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*Epidemiologic Notes and Reports*

## Early Detection of Primary Hepatocellular Carcinoma — Alaska

High rates of primary hepatocellular carcinoma (PHC) and hepatitis B virus (HBV) infection have been found in the Alaskan Eskimo population (*1,2*). Chronic HBV infection is believed to have an etiologic role in the development of PHC. Alpha-fetoprotein (AFP) is frequently elevated in clinically evident PHC, but its use in the preclinical detection of PHC in persons serologically positive for hepatitis B surface antigen (HBsAg) has not been extensively evaluated. In 1980, a pilot AFP screening program was begun among 20 HBsAg-positive Alaskan Natives from three families at high risk for PHC. Each family had a high rate of HBV infection and had two family members die of PHC. In 1982, semiannual AFP screening resulted in the early detection and surgical resection of a 2-cm PHC in an asymptomatic, 19-year-old Eskimo man who has since done well (*3*). After this success, the AFP screening program was expanded to include all HBsAg-positive Alaskan Natives.

Between November 1, 1982, and December 31, 1983, 925 Alaskan Natives with sera positive for HBsAg were tested for AFP. As a result, four asymptomatic persons with proven or suspected PHC were identified. The following is a report of the most recent case and a description of the AFP screening program.

On November 27, 1983, an 11-year-old Eskimo boy was found to have an AFP level of 1,342 ng/ml (normal 25 ng/ml or less, ELISA). He was HBsAg-positive when first tested in 1975 and had a previously normal AFP level in November 1982. While the boy had no previous family history of PHC, three other persons from the same village (population 331) developed PHC since 1980. On evaluation at the Alaska Native Medical Center in Anchorage, the boy was asymptomatic and normal on physical examination, although his alkaline phosphatase and serum glutamic-oxaloacetic transaminase (SGOT) levels were mildly elevated. Ultrasonography, CAT scan, and hepatic angiography showed a 3-cm tumor in the medial portion of the left lobe of the liver. On December 5, the boy underwent successful surgical resection of a 3-cm, encapsulated PHC. He did well post-operatively and returned to his village on December 23. Following surgery, the AFP level rapidly declined and was 7.6 ng/ml on January 8, 1984.

The expanded AFP screening program, begun in November 1982, consists of semiannual AFP testing of all HBsAg-positive Alaskan Natives who are tracked by a computerized register. In the program's first 14 months, 14 persons, including four with liver tumors, have been identified as having elevated AFP not related to pregnancy. Three of the tumors were biopsied and proved to be PHC: one in a 10-year-old boy who is doing well 5 months after a successful resection; one in a 66-year-old man who died 1 year after an unresectable tumor was discovered; and one in the 11-year-old boy reported above. The fourth liver tumor, docu-

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mented by ultrasonography and CAT scan, was in an elderly man who declined biopsy and surgery. All patients with tumors were asymptomatic at the time of detection, and all had rising AFP levels or a single level above 1,000 ng/ml. Of the 10 remaining people with elevated AFP, one has had low-level elevations (50-90 ng/ml) and is being evaluated, and nine had transient elevations associated with acute HBV infection. These preliminary results suggest that AFP screening of HBsAg-positive persons can, at least sometimes, detect PHC at a stage when surgical resection may be curative.

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**Editorial Note:** PHC is a leading cause of cancer deaths in much of Asia and Africa. Worldwide, it is estimated that over 150 million chronic carriers of HBV infection—900,000 of whom live in the United States—are at risk for developing PHC (*4*).

In the past, a PHC diagnosis usually followed the onset of symptoms, and the 5-year survival rate approached zero (*5*). Of the various treatments for PHC, only surgical resection has resulted in long-term survival. A recent study from the People's Republic of China demonstrated that surgery in asymptomatic patients with tumors less than 5 cm in diameter can result in improved survival (*6*).

Well-designed prospective studies are needed to evaluate the use of AFP screening in the early detection of PHC. These studies should include measures of sensitivity, specificity, and positive predictive value, as well as an analysis of cost-effectiveness. The preliminary Alaskan experience is promising and will hopefully result in recommendations concerning the use of prospective AFP testing among HBsAg carriers.

While early detection of PHC may improve survival rates, detection is only part of the health-care strategy directed against PHC. Because of the presumed etiologic link between chronic HBV infection and PHC, preventing PHC may be possible by preventing HBV infection. The success of future HBV vaccination programs may well determine the future incidence of PHC.

*References*

1. Heyward WL, Lanier AP, Bender TR, et al. Primary hepatocellular carcinoma in Alaskan Natives, 1969-1979. Int J Cancer 1981;28:47-50.
2. Schreeder MT, Bender TR, McMahon BJ, et al. Prevalence of hepatitis B in selected Alaskan Eskimo villages. Am J Epidemiol 1983;118:543-9.
3. Heyward WL, Lanier AP, Bender TR, et al. Early detection of primary hepatocellular carcinoma by screening for alpha-fetoprotein in high risk families: a case-report. Lancet 1983;II:1161-2.
4. Report of a WHO meeting. Prevention of liver cancer. In: WHO Technical Report Series No. 691, 1983.
5. Moertel CG. The liver. In: Holland JF, Frei E III, eds. Cancer medicine. 2nd edition. Philadelphia: Lea & Febiger, 1982:1774-81.
6. Tang Z-y, Yu Y-q, Lin Z-y, Yang B-h, Zhou X-d, Cao Y-z. Clinical research of primary liver cancer: a 10 year (1970-1979) survey. Chin Med J 1983;96:247-50.

## Results of a Pilot Study of Health Effects due to 2,3,7,8-Tetrachlorodibenzodioxin Contamination — Missouri

In 1971, waste oils containing 2,3,7,8-tetrachlorodibenzodioxin (TCDD) were sprayed on residential, recreational, and work areas in Missouri to control dust. In several of these areas, the extent of environmental contamination did not become apparent until late 1982 and into

*TCDD Contamination — Continued*

1983. Starting in January 1983, the Missouri Division of Health and CDC administered approximately 800 Health Effect Survey screening questionnaires to individuals initially solicited because of potential exposures at residential areas in eastern Missouri. In February, a group of 68 persons considered to have a high probability of exposure (i.e., who lived in, worked at, or recreated at these areas) and a group of 36 persons considered to have no exposure were selected after reviewing these questionnaires. These 104 persons received detailed medical examinations and a series of laboratory tests focused on detecting subclinical effects in key, target-organ systems (i.e., hepatic, dermatologic, immunologic, and neurologic systems).

Comparisons of these two groups produced no consistent indications of increased disease prevalence directly related to the putative exposures; no cases of chloracne, overt porphyria cutanea tarda (PCT)* or precursor conditions of PCT, or soft-tissue sarcomas were seen. An apparent trend of urinary-tract abnormalities was indicated by an increased prevalence of self-reported kidney/urinary problems, a higher proportion of leukocyturia, and a greater prevalence of microscopic hematuria in the group at high risk of exposure. None of the findings from the medical histories or the immune-function assays demonstrated statistically significant differences. There was, however, an indication of an increased prevalence of $T_4/T_8$-cell ratios less than 1.0 in the high-risk group. No significant differences in standard and specialized liver-function test results were detected.

This pilot study of a group of individuals presumed to be at high risk of exposure was intended to provide a perspective on the types and degrees of abnormalities likely to be seen in such TCDD exposures. The results appear negative, but no overall definitive conclusion should be based solely on this initial study. The insights provided need to be examined in more refined epidemiologic studies using different designs and strategies (especially in larger, more homogeneous population groups in which exposure status can be better characterized). These studies should be focused primarily, but not exclusively, on discerning any effects on the immune and neurologic systems and the urinary tract and liver.

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**Editorial Note:** Animal toxicity studies are commonly used to predict health effects in humans (although the existence of species-specific and even organ-specific effects of TCDD make extrapolations tenuous). The organ systems most prominently affected in animals are the liver (acute toxicity and hepatocarcinogenesis), the immune system (thymic atrophy and decreased cell-mediated immunity), and the skin (chloracne-like changes); effects on reproduction have also been noted (*1,2*).

Most direct knowledge of TCDD effects on human health has been obtained from workers exposed to dioxin during the production or subsequent handling of 2,4,5-trichlorophenol (2,4,5-TCP) or 2,4,5-trichlorophenyoxyacetic acid (2,4,5-T) (*3*). In some workplaces, exposed persons had chloracne but no systemic illnesses; other reports have noted that workers fatigued easily and experienced weight loss, myalgias, insomnia, irritability, and decreased libido. The liver has been shown to become tender and enlarged, and sensory changes, particularly in the lower extremities, have been reported. Total serum lipids may be increased, and the prothrombin times may be prolonged (*4*). PCT has also been observed (*5*). The most specific of the dioxin-related findings are chloracne (which can also be caused by other structurally similar compounds, such as polychlorinated biphenyls [PCBs] and chlorinated naphthalenes) and PCT (which also has a variety of potential causes). A number of studies ad-

*An acquired form of porphyria characterized by chronic skin lesions and other symptoms.

*TCDD Contamination — Continued*

dressing the association of TCDD exposures to soft-tissue sarcoma have been conducted in the industrial setting. These include two case-control studies in Sweden in which investigators reported a sixfold increase in the risk of soft-tissue sarcomas among persons exposed to chlorphenols and phenoxy herbicides (*6*).

Information on health effects involving nonoccupational environmental exposure is sparse. In 1976, after an explosion at a Seveso, Italy, chemical plant, chloracne developed in exposed children; some elevated liver-function test results were detected in the exposed population, and the incidence of abnormal nerve conduction tests was reported significantly elevated in subjects with chloracne (*7*). In Missouri, after playing in dirt in a riding arena contaminated with up to 33 parts per million TCDD, a child had hemorrhagic cystitis (*8*).

Public health policy in situations such as this environmental contamination with TCDD must continue to focus on the prevention of any potential health effects (particularly delayed or long-term), even if effects are not demonstrated in a pilot study. For this reason, appropriate efforts to prevent human exposure must continue, in this and other similar situations, until a more complete understanding of public health risks is obtained.

*(Continued on page 61)*

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

| Disease | 5th Week Ending | | | Cumulative, 5th Week Ending | | |
|---|---|---|---|---|---|---|
| | February 4, 1984 | February 5, 1983 | Median 1979-1983 | February 4, 1984 | February 5, 1983 | Median 1979-1983 |
| Acquired Immunodeficiency Syndrome (AIDS) | 51 | N | N | 257 | N | N |
| Aseptic meningitis | 86 | 93 | 59 | 440 | 450 | 369 |
| Encephalitis: Primary (arthropod-borne & unspec.) | 20 | 12 | 12 | 64 | 83 | 78 |
| Post-infectious | - | - | 2 | 3 | 5 | 9 |
| Gonorrhea: Civilian | 14,831 | 17,887 | 19,765 | 78,872 | 91,339 | 92,424 |
| Military | 379 | 427 | 622 | 2,009 | 2,417 | 2,762 |
| Hepatitis: Type A | 443 | 543 | 543 | 1,890 | 2,305 | 2,250 |
| Type B | 474 | 387 | 361 | 1,937 | 1,930 | 1,630 |
| Non A, Non B | 67 | 79 | N | 281 | 269 | N |
| Unspecified | 121 | 149 | 183 | 517 | 677 | 868 |
| Legionellosis | 5 | 11 | N | 31 | 49 | N |
| Leprosy | 1 | 2 | 4 | 15 | 26 | 14 |
| Malaria | 14 | 14 | 14 | 53 | 52 | 57 |
| Measles: Total* | 91 | 3 | 40 | 137 | 40 | 164 |
| Indigenous | 91 | 1 | N | 132 | 28 | N |
| Imported | - | 2 | N | 5 | 12 | N |
| Meningococcal infections: Total | 59 | 56 | 62 | 232 | 266 | 273 |
| Civilian | 59 | 55 | 62 | 232 | 258 | 269 |
| Military | - | 1 | - | - | 8 | 1 |
| Mumps | 60 | 75 | 104 | 291 | 381 | 472 |
| Pertussis | 14 | 30 | 29 | 109 | 90 | 90 |
| Rubella (German measles) | 8 | 23 | 39 | 37 | 72 | 207 |
| Syphilis (Primary & Secondary): Civilian | 592 | 652 | 645 | 2,587 | 3,350 | 2,915 |
| Military | 2 | 6 | 7 | 33 | 51 | 42 |
| Toxic Shock syndrome | 8 | 8 | N | 28 | 43 | N |
| Tuberculosis | 395 | 442 | 471 | 1,585 | 1,726 | 1,943 |
| Tularemia | - | 5 | 2 | 5 | 13 | 11 |
| Typhoid fever | 2 | 4 | 8 | 19 | 30 | 30 |
| Typhus fever, tick-borne (RMSF) | 2 | - | 1 | 6 | 6 | 6 |
| Rabies, animal | 70 | 99 | 95 | 257 | 443 | 422 |

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

| | Cum. 1984 | | Cum. 1984 |
|---|---|---|---|
| Anthrax | - | Plague (Wash. 1) | 1 |
| Botulism: Foodborne | - | Poliomyelitis: Total | - |
| Infant (Calif. 1) | 5 | Paralytic | - |
| Other | 1 | Psittacosis (Upstate N.Y. 2) | 6 |
| Brucellosis (Upstate N.Y. 1, Ohio 1, Mo. 1, Va. 1, Calif. 2) | 11 | Rabies, human | - |
| Cholera | - | Tetanus (Kans. 1, Calif. 1) | 2 |
| Congenital rubella syndrome | - | Trichinosis | 2 |
| Diphtheria | - | Typhus fever, flea-borne (endemic, murine) | 2 |
| Leptospirosis (Ohio 1, Hawaii 1) | 2 | | |

*There were no cases of internationally imported measles reported for this week.

## TABLE III. Cases of specified notifiable diseases, United States, weeks ending February 4, 1984 and February 5, 1983 (Fifth Week)

| Reporting Area | AIDS | Aseptic Meningitis | Encephalitis | | Gonorrhea (Civilian) | | Hepatitis (Viral), by type | | | | Legionellosis | Leprosy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Primary | Post-infectious | | | A | B | NA,NB | Unspecified | | |
| | Cum. 1984 | 1984 | Cum. 1984 | Cum. 1984 | Cum. 1984 | Cum. 1983 | 1984 | 1984 | 1984 | 1984 | 1984 | Cum. 1984 |
| UNITED STATES | 257 | 86 | 64 | 3 | 78,872 | 91,339 | 443 | 474 | 67 | 121 | 5 | 15 |
| NEW ENGLAND | 12 | 2 | 2 | - | 2,641 | 2,239 | 4 | 19 | 1 | 13 | - | 1 |
| Maine | - | - | - | - | 106 | 123 | - | - | - | - | - | - |
| N.H. | - | - | 1 | - | 56 | 72 | 1 | 1 | 1 | - | - | - |
| Vt. | - | - | - | - | 33 | 45 | - | 1 | - | - | - | - |
| Mass. | 5 | 2 | 1 | - | 985 | 979 | 2 | 7 | - | 13 | - | 1 |
| R.I. | - | - | - | - | 134 | 131 | - | - | - | - | - | - |
| Conn. | 7 | - | - | - | 1,327 | 889 | 1 | 10 | - | - | - | - |
| MID ATLANTIC | 134 | 12 | 4 | - | 9,587 | 11,444 | 78 | 85 | 7 | 10 | - | 1 |
| Upstate N.Y. | - | 11 | - | - | 1,421 | 1,418 | 7 | 38 | 3 | - | - | 1 |
| N.Y. City | 121 | - | - | - | 4,116 | 5,044 | 60 | 27 | - | 8 | - | - |
| N.J. | 13 | - | 2 | - | 1,374 | 2,104 | 11 | 20 | 4 | 2 | - | - |
| Pa. | - | 1 | 2 | - | 2,676 | 2,878 | - | - | - | - | - | - |
| E.N. CENTRAL | 8 | 14 | 14 | - | 10,198 | 12,673 | 33 | 55 | 7 | 8 | - | 1 |
| Ohio | 7 | 8 | 4 | - | 2,662 | 3,018 | 20 | 22 | 3 | 6 | - | - |
| Ind. | - | 1 | - | - | 1,607 | 1,521 | 4 | 8 | 1 | 2 | - | - |
| Ill. | - | 1 | 2 | - | 1,530 | 3,360 | 3 | 1 | - | - | - | - |
| Mich. | 1 | 4 | 6 | - | 3,245 | 3,685 | 6 | 24 | 3 | - | - | 1 |
| Wis. | - | - | 2 | - | 1,154 | 1,089 | - | - | - | - | - | - |
| W.N. CENTRAL | 1 | 1 | 2 | - | 3,616 | 4,201 | 6 | 8 | - | 1 | 1 | - |
| Minn. | - | - | - | - | 555 | 697 | 1 | 4 | - | - | - | - |
| Iowa | 1 | 1 | 2 | - | 463 | 475 | 1 | - | - | - | - | - |
| Mo. | - | - | - | - | 1,563 | 1,917 | - | 4 | - | - | 1 | - |
| N. Dak. | - | - | - | - | 39 | 49 | - | - | - | - | - | - |
| S. Dak. | - | - | - | - | 122 | 126 | 1 | - | - | - | - | - |
| Nebr. | - | - | - | - | 270 | 240 | 1 | - | - | 1 | - | - |
| Kans. | - | - | - | - | 604 | 697 | 2 | - | - | - | - | - |
| S. ATLANTIC | 19 | 18 | 18 | 3 | 20,247 | 22,238 | 13 | 80 | 13 | 7 | 3 | 1 |
| Del. | 1 | - | 1 | - | 335 | 530 | - | - | - | - | - | - |
| Md. | 5 | - | 3 | - | 2,867 | 3,239 | 2 | 9 | 1 | 1 | - | - |
| D.C. | 4 | - | - | - | 1,438 | 1,524 | - | 1 | - | 1 | - | - |
| Va. | 2 | - | 6 | 2 | 2,082 | 2,023 | - | - | 2 | 1 | 1 | 1 |
| W. Va. | - | - | 2 | - | 216 | 235 | 1 | 1 | - | - | - | - |
| N.C. | - | 5 | 1 | 1 | 3,091 | 2,827 | 1 | 9 | 3 | 1 | 2 | - |
| S.C. | - | 1 | - | - | 1,879 | 2,316 | - | 13 | - | - | - | - |
| Ga. | - | 7 | 2 | - | 3,968 | 4,062 | 1 | 25 | - | 1 | - | - |
| Fla. | 7 | 5 | 3 | - | 4,371 | 5,482 | 8 | 22 | 7 | 2 | - | - |
| E.S. CENTRAL | - | 4 | 2 | - | 6,559 | 8,145 | 16 | 36 | 4 | - | - | - |
| Ky. | - | 2 | - | - | 866 | 1,017 | 3 | 11 | 3 | - | - | - |
| Tenn. | - | 1 | 1 | - | 2,687 | 2,979 | - | 12 | - | - | - | - |
| Ala. | - | 1 | 1 | - | 2,111 | 2,719 | 11 | 10 | 1 | - | - | - |
| Miss. | - | - | - | - | 895 | 1,430 | 2 | 3 | - | - | - | - |
| W.S. CENTRAL | 1 | 8 | 1 | - | 11,099 | 13,088 | 66 | 31 | - | 52 | - | - |
| Ark. | - | 1 | - | - | 1,020 | 962 | - | - | - | 3 | - | - |
| La. | - | - | - | - | 2,751 | 1,908 | - | - | - | - | - | - |
| Okla. | 1 | 1 | - | - | 1,287 | 1,501 | 8 | 8 | - | 3 | - | - |
| Tex. | - | 6 | 1 | - | 6,041 | 8,717 | 58 | 23 | - | 46 | - | - |
| MOUNTAIN | 4 | 5 | 1 | - | 2,385 | 2,542 | 85 | 32 | 11 | 3 | - | - |
| Mont. | - | - | - | - | 117 | 126 | 2 | 1 | - | - | - | - |
| Idaho | - | - | - | - | 104 | 153 | - | 1 | - | - | - | - |
| Wyo. | - | - | - | - | 63 | 91 | 2 | - | - | - | - | - |
| Colo. | - | 2 | - | - | 604 | 711 | 27 | 2 | 1 | - | - | - |
| N. Mex. | - | - | - | - | 293 | 370 | 13 | 3 | 4 | - | - | - |
| Ariz. | 4 | 1 | - | - | 641 | 524 | 21 | 14 | 4 | 3 | - | - |
| Utah | - | 1 | 1 | - | 136 | 116 | 17 | 4 | - | - | - | - |
| Nev. | - | 1 | - | - | 427 | 451 | 3 | 7 | 2 | - | - | - |
| PACIFIC | 78 | 22 | 20 | - | 12,540 | 14,769 | 142 | 128 | 24 | 27 | 1 | 11 |
| Wash. | - | 2 | - | - | 649 | 893 | 7 | 4 | 2 | - | - | 1 |
| Oreg. | - | - | - | - | 643 | 637 | 20 | 9 | 3 | - | - | - |
| Calif. | 78 | 13 | 20 | - | 10,791 | 12,680 | 114 | 113 | 19 | 27 | 1 | 9 |
| Alaska | - | - | - | - | 275 | 282 | - | - | - | - | - | - |
| Hawaii | - | 7 | - | - | 182 | 277 | 1 | 2 | - | - | - | 1 |
| Guam | - | U | - | - | - | 26 | U | U | U | U | U | - |
| P.R. | - | 2 | - | - | 301 | 326 | 7 | 6 | - | 9 | - | - |
| V.I. | - | - | - | - | 47 | 29 | - | - | - | - | - | - |
| Pac. Trust Terr. | - | U | - | - | - | - | U | U | U | U | U | - |

N: Not notifiable U: Unavailable

## TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending February 4, 1984 and February 5, 1983 (Fifth Week)

| Reporting Area | Malaria | Measles (Rubeola) | | | | | Menin-gococcal Infections | Mumps | | Pertussis | | | Rubella | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Indigenous | | Imported * | | Total | | | | | | | | | |
| | Cum. 1984 | 1984 | Cum. 1984 | 1984 | Cum. 1984 | Cum. 1983 | Cum. 1984 | 1984 | Cum. 1984 | 1984 | Cum. 1984 | Cum. 1983 | 1984 | Cum. 1984 | Cum. 1983 |
| UNITED STATES | 53 | 91 | 132 | - | 5 | 40 | 232 | 60 | 291 | 14 | 109 | 90 | 8 | 37 | 72 |
| NEW ENGLAND | 5 | - | - | - | - | - | 10 | 3 | 8 | - | 1 | 5 | - | 1 | - |
| Maine | - | - | - | - | - | - | - | 1 | 4 | - | - | - | - | - | - |
| N.H. | - | - | - | - | - | - | 1 | - | 1 | - | - | 2 | - | - | - |
| Vt. | - | - | - | - | - | - | 2 | - | - | - | - | 1 | - | - | - |
| Mass. | 4 | - | - | - | - | - | 3 | 2 | 3 | - | - | 1 | - | 1 | - |
| R.I. | - | - | - | - | - | - | 2 | - | - | - | 1 | 1 | - | - | - |
| Conn. | 1 | - | - | - | - | - | 2 | - | - | - | - | - | - | - | - |
| MID ATLANTIC | 2 | - | - | - | - | 1 | 28 | 17 | 55 | 2 | 5 | 17 | - | - | 2 |
| Upstate N.Y. | 1 | - | - | - | - | 1 | 10 | 5 | 11 | 2 | 5 | 8 | - | - | 1 |
| N.Y. City | - | - | - | - | - | - | 1 | - | 1 | - | - | 1 | - | - | 1 |
| N.J. | - | - | - | - | - | - | 6 | 12 | 42 | - | - | 3 | - | - | - |
| Pa. | 1 | - | - | - | - | - | 11 | - | 1 | - | - | 5 | - | - | - |
| E.N. CENTRAL | 6 | 78 | 98 | - | - | 17 | 42 | 22 | 83 | 3 | 14 | 32 | 1 | 4 | 12 |
| Ohio | 3 | - | - | - | - | - | 18 | 10 | 22 | 1 | 5 | 16 | - | - | 1 |
| Ind. | - | - | - | - | - | - | 5 | - | 6 | - | - | 2 | - | - | - |
| Ill. | 1 | - | 20 | - | - | 17 | 6 | 8 | 27 | - | 3 | 9 | 1 | 3 | 2 |
| Mich. | 1 | 78 | 78 | - | - | - | 10 | 3 | 22 | 2 | 3 | 1 | - | 1 | 2 |
| Wis. | 1 | - | - | - | - | - | 3 | 1 | 6 | - | 3 | 4 | - | - | 7 |
| W.N. CENTRAL | 3 | - | - | - | - | - | 22 | 2 | 12 | 3 | 39 | 3 | - | 2 | 6 |
| Minn. | - | - | - | - | - | - | 1 | - | - | - | 2 | - | - | - | 2 |
| Iowa | - | - | - | - | - | - | 9 | - | 1 | - | 3 | 1 | - | - | - |
| Mo. | 2 | - | - | - | - | - | 7 | 1 | 3 | 1 | 1 | 1 | - | - | - |
| N. Dak. | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - |
| S. Dak. | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - |
| Nebr. | - | - | - | - | - | - | 2 | - | 1 | - | - | - | - | - | - |
| Kans. | 1 | - | - | - | - | - | 2 | 1 | 7 | 2 | 33 | 1 | - | 1 | 4 |
| S. ATLANTIC | 9 | - | - | - | - | 2 | 61 | 3 | 20 | - | 13 | 12 | 1 | 2 | 4 |
| Del. | 2 | - | - | - | - | - | 1 | - | 1 | - | - | - | - | - | - |
| Md. | 3 | - | - | - | - | - | 3 | - | 4 | - | 1 | 2 | - | - | - |
| D.C. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Va. | 2 | - | - | - | - | 1 | 6 | - | 1 | - | 4 | 2 | - | - | - |
| W. Va. | - | - | - | - | - | - | 1 | 1 | 4 | - | 2 | 1 | - | - | - |
| N.C. | 1 | - | - | - | - | - | 10 | 1 | 3 | - | 1 | - | - | - | - |
| S.C. | 1 | - | - | - | - | 1 | 8 | - | - | - | - | - | - | - | - |
| Ga. | - | - | - | - | - | - | 14 | 1 | 2 | - | 2 | 7 | 1 | 1 | 1 |
| Fla. | - | - | - | - | - | - | 18 | N | N | - | 3 | - | - | 1 | 3 |
| E.S. CENTRAL | - | - | 1 | - | - | - | 10 | 1 | 6 | - | 2 | - | - | - | 1 |
| Ky. | - | - | - | - | - | - | 3 | - | 3 | - | 1 | - | - | - | 1 |
| Tenn. | - | - | 1 | - | - | - | 3 | - | - | - | 1 | - | - | - | - |
| Ala. | - | - | - | - | - | - | 3 | - | 2 | - | - | - | - | - | - |
| Miss. | - | - | - | - | - | - | 1 | 1 | 1 | - | - | - | - | - | - |
| W.S. CENTRAL | - | 7 | 7 | - | - | - | 16 | 2 | 7 | - | 9 | 9 | 1 | 6 | 9 |
| Ark. | - | - | - | - | - | - | 1 | - | - | - | 8 | 1 | - | 1 | - |
| La. | - | - | - | - | - | - | 2 | - | - | - | - | 1 | - | - | - |
| Okla. | - | - | - | - | - | - | 2 | N | N | - | 1 | 2 | - | - | - |
| Tex. | - | 7 | 7 | - | - | - | 11 | 2 | 7 | - | - | 5 | 1 | 5 | 9 |
| MOUNTAIN | 1 | 2 | 17 | - | - | - | 9 | 3 | 39 | - | 12 | 8 | 1 | 3 | 3 |
| Mont. | - | - | - | - | - | - | 1 | - | 1 | - | 1 | 1 | - | - | - |
| Idaho | - | - | - | - | - | - | - | - | 1 | - | 1 | - | 1 | 1 | - |
| Wyo. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Colo. | - | - | - | - | - | - | 4 | - | - | - | 9 | 3 | - | - | - |
| N. Mex. | - | - | - | - | - | - | 1 | N | N | - | 1 | 3 | - | - | - |
| Ariz. | 1 | - | - | - | - | - | 1 | 2 | 36 | - | - | - | - | - | 1 |
| Utah | - | 2 | 17 | - | - | - | 2 | 1 | 1 | - | - | 1 | - | 2 | 1 |
| Nev. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PACIFIC | 27 | 4 | 9 | - | 5 | 20 | 34 | 7 | 61 | 6 | 14 | 4 | 4 | 19 | 35 |
| Wash. | 2 | 2 | 2 | - | - | - | 2 | - | 12 | 1 | 6 | - | - | - | - |
| Oreg. | 1 | - | - | - | - | - | 8 | N | N | 4 | 4 | - | - | - | - |
| Calif. | 23 | 2 | 7 | - | 3 | 19 | 23 | 6 | 45 | 1 | 4 | 4 | 4 | 19 | 35 |
| Alaska | - | - | - | - | - | - | 1 | - | 3 | - | - | - | - | - | - |
| Hawaii | 1 | - | - | - | 2 | 1 | - | 1 | 1 | - | - | - | - | - | - |
| Guam | - | U | - | U | - | - | - | U | - | U | - | - | U | - | - |
| P.R. | 2 | - | - | - | - | 7 | - | 2 | 15 | - | - | 1 | 1 | 1 | - |
| V.I. | - | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 1 |
| Pac. Trust Terr. | - | U | - | U | - | - | - | U | - | U | - | - | U | - | - |

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

**TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending February 4, 1984 and February 5, 1983 (Fifth Week)**

| Reporting Area | Syphilis (Civilian) (Primary & Secondary) | | Toxic-shock Syndrome | Tuberculosis | | Tula-remia | Typhoid Fever | Typhus Fever (Tick-borne) (RMSF) | Rabies, Animal |
|---|---|---|---|---|---|---|---|---|---|
| | Cum. 1984 | Cum. 1983 | 1984 | Cum. 1984 | Cum. 1983 | Cum. 1984 | Cum. 1984 | Cum. 1984 | Cum. 1984 |
| UNITED STATES | 2,587 | 3,350 | 8 | 1,585 | 1,726 | 5 | 19 | 6 | 257 |
| NEW ENGLAND | 73 | 91 | - | 47 | 31 | - | - | - | 2 |
| Maine | 1 | - | - | 4 | 3 | - | - | - | 2 |
| N.H. | - | 1 | - | 3 | - | - | - | - | - |
| Vt. | - | 1 | - | 1 | - | - | - | - | - |
| Mass. | 46 | 63 | - | 16 | 10 | - | - | - | - |
| R.I. | 3 | 2 | - | 9 | 5 | - | - | - | - |
| Conn. | 23 | 24 | - | 14 | 13 | - | - | - | - |
| MID ATLANTIC | 322 | 365 | - | 307 | 336 | - | 2 | - | 25 |
| Upstate N.Y. | 23 | 26 | - | 47 | 59 | - | 1 | - | 1 |
| N.Y. City | 187 | 218 | - | 131 | 129 | - | - | - | - |
| N.J. | 62 | 66 | - | 74 | 77 | - | 1 | - | - |
| Pa. | 50 | 55 | - | 55 | 71 | - | - | - | 24 |
| E.N. CENTRAL | 93 | 194 | 2 | 207 | 292 | - | 4 | - | 13 |
| Ohio | 29 | 49 | 2 | 49 | 44 | - | 2 | - | 1 |
| Ind. | 21 | 25 | - | 21 | 39 | - | 1 | - | 3 |
| Ill. | 17 | 84 | - | 84 | 147 | - | - | - | 4 |
| Mich. | 17 | 24 | - | 42 | 48 | - | - | - | - |
| Wis. | 9 | 12 | - | 11 | 14 | - | 1 | - | 5 |
| W.N. CENTRAL | 49 | 40 | 2 | 42 | 56 | 2 | - | 1 | 42 |
| Minn. | 12 | 22 | - | 3 | 4 | - | - | - | 6 |
| Iowa | 4 | 2 | 2 | 8 | 10 | - | - | - | 8 |
| Mo. | 26 | 12 | - | 20 | 36 | 2 | - | 1 | 4 |
| N. Dak. | - | - | - | 1 | - | - | - | - | 9 |
| S. Dak. | - | - | - | 1 | 2 | - | - | - | 9 |
| Nebr. | 3 | 1 | - | 5 | 1 | - | - | - | 2 |
| Kans. | 4 | 3 | - | 4 | 3 | - | - | - | 4 |
| S. ATLANTIC | 833 | 861 | - | 371 | 329 | - | 1 | - | 29 |
| Del. | - | 8 | - | 3 | 1 | - | - | - | - |
| Md. | 44 | 49 | - | 56 | 19 | - | - | - | - |
| D.C. | 23 | 44 | - | 8 | 12 | - | - | - | - |
| Va. | 44 | 61 | - | 32 | 21 | - | 1 | - | 16 |
| W. Va. | 5 | 2 | - | 12 | 16 | - | - | - | 2 |
| N.C. | 73 | 88 | - | 62 | 15 | - | - | - | - |
| S.C. | 86 | 68 | - | 51 | 39 | - | - | - | - |
| Ga. | 146 | 148 | - | 42 | 64 | - | - | - | 10 |
| Fla. | 412 | 393 | - | 105 | 142 | - | - | - | 1 |
| E.S. CENTRAL | 169 | 234 | 1 | 144 | 169 | - | 2 | 2 | 13 |
| Ky. | 7 | 15 | 1 | 30 | 46 | - | - | - | 3 |
| Tenn. | 45 | 64 | - | 51 | 53 | - | 2 | 1 | 3 |
| Ala. | 60 | 105 | - | 59 | 52 | - | - | 1 | 7 |
| Miss. | 57 | 50 | - | 4 | 18 | - | - | - | - |
| W.S. CENTRAL | 586 | 828 | 1 | 99 | 134 | - | - | 1 | 83 |
| Ark. | 20 | 9 | 1 | 1 | 4 | - | - | 1 | 8 |
| La. | 134 | 138 | - | 22 | 50 | - | - | - | - |
| Okla. | 13 | 21 | - | 12 | 25 | - | - | - | 6 |
| Tex. | 419 | 660 | - | 64 | 55 | - | - | - | 69 |
| MOUNTAIN | 59 | 68 | 1 | 29 | 56 | 3 | 3 | 2 | 11 |
| Mont. | - | 2 | - | 1 | 6 | - | 2 | 2 | 8 |
| Idaho | 2 | 1 | 1 | 1 | 5 | - | - | - | - |
| Wyo. | 1 | 1 | - | - | 2 | - | - | - | - |
| Colo. | 7 | 11 | - | - | - | - | - | - | - |
| N. Mex. | 8 | 28 | - | 9 | 10 | - | 1 | - | 1 |
| Ariz. | 20 | 14 | - | 16 | 31 | 1 | - | - | 2 |
| Utah | 3 | 3 | - | 1 | - | 2 | - | - | - |
| Nev. | 18 | 8 | - | 1 | 2 | - | - | - | - |
| PACIFIC | 403 | 669 | 1 | 339 | 323 | - | 7 | - | 39 |
| Wash. | 12 | 28 | - | 9 | 15 | - | - | - | - |
| Oreg. | 13 | 7 | - | 13 | 14 | - | - | - | - |
| Calif. | 366 | 625 | 1 | 282 | 270 | - | 7 | - | 38 |
| Alaska | - | 1 | - | 8 | 4 | - | - | - | 1 |
| Hawaii | 12 | 8 | - | 27 | 20 | - | - | - | - |
| Guam | - | - | U | - | - | - | - | - | - |
| P.R. | 91 | 27 | - | 22 | 59 | - | 1 | - | 3 |
| V.I. | 1 | 1 | - | - | - | - | - | - | - |
| Pac Trust Terr. | - | - | U | - | - | - | - | - | - |

U: Unavailable

## TABLE IV. Deaths in 121 U.S. cities,* week ending February 4, 1984 (Fifth Week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I** Total |
|---|---|---|---|---|---|---|---|
| | All Ages | ≥65 | 45-64 | 25-44 | 1-24 | <1 | |
| NEW ENGLAND | 713 | 509 | 135 | 35 | 13 | 20 | 58 |
| Boston, Mass. | 203 | 134 | 40 | 14 | 5 | 9 | 28 |
| Bridgeport, Conn. | 53 | 42 | 8 | 1 | 2 | - | 4 |
| Cambridge, Mass. | 27 | 25 | 1 | - | - | 1 | 1 |
| Fall River, Mass. | 20 | 16 | 4 | - | - | - | - |
| Hartford, Conn. | 57 | 39 | 11 | 5 | 1 | 1 | 7 |
| Lowell, Mass. | 36 | 32 | 3 | 1 | - | - | 2 |
| Lynn, Mass. | 27 | 18 | 6 | 3 | - | - | - |
| New Bedford, Mass. | 17 | 12 | 5 | - | - | - | 1 |
| New Haven, Conn. | 66 | 50 | 12 | 1 | 3 | - | 2 |
| Providence, R.I. | 53 | 33 | 14 | 1 | - | 5 | 1 |
| Somerville, Mass. | 11 | 8 | 3 | - | - | - | - |
| Springfield, Mass. | 54 | 37 | 9 | 3 | 1 | 4 | 3 |
| Waterbury, Conn. | 39 | 30 | 8 | 1 | - | - | 1 |
| Worcester, Mass. | 50 | 33 | 11 | 5 | 1 | - | 8 |
| MID. ATLANTIC | 2,486 | 1,682 | 495 | 201 | 61 | 47 | 131 |
| Albany, N.Y. | 58 | 45 | 9 | - | 2 | 2 | 2 |
| Allentown, Pa. | 28 | 23 | 5 | - | - | - | - |
| Buffalo, N.Y. | 100 | 75 | 17 | 5 | 1 | 2 | 15 |
| Camden, N.J. | 39 | 23 | 9 | 2 | 4 | 1 | 2 |
| Elizabeth, N.J. | 21 | 12 | 6 | 2 | - | 1 | - |
| Erie, Pa.† | 41 | 32 | 7 | 2 | - | - | 5 |
| Jersey City, N.J. | 56 | 29 | 19 | 5 | 1 | 2 | 2 |
| N.Y. City, N.Y. | 1,531 | 1,021 | 313 | 140 | 36 | 21 | 66 |
| Newark, N.J. | 61 | 34 | 12 | 9 | 3 | 3 | 3 |
| Paterson, N.J. | 39 | 27 | 7 | 4 | 1 | - | 5 |
| Philadelphia, Pa.† | 34 | 13 | 7 | 3 | 5 | 6 | 3 |
| Pittsburgh, Pa.† | 78 | 47 | 23 | 3 | 2 | 3 | 4 |
| Reading, Pa. | 46 | 29 | 11 | 5 | 1 | - | 5 |
| Rochester, N.Y. | 115 | 86 | 17 | 7 | 2 | 3 | 7 |
| Schenectady, N.Y. | 31 | 21 | 6 | 3 | - | 1 | 3 |
| Scranton, Pa.† | 36 | 30 | 4 | 2 | - | - | 2 |
| Syracuse, N.Y. | 86 | 66 | 12 | 5 | 1 | 2 | 3 |
| Trenton, N.J. | 30 | 25 | 3 | 1 | 1 | - | - |
| Utica, N.Y. | 23 | 19 | 2 | 1 | 1 | - | 1 |
| Yonkers, N.Y. | 33 | 25 | 6 | 2 | - | - | 3 |
| E.N. CENTRAL | 2,576 | 1,699 | 596 | 142 | 62 | 77 | 118 |
| Akron, Ohio | 82 | 53 | 22 | 2 | 1 | 4 | - |
| Canton, Ohio | 42 | 33 | 7 | 1 | 1 | - | 3 |
| Chicago, Ill | 612 | 364 | 160 | 44 | 24 | 20 | 12 |
| Cincinnati, Ohio | 295 | 200 | 60 | 19 | 7 | 9 | 41 |
| Cleveland, Ohio | 162 | 99 | 41 | 12 | 3 | 7 | 2 |
| Columbus, Ohio | 177 | 118 | 44 | 10 | 2 | 3 | 5 |
| Dayton, Ohio | 125 | 81 | 36 | 6 | - | 2 | 3 |
| Detroit, Mich. | 259 | 166 | 62 | 17 | 8 | 6 | 11 |
| Evansville, Ind. | 54 | 40 | 11 | 1 | 2 | - | 3 |
| Fort Wayne, Ind. | 40 | 32 | 6 | - | 1 | 1 | 4 |
| Gary, Ind. | 24 | 9 | 11 | 2 | 1 | 1 | - |
| Grand Rapids, Mich. | 46 | 35 | 6 | 3 | 1 | 1 | - |
| Indianapolis, Ind. | 163 | 112 | 36 | 7 | 2 | 6 | 3 |
| Madison, Wis. | 46 | 35 | 8 | 1 | 1 | 1 | 6 |
| Milwaukee, Wis. | 140 | 96 | 27 | 8 | 1 | 8 | 5 |
| Peoria, Ill. | 37 | 22 | 10 | 1 | 1 | 3 | 2 |
| Rockford, Ill. | 52 | 40 | 10 | 2 | - | - | 5 |
| South Bend, Ind. | 64 | 49 | 10 | 3 | 2 | - | 5 |
| Toledo, Ohio | 90 | 68 | 17 | 1 | 2 | 2 | 7 |
| Youngstown, Ohio | 66 | 47 | 12 | 2 | 2 | 3 | 1 |
| W.N. CENTRAL | 719 | 490 | 146 | 31 | 14 | 38 | 39 |
| Des Moines, Iowa | 58 | 44 | 10 | 2 | 2 | - | 8 |
| Duluth, Minn. | 38 | 32 | 3 | 1 | - | 2 | 3 |
| Kansas City, Kans. | 30 | 17 | 9 | 1 | 1 | 2 | 3 |
| Kansas City, Mo. | 110 | 70 | 29 | - | 2 | 9 | 5 |
| Lincoln, Nebr. | 38 | 30 | 7 | - | - | 1 | 3 |
| Minneapolis, Minn. | 102 | 63 | 18 | 13 | 2 | 6 | 1 |
| Omaha, Nebr. | 81 | 51 | 18 | 2 | 3 | 7 | 3 |
| St. Louis, Mo. | 144 | 98 | 32 | 6 | 3 | 5 | 6 |
| St. Paul, Minn. | 52 | 37 | 12 | 2 | - | 1 | 1 |
| Wichita, Kans. | 66 | 48 | 8 | 4 | 1 | 5 | 6 |
| S. ATLANTIC | 1,438 | 891 | 334 | 106 | 40 | 67 | 55 |
| Atlanta, Ga. | 174 | 96 | 47 | 18 | 4 | 9 | 3 |
| Baltimore, Md. | 240 | 145 | 64 | 14 | 9 | 8 | 4 |
| Charlotte, N.C. | 88 | 52 | 22 | 6 | 3 | 5 | 4 |
| Jacksonville, Fla. | 116 | 73 | 28 | 7 | 4 | 4 | 9 |
| Miami, Fla. | 131 | 78 | 26 | 18 | 4 | 5 | - |
| Norfolk, Va. | 51 | 29 | 13 | 1 | 6 | 2 | 1 |
| Richmond, Va. | 70 | 38 | 22 | 7 | - | 3 | 6 |
| Savannah, Ga. | 40 | 30 | 7 | 2 | - | 1 | 5 |
| St. Petersburg, Fla. | 137 | 118 | 13 | 5 | - | 1 | 2 |
| Tampa, Fla. | 100 | 63 | 22 | 8 | 1 | 6 | 5 |
| Washington, D.C. | 215 | 119 | 52 | 17 | 8 | 19 | 9 |
| Wilmington, Del. | 76 | 50 | 18 | 3 | 1 | 4 | 7 |
| E.S. CENTRAL | 872 | 598 | 169 | 51 | 22 | 29 | 41 |
| Birmingham, Ala. | 124 | 85 | 25 | 6 | 2 | 6 | 2 |
| Chattanooga, Tenn. | 64 | 52 | 8 | 2 | 1 | 1 | 7 |
| Knoxville, Tenn. § | 87 | 81 | - | 1 | 2 | 1 | 5 |
| Louisville, Ky. | 96 | 60 | 23 | 8 | 4 | 1 | 4 |
| Memphis, Tenn. | 249 | 166 | 48 | 19 | 10 | 5 | 11 |
| Mobile, Ala. | 57 | 37 | 15 | 5 | - | - | 1 |
| Montgomery, Ala. | 62 | 35 | 17 | 2 | 2 | 6 | 4 |
| Nashville, Tenn. | 133 | 82 | 33 | 8 | 1 | 9 | 7 |
| W.S. CENTRAL | 1,177 | 736 | 276 | 77 | 34 | 54 | 77 |
| Austin, Tex. | 65 | 47 | 10 | 4 | 1 | 3 | 8 |
| Baton Rouge, La. | 81 | 57 | 15 | 5 | 1 | 3 | 12 |
| Corpus Christi, Tex. | 45 | 29 | 14 | 1 | - | 1 | - |
| Dallas, Tex. | 215 | 127 | 52 | 23 | 5 | 8 | 4 |
| El Paso, Tex. | 37 | 24 | 8 | 1 | 2 | 2 | 1 |
| Fort Worth, Tex. | 110 | 68 | 29 | 5 | 4 | 4 | 13 |
| Houston, Tex. | 50 | 26 | 11 | 4 | 3 | 6 | 3 |
| Little Rock, Ark. | 93 | 62 | 22 | 5 | 1 | 3 | 10 |
| New Orleans, La. | 96 | 52 | 27 | 10 | 2 | 5 | - |
| San Antonio, Tex. | 217 | 132 | 50 | 9 | 11 | 15 | 14 |
| Shreveport, La. | 68 | 42 | 18 | 4 | 1 | 3 | 4 |
| Tulsa, Okla. | 100 | 70 | 20 | 6 | 3 | 1 | 8 |
| MOUNTAIN | 679 | 435 | 141 | 45 | 30 | 28 | 37 |
| Albuquerque, N.Mex. | 68 | 46 | 13 | 4 | 2 | 3 | 7 |
| Colo. Springs, Colo. | 32 | 23 | 6 | 3 | - | - | 7 |
| Denver, Colo. | 125 | 76 | 26 | 6 | 9 | 8 | 4 |
| Las Vegas, Nev. | 90 | 53 | 16 | 9 | 9 | 3 | 3 |
| Ogden, Utah | 30 | 23 | 3 | 2 | 1 | 1 | 5 |
| Phoenix, Ariz. | 162 | 103 | 39 | 12 | 4 | 4 | - |
| Pueblo, Colo. | 26 | 19 | 3 | 4 | - | - | 1 |
| Salt Lake City, Utah | 48 | 23 | 13 | 2 | 3 | 7 | 2 |
| Tucson, Ariz. | 98 | 69 | 22 | 3 | 2 | 2 | 8 |
| PACIFIC | 1,874 | 1,223 | 404 | 136 | 53 | 56 | 103 |
| Berkeley, Calif. | 14 | 11 | 2 | 1 | - | - | - |
| Fresno, Calif. | 96 | 63 | 21 | 5 | 4 | 3 | 7 |
| Glendale, Calif. | 35 | 27 | 6 | 2 | - | - | 3 |
| Honolulu, Hawaii | 62 | 43 | 12 | 4 | 1 | 2 | 4 |
| Long Beach, Calif. | 93 | 60 | 24 | 2 | 2 | 5 | 2 |
| Los Angeles, Calif. | 504 | 335 | 102 | 32 | 22 | 11 | 21 |
| Oakland, Calif. | 69 | 49 | 13 | 6 | - | 1 | 5 |
| Pasadena, Calif. | 36 | 26 | 6 | 1 | 1 | 2 | - |
| Portland, Oreg. | 125 | 87 | 24 | 6 | 3 | 5 | 5 |
| Sacramento, Calif. | 77 | 52 | 15 | 7 | 1 | 2 | 5 |
| San Diego, Calif. | 156 | 90 | 39 | 12 | 5 | 10 | 16 |
| San Francisco, Calif. | 178 | 103 | 48 | 22 | 1 | 4 | 6 |
| San Jose, Calif. | 166 | 106 | 43 | 9 | 4 | 4 | 12 |
| Seattle, Wash. | 139 | 89 | 25 | 19 | 4 | 2 | 4 |
| Spokane, Wash. | 57 | 42 | 7 | 3 | 3 | 2 | 6 |
| Tacoma, Wash. | 67 | 40 | 17 | 5 | 2 | 3 | 7 |
| TOTAL | 12,534†† | 8,263 | 2,696 | 824 | 329 | 416 | 659 |

* 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.

§ Data not available. Figures are estimates based on average of past 4 weeks.

*TCDD Contamination — Continued*

*References*

1. Gupta BN, Vos JG, Moore JA, Zinkl JG, Bullock BC. Pathologic effects of 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin in laboratory animals. Environ Hlth Per 1973;5:125-40.
2. Kociba RJ, Keyes DG, Beyer JE, et al. Results of a two-year chronic toxicity and oncogenicity study of 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin in rats. Toxicol Appl Pharmacol 1978;46:279-303.
3. Kimbrough RD, ed. Topics in environmental health. Volume 4. Halogenated biphenyls, terphenyls, naphthalenes, dibenzodioxins and related products. Amsterdam, The Netherlands: Elsevier/North Holland Biomedical Press, 1980.
4. Jensen NE, Walker AE. Chloracne: three cases. Proc R Soc Med 1972;65:687-8.
5. Poland AP, Smith D, Metter G, Possick P. A health survey of workers in a 2,4-D and 2,4,5-T plant with special attention to chloracne, porphyria cutanea tarda, and psychologic parameters. Arch Environ Health 1971;22:316-27.
6. Eriksson M, Hardell L, Berg NO, Moller T, Axelson O. Soft-tissue sarcomas and exposure to chemical substances: a case-referent study. Br J Ind Med 1981;38:27-33.
7. Reggiani G. Acute human exposure to TCDD in Seveso, Italy. J Toxicol Environ Health 1980;6:27-43.
8. Carter CD, Kimbrough RD, Liddle JA, et al. Tetrachlorodibenzodioxin: an accidental poisoning episode in horse arenas. Science 1975;188:738-40.

## *Current Trends*

### Measles Surveillance — Canada

A provisional total of 915 measles cases was reported in Canada for 1983. This appears to be the lowest incidence reported since national reporting of measles began in 1924. However, complete data are available only through 1982.

In 1982, 1,064 cases of measles were reported in Canada, a rate of 4.3 cases per 100,000 population. Compared with 1981 and 1980, this reflects a 55% and a 92% reduction, respectively, and a 99% reduction compared with the 10-year prevaccine period 1949-1958 (Figure 1).

All provinces except Prince Edward Island reported measles cases in 1982. Although Ontario accounted for the largest proportion of cases (48%), it reported a 41% reduction in incidence rate compared with 1981.

The age distribution of measles patients in 1982 was available for all provinces except Ontario, for which data were available from January to June 1982. Children under 1 year of age accounted for 19% of cases; under 5 years, 27%; and under 10 years, 75%. The highest rate (43 cases per 100,000 persons) occurred among infants, followed by preschoolers (1-4 years), with a rate of 15.1 per 100,000 persons. In Ontario, 21% of children were less than 5 years old; school-aged children (5-19 years) accounted for 73% of 224 cases.

All provinces are attempting to eliminate measles either by compulsory vaccination at school entry or by voluntary approaches, and some have reported that up to 95% of children are now immunized by the time they reach school age. New Brunswick and Ontario (representing 39% of Canada's population) introduced legislation in 1981 and 1982, respectively, making immunization against measles and five other diseases (diphtheria, tetanus, pertussis, polio, and rubella) compulsory for school attendance.

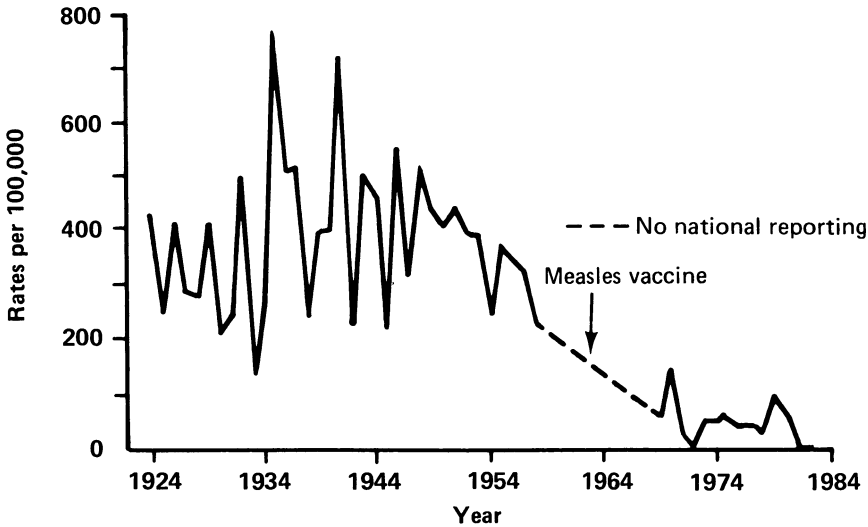
*Reported by Health and Welfare, Canada;* Weekly Epidemiological Record *1983;58:331-2, World Health Organization; Div of Immunization, Center for Prevention Svcs, CDC.*

*Measles Surveillance — Continued*

**Editorial Note:** This report suggests that improved immunization coverage may be one reason for the low level of measles activity recorded from 1981 to 1983. Use of a more stringent case definition and a growing tendency to report only laboratory-confirmed cases also may have reduced the number of reported cases. Moreover, measles has been characterized by 2- to 3-year epidemic cycles, and 1981-1983 could be a low period.

Nevertheless, these data show remarkable progress in controlling measles in Canada. Like the United States, Canada has achieved a record low measles incidence rate because of a national commitment to achieve and maintain high immunization levels against the vaccine-preventable diseases of childhood. Continued efforts in both countries are expected to eliminate indigenous measles in both populations.

**FIGURE 1. Reported measles incidence — Canada, 1924-1982**




## Update: Influenza — United States, through February 8, 1984

Influenza virus type A(H1N1) continues to be the most frequently reported isolate in the United States, with outbreaks in schools and colleges. Similar outbreaks in school-aged populations in Oregon, where type A(H1N1) virus has not been isolated, have been reported in association with type B virus isolates.

Thus far in the 1983-1984 season, isolates of type A(H1N1) virus have been reported from the District of Columbia and 26 states: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Iowa, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nevada, New Mexico, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Texas, and Wisconsin, with associated outbreaks reported from Arizona, Arkansas, California, the District of Columbia, Georgia, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, New Mexico, New York, North Carolina, South Carolina, and Wisconsin. Isolates of type B virus have been reported from 19 states: Alaska, Arizona, California, Colorado, Hawaii, Illinois, Minnesota, Montana, Nevada, New Mexico, New

*Influenza – Continued*

York, Oklahoma, Oregon, Tennessee, Texas, Utah, Washington, West Virginia, and Wisconsin, with associated outbreaks reported from Minnesota and Oregon. Isolates of type A(H3N2) virus have been reported from Alaska, Arizona, New Mexico, Pennsylvania, and Tennessee; associated outbreaks were reported from Alaska at the end of 1983.

*Reported by D Coulter, D McNeill, L Foster, MD, Oregon Health Div; Respective State Epidemiologists and Laboratory Directors; Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.*

## *Notice to Readers*

## Corrected Cumulative 1983 Totals for Tables I and II

Tables I and II for week 52, 1983, are reprinted below. Data reported by Arizona and California are included, and these tables can be used as the 1983 provisional notifiable-disease totals, pending publication of the 1983 *Annual Summary.*

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

| Disease | 52nd Week Ending | | | Cumulative, 52nd Week Ending | | |
|---|---|---|---|---|---|---|
| | December 31, 1983 | January 1, 1983 | Median 1978-1982 | December 31, 1983 | January 1, 1983 | Median 1978-1982 |
| Aseptic meningitis | 121 | 209 | 163 | 11,754 | 9,733 | 8,505 |
| Encephalitis: Primary (arthropod-borne & unspec.) | 21 | 72 | 23 | 1,709 | 1,634 | 1,198 |
| Post-infectious | - | 3 | 3 | 70 | 82 | 214 |
| Gonorrhea: Civilian | 12,774 | 14,292 | 14,292 | 891,504 | 955,324 | 999,638 |
| Military | 238 | 404 | 404 | 23,613 | 25,550 | 26,477 |
| Hepatitis: Type A | 322 | 782 | 780 | 21,692 | 23,364 | 28,393 |
| Type B | 395 | 737 | 586 | 22,801 | 22,326 | 18,479 |
| Non A, Non B | 53 | 86 | N | 3,353 | 2,544 | N |
| Unspecified | 109 | 243 | 255 | 7,617 | 8,743 | 10,666 |
| Legionellosis | 6 | 48 | N | 704 | 689 | N |
| Leprosy | 9 | 8 | 6 | 241 | 238 | 220 |
| Malaria | 14 | 22 | 22 | 771 | 1,041 | 1,041 |
| Measles: Total* | - | 48 | 55 | 1,436 | 1,728 | 13,385 |
| Indigenous | - | N | N | 1,136 | N | N |
| Imported | - | N | N | 300 | N | N |
| Meningococcal infections: Total | 37 | 86 | 80 | 2,691 | 3,037 | 2,715 |
| Civilian | 37 | 85 | 80 | 2,675 | 3,022 | 2,696 |
| Military | - | 1 | 1 | 16 | 15 | 19 |
| Mumps | 53 | 102 | 239 | 3,297 | 5,310 | 8,449 |
| Pertussis | 48 | 118 | 32 | 2,261 | 1,882 | 1,660 |
| Rubella (German measles) | 10 | 27 | 32 | 954 | 2,308 | 3,819 |
| Syphilis (Primary & Secondary): Civilian | 569 | 459 | 441 | 32,163 | 32,746 | 27,259 |
| Military | 7 | 5 | 5 | 386 | 429 | 322 |
| Toxic Shock syndrome | 13 | N | N | 395 | N | N |
| Tuberculosis | 384 | 681 | 800 | 23,532 | 25,796 | 27,524 |
| Tularemia | 5 | 16 | 6 | 316 | 271 | 235 |
| Typhoid fever | 21 | 27 | 7 | 458 | 420 | 517 |
| Typhus fever, tick-borne (RMSF) | 1 | 11 | 11 | 1,126 | 971 | 1,066 |
| Rabies, animal | 22 | 113 | 85 | 5,733 | 6,171 | 6,171 |

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

| | Cum. 1983 | | Cum. 1983 |
|---|---|---|---|
| Anthrax | - | Plague (Colo. 1) | 40 |
| Botulism: Foodborne | 20 | Poliomyelitis: Total | 8 |
| Infant (Calif. 2) | 72 | Paralytic | 8 |
| Other | 3 | Psittacosis (Calif. 1) | 119 |
| Brucellosis (Iowa 1) | 183 | Rabies, human | 2 |
| Cholera | 1 | Tetanus (Minn. 1, Calif. 2) | 77 |
| Congenital rubella syndrome | 20 | Trichinosis (Mo. 1) | 33 |
| Diphtheria | 5 | Typhus fever, flea-borne (endemic, murine) (Calif. 1) | 48 |
| Leptospirosis (Fla. 1) | 46 | | |

*There were no cases of internationally imported measles reported for this week.

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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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