risk of serious adverse reactions from measles vaccination.

**North Carolina:** In response to a measles outbreak in Orange County, North Carolina, a measles vaccination campaign was carried out in February 1980 at the University of North Carolina (UNC), Chapel Hill. In the county, there were 41 measles cases with onset of illness in the period January 14-March 4, 1980. One patient, who had onset on January 20, was a student at UNC. The source of this student's illness could not be traced to any of the cases in the community.

During the vaccination campaign, approximately 2,500 of the 20,000 students enrolled were vaccinated. A questionnaire concerning symptoms during the 4-week period following vaccination was sent to 500 vaccinees and 500 unvaccinated controls; 611 questionnaires were returned (61.1% overall response) of which 269 (53.8% response) were from vaccinees and 342 (68.4% response) from unvaccinated controls. Of the vaccinees, 162 (60.2%) gave a history of prior measles vaccination and 63 (23.4%) reported having had measles. Of the unvaccinated controls, 200 (58.5%) gave a history of prior measles vaccination and 137 (40.1%) reported having had measles. Respondents included 471 (77.2%) undergraduate and 139 (22.8%) graduate students.

Analysis of responses concerning symptoms (Table 1) revealed no difference between the vaccinated and the unvaccinated control groups with respect to fever, rash, rhinorrhea, cough, sore throat, eye pain, headache, or bedrest.

**Massachusetts:** From March 20 to May 5, 1980, 22 cases of rash illness were identified among students in 4 dormitories at the University of Lowell. Fifteen cases were diagnosed as measles by private physicians; 2 cases were confirmed serologically. Following a review of student immunization records, measles-mumps-rubella (MMR) vaccine was

**TABLE 1. Rates of symptoms among vaccinees and unvaccinated controls during the 4 weeks following measles vaccination, Chapel Hill, North Carolina, 1980**

| Symptom | Percent of vaccinees | Percent of unvaccinated controls | P value |
|---|---|---|---|
| | N = 269 | N = 342 | |
| Fever | 6 | 4 | NS* |
| Rash | 3 | 1 | NS |
| Runny nose | 9 | 6 | NS |
| Cough | 4 | 4 | NS |
| Sore throat | 9 | 6 | NS |
| Eye pain | 3 | 2 | NS |
| Headache | 8 | 5 | NS |
| Illness requiring bedrest | 4 | 1 | NS |
| Pain and swelling at vaccination site | 8 | — | — |
| Redness at vaccination site | 3 | — | — |

*Not significant.

*Measles – Continued*

administered during the last week of April to 3,062 of the 8,900 registered students and employees.

Two weeks later, a questionnaire concerning vaccine reactions was distributed in the dining hall of 1 dormitory complex. Of 670 questionnaires distributed, 536 (84%) were returned: 388 (68.9%) from vaccinees and 175 (31.1%) from unvaccinated students. Of the respondents, 447 (79.4%) were male and 116 (20.6%) were female.

Analysis of the frequency of symptoms during the 2-week period following the vaccination campaign revealed no significant differences between vaccinated and unvaccinated groups with respect to fever, rash, sore throat, cough, or photophobia (Table 2). However, there were significantly higher rates of headache and arthralgia among vaccinees.

**TABLE 2. Rates of symptoms among vaccinees and unvaccinated controls following MMR vaccination, University of Lowell, Massachusetts, 1980**

| Symptom | Percent of vaccinees | Percent of unvaccinated controls | P value |
|---|---|---|---|
| | N = 388 | N = 175 | |
| Fever | 12 | 8 | NS* |
| Rash | 4 | 4 | NS |
| Sore throat | 27 | 22 | NS |
| Cough | 23 | 18 | NS |
| Headache | 30 | 20 | <.02 |
| Photophobia | 12 | 14 | NS |
| Arthralgia | 15 | 7 | <.01 |

*Not significant.

The difference in frequency for 1 or more constitutional symptoms between vaccinees (54.9%) and nonvaccinees (42.3%) was also statistically significant. Local reactions consisting of pain or swelling at the injection site were reported by 17.7% of the vaccinees. The University of Lowell is now requiring physician proof of previous measles illness or measles vaccination for student admission this fall.

*Reported by LF King, A Peterson, RN, University of Lowell; LM McCartin, MD, K Donnelly, RN, Lowell Health Dept; NJ Fiumara, MD, State Epidemiologist, M McDonough, RN, Massachusetts State Dept of Public Health; J Taylor, MD, J McCutchan, MD, University of North Carolina, Chapel Hill; J Robinson, Orange County Health Dept; M Hines, DVM, State Epidemiologist, J MacCormack, MD, North Carolina State Dept of Human Resources; Surveillance and Assessment Br, Immunization Div, Bur of State Services, and Field Services Div, Bur of Epidemiology, CDC.*

**Editorial Note:** In a recent article, a high frequency of side effects was reported after a measles vaccination campaign was undertaken on a college campus in Los Angeles in response to a measles outbreak (*1*). Of special concern was the fact that 17% of the vaccinees required bedrest. The absence of a control group in that study made it impossible to distinguish potential vaccine reactions from background illnesses.

Four controlled studies in young adult recipients of measles vaccine have now been reported. Vaccination of measles-susceptible Air Force recruits did not show an increased rate of adverse reactions over that of controls with respect to dispensary visits, hospitalizations, eye pain, pharyngitis, coryza, cough, myalgias, joint pain, diarrhea, and headache (*2*) but did show a slight increase in reports of fever. Vaccination of college students during a measles outbreak in Wisconsin showed a significantly higher rate of fever and rash in vaccinees than in controls (*3*). However, there was no difference between vaccinees and controls with respect to sore throat, cough, coryza, headache, and confinement to bed. In the North Carolina study reported here, none of the symptoms were

*Measles – Continued*

significantly more common among vaccinees. On the basis of a history of prior measles illness and/or measles vaccination, the majority of adults in the vaccinated group probably were immune to measles before being vaccinated in the UNC campaign. Of note is the absence of high rates of adverse reactions to vaccination in this group, a concern that has been raised about vaccination in adults with prior measles immunity. In the Massachusetts study, only arthralgia and headache were significantly more common among vaccinees. Arthralgia is most likely caused by the rubella component of the MMR vaccine (*4*).

Thus, controlled studies, to date, have not shown that young adults have an increased risk of serious adverse reactions from measles vaccination. With the large numbers of susceptible students attending college, a number of campus outbreaks have been recorded; thus it is essential that this group be protected. The requirement of documentation of previous measles illness or measles vaccination for attendance at high school and college is the best way to assure protection of this group.

*References*

1. Krause PJ, Cherry JD, Deseda-Tous J, et al. Epidemic measles in young adults. Ann Intern Med 1979;90:873-6.
2. MMWR 1979;28:553-4.
3. MMWR 1980;29:21-2.
4. MMWR 1978;27:453.

## Raccoon Rabies – Florida

On April 25, 1980, a pet raccoon that had had contact with 150 children and adults during the previous 7 months was diagnosed as rabid by fluorescent-antibody (FA) examination of brain tissue. The animal had exhibited its first signs of illness on April 21. Exposure histories were obtained for persons who had had contact with the animal during the 60 days before it became ill, and postexposure prophylaxis with human rabies immune globulin (HRIG) and duck embryo vaccine (DEV) was recommended for 74 persons. Seventy-one persons received a complete postexposure vaccination series of HRIG and 23 doses of DEV. The 74 exposures were bites (10), scratches (23), licks (17), petting only (16), other* (6), and unknown (2). Of these 74 exposures, 52 (70%) occurred in school, 9 (12%) at home, 1 (1%) in another setting, and 12 (16%) in unknown sites. There were 43 males (58%) and 31 females exposed; most of those exposed (72%) were 13 to 15 years old (range 10-63 years).

The raccoon had been found in the woods in Okaloosa County, Florida, on September 15, 1979. It was taken into a home, and a pet collar was placed on its neck. However, the animal soon was released, and it stayed in the general vicinity, begging food. On November 15, a nearby shopkeeper and his wife, assuming, because of the raccoon's collar, that it was someone's lost pet and therefore safe to keep, took it in as a house pet.

After that date, the raccoon was in captivity and was not free to roam. However, it escaped for a 24-hour period during the first week of January 1980. On April 21, it began to exhibit aggressive behavior, anorexia, choking, and staggering, and it was taken to a veterinarian. It bit the veterinarian and his assistant before it was killed and examined. FA tests of brain specimens were positive for rabies virus. The animal had never been vaccinated.

*Included feeding, holding, or touching the animal.

*(Continued on page 552)*

*Rabies -- Continued*

Exposure to this rabid animal resulted in the administration of 554 cc of HRIG @ $18.29 per cc, or $10,132, plus 1,883 doses of DEV @ $2.97 per cc, or $5,592. The estimated cost for physicians, nurses, and local epidemiologic investigative time was $4,440 ($60 minimum per exposed person). In addition, the estimated cost for persons counseled but not considered exposed was $1,460 ($20 per person). Thus, the minimum estimated cost for this exposure to a pet raccoon was $21,624, a figure which does not include the time of state and federal epidemiologic and laboratory personnel.

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**Editorial Note:** This incident is noteworthy for several reasons. First, it points out once again the potential hazard of harboring wild animals as pets. There is no way to determine if an animal caught in the wild is incubating rabies. Secondly, this episode illustrates the need to assess possible exposures to avoid overtreatment. Many of the persons treated in this incident were probably not exposed to the virus. As noted in the ACIP Recommendations on Rabies Prevention (*1*), exposure is defined as contamination of scratches, abrasions, open wounds, or mucous membranes with infectious saliva. Petting, per se, is specifically noted as a non-exposure. Rabies virus cannot penetrate unbroken skin, and this must be kept in mind in determining exposure potential. Finally, this episode illustrates that the pathogenesis of rabies in wildlife is still incompletely understood, a fact which affects treatment. Persons were treated who had been "exposed" as long as 60 days before the raccoon's onset of illness because the period of preclinical shedding for wildlife is unknown, although some data would suggest that it is short (i.e., less than 3 weeks). By contrast, persons exposed to rabid dogs and cats are only treated if their exposure was up to 10 days before the animal's onset of illness because it is known that dogs and cats shed virus for only a few days before illness develops.

The decision in this case to use a 60-day risk period cannot be medically challenged although it may have resulted in unnecessary treatment. Given the present inability to prevent or recognize rabies in wild animals and the increasing frequency with which pet wildlife are being found rabid, it is strongly recommended that wild animals not be harbored as pets.

*Reference*

1. MMWR 1980;29:265-72, 277-80.

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