CENTERS FOR DISEASE CONTROL

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*Epidemiologic Notes and Reports*

## Update: *Salmonella enteritidis* Infections and Shell Eggs – United States, 1990

From January through October 1990, state health departments reported 49 outbreaks of *Salmonella enteritidis* (SE) in the United States to CDC. This report summarizes three SE outbreaks in 1990 that were associated with shell eggs.

**Cook County, Illinois.** During October 1–3, at least 435 (23%) of 1900 persons from 30 states who attended a convention banquet in Chicago on September 30 became ill with gastroenteritis and sought medical treatment. Of the 435 ill persons, 147 (34%) were hospitalized. Cultures from 245 persons yielded SE; of five isolates tested for phage type, all were type 8.

The Chicago Department of Health obtained case histories from 92 ill and 55 well persons who attended the banquet; bread pudding with vanilla sauce was implicated as the most likely vehicle for SE. Of the 92 ill persons, 89 (97%) ate the pudding, compared with 24 (44%) of the 55 well persons (odds ratio = 38.3; 95% confidence interval [CI] = 10.0–173.0); no other foods were associated with illness. The implicated dessert was prepared with grade AA shell eggs and may have been undercooked. In addition, the dessert was left at room temperature for 1–4 hours between cooking and serving.

The eggs were traced to one farm, and SE was isolated from environmental samples of all six chicken houses tested. The sale of fresh eggs from this farm has been restricted, and all eggs from these six houses are being pasteurized.

**Fayette County, Kentucky.** In August 1990, 42 (65%) of 65 persons became ill with gastroenteritis following a restaurant brunch for a wedding party on August 11. Twenty-three ill persons sought medical care; four were hospitalized. The median incubation period was 28 hours. Stool cultures from seven patients yielded SE; all five SE isolates tested were phage type 8.

Eating eggs benedict with hollandaise sauce was the only food exposure statistically associated with illness. Of 45 persons who ate this food, 38 (84%) became ill, compared with three (23%) of 13 who did not (relative risk = 3.7; 95% CI = 1.4–10.0).

Salmonella enteritidis *Infection — Continued*

Review of foodhandling practices at the restaurant indicated that eggs used in the hollandaise had been pooled, incompletely cooked, and served >1 hour after preparation.

The eggs were traced to a large midwestern farm. Cultures of environmental specimens from chicken houses on the farm yielded SE, phage type 8. The sale of fresh eggs from this farm has been restricted, and all eggs from chicken houses with positive environmental cultures are being pasteurized.

**Cocke County, Tennessee.** In late October 1990, six members of two east Tennessee families (A and B) had onset of abdominal cramps and diarrhea; three were febrile, and three required hospitalization. Stool cultures obtained from four of these persons yielded SE. The only exposure common to both families was homemade banana pudding (containing eight shell egg yolks) with a meringue topping (containing eight shell egg whites) prepared by a member of family A on October 25. The pudding was heated for 30 minutes, and the meringue was briefly broiled. All three members of family A ate a portion of the pudding on October 25 and subsequently developed gastrointestinal symptoms (mean incubation period: 30 hours); none required hospitalization.

The pudding was kept refrigerated except for the 1-hour drive to the home of family B. The three members of family B ate the pudding on October 29 and 30; however, their illnesses were more severe than those of persons in family A, their incubation periods were shorter (mean incubation period: 13 hours), and all three required hospitalization. The eggs were traced to a large midwestern farm. An investigation of the farm is pending.

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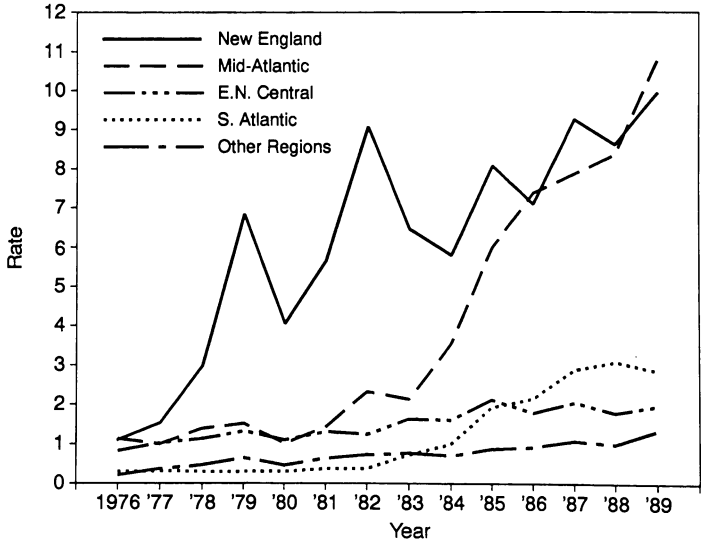
**Editorial Note:** From 1976 through 1989, isolation rates of SE increased in general in the United States (Figure 1). In 1989, the 8340 SE isolates reported through the *Salmonella* Surveillance System represented 20% of all reported *Salmonella* isolates. SE is the second most frequently reported *Salmonella* serotype. In 1989, 8549 *S. typhimurium* isolates were reported; historically, this has been the most frequently reported serotype, accounting for 21% of isolates in 1989.

During 1985–1989, state and territorial health departments reported 244 SE outbreaks, which accounted for 8607 cases of illness, 1094 hospitalizations, and 44 deaths (Table 1). Of the 109 outbreaks in which a food vehicle was identified, 89 (82%) were associated with shell eggs. From January through October in both 1989 and 1990, 49 outbreaks were reported (*1*). Four (8%) of the 49 outbreaks reported in 1990 occurred in hospitals or nursing homes, compared with 20 (26%) of 77 outbreaks in 1989. The decrease in hospital- and nursing home-associated SE outbreaks may reflect efforts to improve food safety in these settings (in particular, using pasteurized eggs). Although infections with SE first emerged as a public health problem in the New England and mid-Atlantic regions, 22 (45%) of the 49 outbreaks reported in 1990 occurred outside these areas.

Salmonella enteritidis *Infection — Continued*

In January 1990, five states began electronic transmission of laboratory-based *Salmonella* surveillance data to CDC using the Public Health Laboratory Information System (PHLIS). This system will replace the current method of transmitting laboratory-based surveillance data by mail, thereby facilitating timely epidemiologic analysis and dissemination of these data. From January through June 1990, these five states reported 1517 isolates of *Salmonella* through the PHLIS, of which 334 (22%) were SE. During this period in 1989, these states reported 1721 isolates of *Salmonella* to the *Salmonella* Surveillance System, of which 439 (26%) were SE. In addition to the outbreak surveillance reports, the preliminary reports of isolates are consistent

**FIGURE 1. Isolation rate* of *Salmonella enteritidis*, by region — United States, 1976–1989**




*Per 100,000 population.

**TABLE 1. Number of reported outbreaks and associated cases and deaths caused by *Salmonella enteritidis*, by year — United States, 1985–1990**

| Year | Outbreaks | Cases | Deaths |
|---|---|---|---|
| 1985 | 26 | 1,166 | 1 |
| 1986 | 48 | 1,539 | 6 |
| 1987 | 53 | 2,498 | 15 |
| 1988 | 40 | 1,010 | 8 |
| 1989 | 77 | 2,394 | 14 |
| 1990* | 49 | 1,646 | 2 |
| **Total** | **293** | **10,253** | **46** |

*Through October 31.

Salmonella enteritidis *Infection — Continued*

with minimal changes in the occurrence of SE infection in 1989 and 1990; this pattern could reflect either secular variation in the epidemic or the possible effects of control measures.

Most cases of SE infection occur as sporadic cases or in limited family outbreaks, such as the Tennessee outbreak reported here, and not as part of large common-source outbreaks. Many of these sporadic cases and limited outbreaks may be associated with consumption of contaminated eggs that have been insufficiently cooked to kill *Salmonella*. Therefore, the occurrence of infections acquired by eating foods prepared in the kitchens of private homes might be reduced by improved education of consumers regarding the risks of eating raw or undercooked eggs and by increased availability of pasteurized eggs. To reduce the risk for SE infection in other settings, such as nursing homes and hospitals, pasteurized egg products should be used in recipes that call for undercooking or pooling of eggs. Similarly, commercial food service establishments can reduce the risk of outbreaks by using pasteurized egg products in such recipes.

An estimated 0.01% (i.e., one in 10,000) of shell eggs contain SE. Consequently, foods containing raw or undercooked eggs (e.g., homemade eggnog, hollandaise sauce, and caesar salad dressing) pose an occasional risk of infection with SE. The likelihood of serious morbidity or death as a result of infection with SE is greatest among very young, elderly, or immunocompromised persons; these persons should be especially careful not to eat foods containing raw or undercooked eggs. Commercial eggnog is made with pasteurized eggs and is safe.

To address the public health problem of SE, two major control measures have recently been implemented. First, on February 16, 1990, the U.S. Department of Agriculture (USDA) began investigating layer flocks of hens that are epidemiologically implicated in outbreaks of human illness (*2*). Interstate movement of eggs from flocks found to be infected with SE (by culture from chickens' internal organs) is restricted, and eggs are diverted to pasteurization plants or the flock is destroyed. Second, in August 1990, the Food and Drug Administration revised the Model Retail Food Safety codes to include eggs as a potentially hazardous food (*3*). The revised code recommends that eggs (which had previously been exempt from federal time and temperature regulations that applied to other foods of animal origin) be refrigerated during storage. In addition, food service establishments are advised not to serve raw or undercooked eggs, to substitute pasteurized eggs for pooled eggs when possible, and to serve pooled eggs immediately after cooking.

To help characterize sporadic cases and to assist in epidemiologic investigations, *Salmonella* isolates should be serotyped by state public health laboratories. Clinicians and microbiologists are encouraged to report cases of *Salmonella* infection to state and local health departments. When SE outbreaks occur, notification of CDC and the USDA through state health departments will promote identification of contaminated eggs and implementation of control measures.

*References*

1. CDC. Update: *Salmonella enteritidis* infections and grade A shell eggs — United States, 1989. MMWR 1990;38:877–80.
2. US Department of Agriculture. Rules and regulations: poultry infected by *Salmonella enteritidis*. Federal Register 1990;55;5576–84.
3. Food and Drug Administration. Retail food protection information manual. Rockville, Maryland: US Department of Health and Human Services, Food and Drug Administration, 1990:1–8.

*International Notes*

## Influenza Surveillance – Wales, 1988–89

Important functions of influenza surveillance include early detection of epidemics—enabling immunization of persons not previously covered by routine immunization programs, notification of health providers to prepare for the possible impact on clinical workloads and hospital admissions, and characterization of prevalent strains to permit the timely production of appropriate vaccines. In 1986, a general-practice–based surveillance system was established in Wales to facilitate reporting of infectious diseases, including influenza and influenza-like illnesses. This report summarizes influenza surveillance findings in Wales for 1988 and 1989.

The surveillance system in Wales includes 34 practices with 138 doctors, representing >240,000 patients (8% of the country's population). The age distribution of the practice population closely resembles that of the total Welsh population. Influenza-like illness (ILI) is defined as an illness that includes all the following manifestations: upper respiratory tract symptoms, fever, chills, myalgia, and cough. Each week, each practice reports the number of patients with ILI by age and sex to the Public Health Laboratory Service Communicable Disease Surveillance Centre, Welsh Unit; data are then summarized and disseminated in a weekly surveillance bulletin. Reports of increasing ILI prompt field sampling and assessment of laboratory isolations of influenza viruses.

During 1988 and 1989, the surveillance system detected an influenza B outbreak in March 1988, a predominantly influenza A(H1N1) outbreak in December 1988–January 1989, and an influenza A(H3N2) outbreak in November–December 1989.

Following the outbreak in December 1988–January 1989, the sensitivity of the reporting system was evaluated. A questionnaire was mailed to a random sample of 1344 patients aged <35 years in 10 reporting practices in South Wales; 878 (65%) persons responded. Of the 878 respondents, 240 (27%) reported an ILI that met the case definition during the outbreak period, and 103 of these reported that they had visited their doctor. Underreporting of physician contacts for ILI appeared to be substantial: based on actual reports, the cumulative rate for persons <35 years of age in these practices was 80 per 10,000; however, based on the survey findings, a rate of 1173 per 10,000 would have been expected if all patient contacts had been reported.

The outbreak in November–December 1989 was the first major influenza A(H3N2) activity identified since 1975–76; consequently, children <15 years of age were highly susceptible. During this outbreak, reports of ILI increased during the third week of October, and physicians were asked to submit throat swabs from suspected case-patients. The following week, the first influenza A virus isolation of the season (A[H3N2]) was reported from the North of England. In the second week of November, outbreaks of influenza were reported by four practices, and one influenza A virus isolate was obtained. The following week, 12 influenza A(H3N2) isolates were obtained from patients in one practice in West Glamorgan. By December 12, 1989, the four public health laboratories in Wales had isolated 23 influenza A strains from 144 nose or throat swabs and six strains from 73 nasopharyngeal aspirates. All isolates resembled the influenza A/England/427/88 subtype first detected in 1988–89 and were similar to the antigen contained in the vaccine used in 1989 (*1*).

*Influenza Surveillance — Continued*

In some practices, the number of visits and house calls for ILI was so high that the total number of cases could not be accurately recorded; thus, the data are probably an underestimation of the incidence of diagnoses made by general practitioners. Based on surveillance, the outbreak began in southwestern Wales and spread radially throughout Wales; the outbreak in West Glamorgan occurred 3 weeks before reporting increased in Gwent and North Wales. The cumulative age-specific incidence was highest in young children. By the reporting week ending December 20 (the week school terms ended in Wales), the rates had declined substantially in all areas.

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**Editorial Note**: The potential advantages of general-practice–based sentinel surveillance systems have been recognized in both Europe and the United States (*2–4*). This report on the experience in Wales illustrates how a surveillance system can provide early warning of influenza epidemics. In the United States, sentinel reporting from family physicians has complemented reporting from viral diagnostic laboratories, state and territorial health departments, and approximately 121 U.S. city vital records offices. The sentinel physician system provides information on the clinical impact of influenza and, because of the rapidity of reporting, provides the earliest indication of increased influenza in the United States.

Evaluation of the surveillance system in Wales included assessment of completeness of reporting and the relationship between reporting rates and population incidence. The evaluation findings suggested that only about 10% of patient contacts were reported by the general-practitioner–based system and that 43% of persons with ILI did not seek medical care. Although the reports provided an indication of the occurrence of an epidemic, they did not represent population incidence.

The November–December 1989 epidemic evolved over 7 weeks. Because of surveillance findings and notification, some health authorities had 2–3 weeks warning of the epidemic and sufficient time to implement appropriate public health measures (e.g., immunization of high-risk persons, antiviral prophylaxis, and increased staffing of patient-care facilities) to decrease the impact of the epidemic.

*References*

1. Public Health Laboratory Service Communicable Disease Surveillance Centre. Influenza surveillance in England and Wales, November 1989–May 1990. Communicable Disease Report, 90/22.
2. CDC. Surveillance of influenza-like diseases through a national computer network—France, 1984–1989. MMWR 1989;38:855–7.
3. Schaffner W, Scott HD, Rosenstein BJ, Byrne EB. Innovative communicable disease reporting. Health Services and Mental Health Administration Reports 1971;86:431–6.
4. Dodson DR. Sentinal active surveillance system. Missouri Epidemiologist 1989;(July):1–2.

*Current Trends*

## Human T-Lymphotropic Virus Type I Screening in Volunteer Blood Donors — United States, 1989

On November 29, 1988, the Food and Drug Administration (FDA) issued recommendations to screen all whole blood donations in the United States for human T-lymphotropic virus type I (HTLV-I) (*1*). This report summarizes results of the first 13 months of screening (December 1988 through December 1989) by the American Red Cross (ARC) and the Council of Community Blood Centers (CCBC).

HTLV-I was the first human retrovirus discovered. The virus is endemic primarily in southwestern Japan and the Caribbean but also is endemic in parts of sub-Saharan Africa and Central and South America (*2*). HTLV-I is transmitted by blood transfusion and contaminated needles, by sexual contact, and from mother to child through breastfeeding. The virus is associated with two diseases: a hematologic malignancy known as adult T-cell leukemia/lymphoma and a degenerative neurologic disease named HTLV-I–associated myelopathy or tropical spastic paraparesis (*2*). The latter disease has been associated with blood transfusion (*3*).

Human T-lymphotropic virus type II (HTLV-II), the second human retrovirus discovered, is closely related to HTLV-I and is presumably transmitted via the same mechanisms. Recent reports suggest that HTLV-II is present in intravenous-drug users (IVDUs) (*4,5*). HTLV-II has not been consistently associated with any diseases.

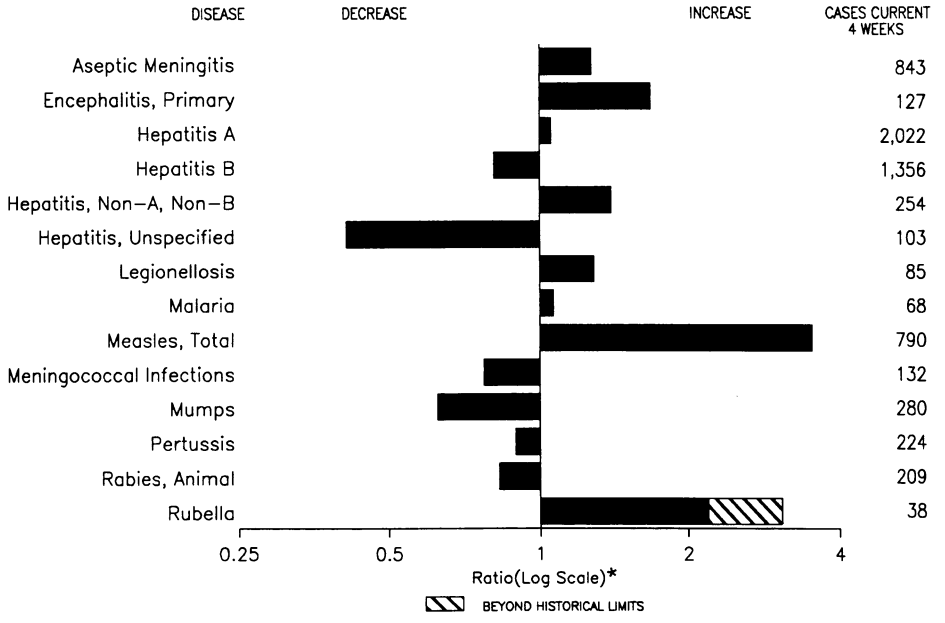
In 1988, the FDA licensed enzyme-linked immunoassays (EIAs) as screening tests for antibody to HTLV-I (*1*). Repeatably reactive specimens are confirmed by investigational Western blot and radioimmunoprecipitation assays. Serum specimens demonstrating reactivity against HTLV-I *gag* p24 and *env* gp46 or gp68 are considered seropositive. Because serologic tests, including the confirmatory assays, do not distinguish between antibodies to HTLV-I and HTLV-II, seropositivity to HTLV-I is frequently referred to as seropositivity to HTLV-I/II. Additional tests, such as polymerase chain reaction (PCR) and synthetic peptide assays (*6*), are required to differentiate the two viral infections.

Of 6.4 million donations screened by the ARC from January 1 through December 31, 1989 (data for the first month of screening are unavailable), 4225 (0.066%) were repeatably reactive by EIA, and 902 (0.014%) (approximately 21% of repeatably reactive specimens) were confirmed as seropositive for HTLV-I/II (Table 1, page 921). Of 2.8 million donations screened by blood banks affiliated with the CCBC from December 1, 1988, through December 31, 1989, 5005 (0.18%) were repeatably reactive by EIA, and 604 (0.021%) (approximately 12% of repeatably reactive specimens) were confirmed as seropositive. Seropositivity rates by region varied considerably but were highest in the Pacific region (Alaska, California, Hawaii, Oregon, and Washington) in both the ARC and the CCBC systems (Figure 1, page 922).

More detailed data regarding HTLV-I/II–seropositive donors have been compiled by the ARC (ARC, unpublished data). Among 485 seropositive donors, the percentages of black females (33%), black males (10%), Hispanic females (9%), Hispanic males (6%), Asian females (2%), and Asian males (2%) were all higher than the estimated proportion of these groups in the overall ARC donor population (4%, 6%, 2%, 2%, <0.5%, and <0.5%, respectively). In addition, possible risk factors for

*(Continued on page 921)*

**FIGURE I. Notifiable disease reports, comparison of 4-week totals ending December 15, 1990, with historical data — United States**




*Ratio of current 4-week total to mean of 15 4-week totals (from comparable, previous, and subsequent 4-week periods for past 5 years).

**TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending December 15, 1990 (50th Week)**

| | Cum. 1990 | | Cum. 1990 |
|---|---|---|---|
| AIDS | 39,234 | Plague | 2 |
| Anthrax | - | Poliomyelitis, Paralytic* | - |
| Botulism: Foodborne | 21 | Psittacosis | 105 |
| Infant | 57 | Rabies, human | 1 |
| Other | 6 | Syphilis: civilian | 46,576 |
| Brucellosis | 75 | military | 227 |
| Cholera | 6 | Syphilis, congenital, age < 1 year | 685 |
| Congenital rubella syndrome | 4 | Tetanus | 58 |
| Diphtheria | 4 | Toxic shock syndrome | 281 |
| Encephalitis, post-infectious | 89 | Trichinosis | 27 |
| Gonorrhea: civilian | 637,326 | Tuberculosis | 22,439 |
| military | 8,138 | Tularemia | 135 |
| Leprosy | 184 | Typhoid fever | 478 |
| Leptospirosis | 50 | Typhus fever, tickborne (RMSF) | 646 |
| Measles: imported | 1,098 | | |
| indigenous | 24,945 | | |

*Six cases of suspected poliomyelitis have been reported in 1990; five of 13 suspected cases in 1989 were confirmed and all were vaccine-associated.

# TABLE II. Cases of specified notifiable diseases, United States, weeks ending December 15, 1990, and December 16, 1989 (50th Week)

| Reporting Area | AIDS | Aseptic Meningitis | Encephalitis | | Gonorrhea (Civilian) | | Hepatitis (Viral), by type | | | | Legionellosis | Leprosy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Primary | Post-infectious | | | A | B | NA,NB | Unspecified | | |
| | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1989 | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1990 |
| UNITED STATES | 39,234 | 10,856 | 1,120 | 89 | 637,326 | 677,697 | 27,969 | 19,261 | 2,597 | 1,588 | 1,243 | 184 |
| NEW ENGLAND | 1,361 | 404 | 28 | - | 17,469 | 19,848 | 589 | 1,004 | 96 | 65 | 75 | 12 |
| Maine | 56 | 23 | 5 | - | 191 | 249 | 10 | 26 | 5 | 1 | 5 | - |
| N.H. | 63 | 42 | - | - | 288 | 184 | 7 | 40 | 8 | 3 | 4 | - |
| Vt. | 15 | 40 | 2 | - | 49 | 68 | 6 | 48 | 6 | 1 | 6 | - |
| Mass. | 747 | 128 | 12 | - | 7,392 | 7,805 | 387 | 619 | 67 | 57 | 50 | 10 |
| R.I. | 82 | 125 | 1 | - | 1,181 | 1,390 | 53 | 50 | - | 3 | 10 | 1 |
| Conn. | 398 | 46 | 8 | - | 8,368 | 10,152 | 126 | 221 | 10 | - | - | 1 |
| MID. ATLANTIC | 11,456 | 1,010 | 48 | 8 | 86,710 | 98,054 | 3,647 | 2,413 | 220 | 92 | 379 | 20 |
| Upstate N.Y. | 1,451 | 546 | 39 | 1 | 14,050 | 17,768 | 1,193 | 684 | 82 | 26 | 144 | 1 |
| N.Y. City | 6,531 | 132 | 3 | 3 | 32,561 | 37,009 | 487 | 553 | 25 | 43 | 83 | 14 |
| N.J. | 2,292 | - | 1 | - | 13,686 | 14,139 | 423 | 569 | 41 | - | 49 | 4 |
| Pa. | 1,182 | 332 | 5 | 4 | 26,413 | 29,138 | 1,544 | 607 | 72 | 23 | 103 | 1 |
| E.N. CENTRAL | 2,779 | 3,310 | 288 | 15 | 121,767 | 127,319 | 2,444 | 2,240 | 445 | 88 | 309 | 2 |
| Ohio | 619 | 678 | 88 | 4 | 36,074 | 33,809 | 268 | 377 | 98 | 14 | 95 | - |
| Ind. | 262 | 347 | 14 | 9 | 10,909 | 9,559 | 243 | 396 | 22 | 15 | 47 | - |
| Ill. | 1,175 | 779 | 92 | 2 | 37,826 | 41,169 | 1,174 | 442 | 47 | 18 | 27 | 1 |
| Mich. | 521 | 1,093 | 78 | - | 29,387 | 32,506 | 370 | 619 | 44 | 41 | 97 | 1 |
| Wis. | 202 | 413 | 16 | - | 7,571 | 10,276 | 389 | 406 | 234 | - | 43 | - |
| W.N. CENTRAL | 957 | 586 | 116 | 2 | 32,581 | 32,234 | 1,804 | 877 | 153 | 31 | 73 | 1 |
| Minn. | 175 | 121 | 72 | 1 | 4,023 | 3,640 | 256 | 108 | 25 | - | 9 | - |
| Iowa | 55 | 112 | 7 | - | 2,188 | 2,710 | 267 | 53 | 13 | 4 | 4 | - |
| Mo. | 535 | 222 | 7 | 1 | 19,745 | 19,678 | 468 | 567 | 86 | 19 | 36 | - |
| N. Dak. | 2 | 25 | 3 | - | 100 | 149 | 25 | 6 | 2 | 2 | 1 | - |
| S. Dak. | 9 | 10 | 9 | - | 296 | 270 | 444 | 7 | 4 | - | 2 | - |
| Nebr. | 55 | 42 | 7 | - | 1,765 | 1,591 | 105 | 33 | 4 | - | 13 | 1 |
| Kans. | 126 | 54 | 11 | - | 4,464 | 4,196 | 239 | 103 | 19 | 6 | 8 | - |
| S. ATLANTIC | 8,438 | 1,902 | 337 | 29 | 181,765 | 181,149 | 2,987 | 3,833 | 354 | 232 | 182 | 6 |
| Del. | 91 | 48 | 5 | - | 3,118 | 3,159 | 105 | 98 | 9 | 2 | 11 | - |
| Md. | 954 | 261 | 26 | 1 | 22,902 | 21,073 | 951 | 529 | 66 | 14 | 60 | 3 |
| D.C. | 675 | 9 | - | - | 13,005 | 10,255 | 15 | 39 | 4 | - | 2 | - |
| Va. | 716 | 354 | 53 | 1 | 16,750 | 15,715 | 289 | 248 | 43 | 160 | 13 | - |
| W. Va. | 60 | 54 | 62 | - | 1,309 | 1,439 | 24 | 84 | 4 | 10 | 4 | - |
| N.C. | 551 | 248 | 41 | - | 28,731 | 27,882 | 640 | 1,038 | 143 | - | 33 | 1 |
| S.C. | 344 | 26 | 1 | - | 13,941 | 16,463 | 41 | 603 | 15 | 9 | 25 | - |
| Ga. | 1,179 | 301 | 5 | 1 | 39,045 | 35,994 | 350 | 479 | 14 | 9 | 21 | - |
| Fla. | 3,868 | 601 | 144 | 26 | 42,964 | 49,169 | 572 | 715 | 56 | 28 | 13 | 2 |
| E.S. CENTRAL | 986 | 707 | 65 | 2 | 55,357 | 54,926 | 397 | 1,455 | 227 | 8 | 57 | 1 |
| Ky. | 178 | 192 | 26 | - | 5,499 | 5,314 | 90 | 462 | 58 | 6 | 22 | - |
| Tenn. | 325 | 158 | 27 | 2 | 17,546 | 18,630 | 198 | 804 | 143 | - | 21 | 1 |
| Ala. | 218 | 242 | 12 | - | 18,461 | 17,598 | 105 | 170 | 23 | - | 14 | - |
| Miss. | 265 | 115 | - | - | 13,851 | 13,384 | 4 | 19 | 3 | 2 | - | - |
| W.S. CENTRAL | 4,236 | 865 | 83 | 9 | 68,448 | 68,954 | 3,522 | 2,135 | 128 | 297 | 50 | 38 |
| Ark. | 194 | 35 | 7 | - | 8,693 | 7,876 | 538 | 86 | 13 | 26 | 9 | - |
| La. | 656 | 92 | 11 | 1 | 12,161 | 14,431 | 209 | 329 | 5 | 7 | 14 | 1 |
| Okla. | 182 | 80 | 3 | 6 | 5,819 | 6,151 | 566 | 167 | 27 | 25 | 17 | - |
| Tex. | 3,204 | 658 | 62 | 2 | 41,775 | 40,496 | 2,209 | 1,553 | 83 | 239 | 10 | 37 |
| MOUNTAIN | 1,043 | 390 | 24 | 2 | 12,813 | 14,081 | 4,359 | 1,387 | 210 | 128 | 50 | 3 |
| Mont. | 15 | 7 | - | - | 212 | 184 | 164 | 69 | 7 | 4 | 6 | - |
| Idaho | 26 | 10 | - | - | 139 | 167 | 87 | 80 | 8 | - | 3 | - |
| Wyo. | 3 | 10 | 1 | - | 145 | 106 | 76 | 17 | 5 | 1 | 2 | - |
| Colo. | 329 | 100 | 5 | - | 3,431 | 3,108 | 322 | 188 | 46 | 45 | 9 | - |
| N. Mex. | 102 | 20 | 1 | - | 1,214 | 1,253 | 919 | 189 | 17 | 10 | 4 | - |
| Ariz. | 294 | 171 | 10 | - | 4,924 | 5,706 | 1,921 | 467 | 71 | 51 | 12 | 2 |
| Utah | 98 | 27 | 3 | - | 369 | 429 | 566 | 98 | 27 | 7 | 6 | - |
| Nev. | 176 | 45 | 4 | 2 | 2,379 | 3,128 | 304 | 279 | 29 | 10 | 8 | 1 |
| PACIFIC | 7,978 | 1,682 | 131 | 22 | 60,416 | 81,132 | 8,220 | 3,917 | 764 | 647 | 68 | 101 |
| Wash. | 573 | - | 7 | 2 | 4,863 | 6,483 | 1,291 | 585 | 129 | 34 | 16 | 9 |
| Oreg. | 315 | - | - | - | 2,418 | 3,009 | 789 | 403 | 57 | 11 | - | - |
| Calif. | 6,927 | 1,474 | 116 | 19 | 51,647 | 70,142 | 5,870 | 2,799 | 561 | 590 | 50 | 75 |
| Alaska | 24 | 110 | 7 | - | 1,020 | 991 | 195 | 55 | 7 | 5 | - | - |
| Hawaii | 139 | 98 | 1 | 1 | 468 | 507 | 75 | 75 | 10 | 7 | 2 | 17 |
| Guam | 2 | 3 | - | - | 218 | 160 | 12 | 4 | - | 11 | - | 1 |
| P.R. | 1,672 | 85 | 8 | 1 | 715 | 1,073 | 158 | 585 | 15 | 28 | - | 6 |
| V.I. | 11 | - | - | - | 406 | 680 | 1 | 12 | - | - | - | - |
| Amer. Samoa | - | 1 | - | 31 | 63 | 55 | 34 | - | - | - | - | 10 |
| C.N.M.I. | - | - | - | - | 162 | 89 | 10 | 9 | - | 15 | - | 5 |

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

## TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 15, 1990, and December 16, 1989 (50th Week)

| Reporting Area | Malaria | Measles (Rubeola) | | | | | Menin-gococcal Infections | Mumps | | Pertussis | | | Rubella | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Indigenous | | Imported* | | Total | | | | | | | | | |
| | Cum. 1990 | 1990 | Cum. 1990 | 1990 | Cum. 1990 | Cum. 1989 | Cum. 1990 | 1990 | Cum. 1990 | 1990 | Cum. 1990 | Cum. 1989 | 1990 | Cum. 1990 | Cum. 1989 |
| UNITED STATES | 1,141 | 311 | 24,945 | - | 1,098 | 15,956 | 2,253 | 78 | 4,866 | 56 | 3,997 | 3,760 | 2 | 1.089 | 376 |
| NEW ENGLAND | 97 | - | 269 | - | 28 | 392 | 179 | - | 49 | 4 | 417 | 391 | - | 8 | 6 |
| Maine | 4 | - | 28 | - | 2 | 1 | 15 | - | - | - | 22 | 25 | - | 1 | - |
| N.H. | 4 | - | - | - | 9 | 16 | 14 | - | 11 | 1 | 67 | 16 | - | 1 | 4 |
| Vt. | 7 | - | - | - | 1 | 3 | 13 | - | 2 | - | 8 | 9 | - | - | 1 |
| Mass. | 50 | - | 24 | - | 8 | 106 | 80 | - | 13 | 2 | 283 | 298 | - | 2 | 1 |
| R.I. | 8 | - | 27 | - | 3 | 41 | 14 | - | 11 | 1 | 10 | 21 | - | 1 | - |
| Conn. | 24 | - | 190 | - | 5 | 225 | 43 | - | 12 | - | 27 | 22 | - | 3 | - |
| MID. ATLANTIC | 235 | 13 | 1,400 | - | 157 | 1,015 | 347 | 3 | 342 | 5 | 542 | 314 | - | 11 | 37 |
| Upstate N.Y. | 48 | - | 206 | - | 112 | 157 | 132 | 2 | 137 | 3 | 321 | 140 | - | 10 | 14 |
| N.Y. City | 80 | - | 467 | - | 21 | 125 | 46 | - | - | - | - | 17 | - | - | 16 |
| N.J. | 78 | U | 311 | U | 15 | 455 | 68 | U | 89 | U | 31 | 36 | U | - | 7 |
| Pa. | 29 | 13 | 416 | - | 9 | 278 | 101 | 1 | 116 | 2 | 190 | 121 | - | 1 | - |
| E.N. CENTRAL | 73 | - | 3,386 | - | 143 | 5,786 | 300 | 2 | 524 | 13 | 937 | 644 | - | 162 | 30 |
| Ohio | 9 | - | 551 | - | 3 | 1,551 | 93 | - | 91 | 6 | 257 | 139 | - | 131 | 3 |
| Ind. | 3 | - | 417 | - | 1 | 112 | 29 | - | 21 | 5 | 149 | 56 | - | - | - |
| Ill. | 34 | - | 1,327 | - | 10 | 3,076 | 83 | - | 186 | - | 305 | 194 | - | 19 | 23 |
| Mich. | 18 | - | 348 | - | 125 | 343 | 69 | 1 | 170 | 2 | 86 | 46 | - | 9 | 1 |
| Wis. | 9 | - | 743 | - | 4 | 704 | 26 | 1 | 56 | - | 140 | 209 | - | 3 | 3 |
| W.N. CENTRAL | 24 | - | 902 | - | 17 | 951 | 78 | 4 | 163 | 5 | 220 | 240 | - | 48 | 7 |
| Minn. | 8 | - | 424 | - | 6 | 26 | 19 | 2 | 17 | 3 | 54 | 67 | - | 42 | - |
| Iowa | 2 | - | 25 | - | 1 | 13 | 1 | - | 23 | - | 18 | 15 | - | 4 | 1 |
| Mo. | 12 | - | 99 | - | 1 | 659 | 34 | - | 59 | - | 109 | 133 | - | - | 4 |
| N. Dak. | - | - | - | - | - | - | 1 | - | - | - | 3 | 5 | - | 1 | 1 |
| S. Dak. | - | - | 15 | - | 8 | - | 2 | - | - | - | 1 | 4 | - | - | - |
| Nebr. | - | - | 105 | - | 1 | 113 | 5 | 1 | 9 | 2 | 10 | 8 | - | 1 | - |
| Kans. | 2 | - | 234 | - | - | 140 | 16 | 1 | 55 | - | 25 | 8 | - | - | 1 |
| S. ATLANTIC | 218 | - | 940 | - | 375 | 757 | 414 | 38 | 1,956 | 1 | 314 | 370 | - | 21 | 23 |
| Del. | 6 | - | 8 | - | 3 | 40 | 4 | - | 6 | - | 9 | 1 | - | - | - |
| Md. | 58 | - | 195 | - | 18 | 105 | 47 | 20 | 1,105 | - | 62 | 77 | - | 2 | 2 |
| D.C. | 10 | - | 16 | - | 7 | 42 | 11 | 1 | 40 | - | 15 | 3 | - | 1 | - |
| Va. | 51 | U | 84 | U | 2 | 22 | 52 | U | 106 | U | 25 | 37 | U | 1 | - |
| W. Va. | 2 | - | 6 | - | - | 53 | 19 | - | 44 | - | 31 | 34 | - | - | - |
| N.C. | 20 | - | 24 | - | 15 | 190 | 70 | 11 | 315 | - | 77 | 78 | - | 1 | 1 |
| S.C. | 3 | - | 4 | - | - | 15 | 29 | 2 | 66 | - | 5 | - | - | - | - |
| Ga. | 16 | - | 99 | - | 259 | 18 | 67 | - | 96 | - | 41 | 54 | - | 1 | - |
| Fla. | 52 | - | 504 | - | 71 | 272 | 115 | 4 | 178 | 1 | 49 | 86 | - | 15 | 20 |
| E.S. CENTRAL | 22 | - | 194 | - | 4 | 251 | 138 | - | 107 | - | 162 | 211 | - | 4 | 5 |
| Ky. | 2 | - | 41 | - | 1 | 44 | 40 | - | - | - | - | 1 | - | 1 | - |
| Tenn. | 11 | - | 104 | - | - | 147 | 56 | - | 61 | - | 85 | 120 | - | 3 | 4 |
| Ala. | 9 | - | 23 | - | 2 | 59 | 38 | - | 19 | - | 69 | 79 | - | - | 1 |
| Miss. | - | - | 26 | - | 1 | 1 | 4 | - | 27 | - | 8 | 11 | - | - | - |
| W.S. CENTRAL | 72 | - | 4,233 | - | 96 | 3,321 | 152 | 10 | 728 | 1 | 199 | 375 | - | 91 | 50 |
| Ark. | 4 | - | 18 | - | 31 | 22 | 18 | - | 140 | - | 22 | 31 | - | 3 | - |
| La. | 7 | - | 10 | - | - | 119 | 35 | 1 | 121 | 1 | 34 | 31 | - | - | 5 |
| Okla. | 10 | - | 174 | - | - | 110 | 16 | - | 106 | - | 63 | 63 | - | 1 | 1 |
| Tex. | 51 | - | 4,031 | - | 65 | 3,070 | 83 | 9 | 361 | - | 80 | 250 | - | 87 | 44 |
| MOUNTAIN | 27 | 9 | 876 | - | 100 | 420 | 76 | 5 | 346 | 8 | 325 | 683 | - | 112 | 37 |
| Mont. | 1 | - | - | - | 1 | 13 | 11 | - | 1 | - | 36 | 43 | - | 15 | 1 |
| Idaho | 5 | - | 17 | - | 10 | 7 | 6 | 1 | 144 | 1 | 57 | 76 | - | 49 | 32 |
| Wyo. | 1 | - | - | - | 15 | - | 1 | - | 2 | - | - | - | - | - | 2 |
| Colo. | 4 | - | 91 | - | 47 | 101 | 24 | - | 26 | 4 | 117 | 104 | - | 4 | 1 |
| N. Mex. | 4 | - | 81 | - | 12 | 31 | 12 | N | N | 1 | 19 | 35 | - | - | - |
| Ariz. | 11 | - | 300 | - | 12 | 145 | 7 | 1 | 140 | 2 | 56 | 400 | - | 32 | - |
| Utah | - | - | 147 | - | - | 114 | 7 | 3 | 14 | - | 36 | 24 | - | 4 | - |
| Nev. | 1 | 9 | 240 | - | 3 | 9 | 8 | - | 19 | - | 4 | 1 | - | 8 | 1 |
| PACIFIC | 373 | 289 | 12,745 | - | 178 | 3,063 | 569 | 16 | 651 | 19 | 881 | 532 | 2 | 632 | 181 |
| Wash. | 32 | - | 257 | - | 87 | 54 | 73 | 1 | 62 | - | 217 | 189 | - | 1 | - |
| Oreg. | 19 | - | 169 | - | 44 | 82 | 69 | N | N | 1 | 112 | 18 | - | 75 | 4 |
| Calif. | 316 | 285 | 12,202 | - | 41 | 2,897 | 410 | 15 | 557 | 8 | 423 | 299 | 2 | 540 | 155 |
| Alaska | 2 | - | 78 | - | 2 | 1 | 12 | - | 6 | 6 | 16 | 1 | - | - | - |
| Hawaii | 4 | 4 | 39 | - | 4 | 32 | 5 | - | 26 | 4 | 113 | 25 | - | 16 | 22 |
| Guam | 3 | U | - | U | 1 | 4 | 4 | U | 5 | U | 1 | 1 | U | - | - |
| P.R. | 3 | 3 | 1,668 | - | - | 562 | 13 | - | 8 | - | 22 | 6 | - | - | 8 |
| V.I. | - | U | 21 | U | 3 | 4 | - | U | 14 | U | - | - | U | - | - |
| Amer. Samoa | 35 | U | 501 | U | - | - | - | U | 37 | U | - | - | U | - | - |
| C.N.M.I. | - | U | 35 | U | - | - | - | U | 8 | U | 4 | - | U | - | - |

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

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

## TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 15, 1990, and December 16, 1989 (50th Week)

| Reporting Area | Syphilis (Civilian) (Primary & Secondary) | | Toxic-shock Syndrome | Tuberculosis | | Tula-remia | Typhoid Fever | Typhus Fever (Tick-borne) (RMSF) | Rabies, Animal |
|---|---|---|---|---|---|---|---|---|---|
| | Cum. 1990 | Cum. 1989 | Cum. 1990 | Cum. 1990 | Cum. 1989 | Cum. 1990 | Cum. 1990 | Cum. 1990 | Cum. 1990 |
| UNITED STATES | 46,576 | 42,733 | 281 | 22,439 | 20,776 | 135 | 478 | 646 | 4,123 |
| NEW ENGLAND | 1,594 | 1,644 | 25 | 592 | 628 | 4 | 32 | 20 | 6 |
| Maine | 7 | 13 | 8 | 18 | 25 | 1 | - | - | - |
| N.H. | 51 | 16 | 1 | 3 | 26 | - | - | 1 | 3 |
| Vt. | 2 | 1 | 1 | 10 | 9 | - | - | - | - |
| Mass. | 655 | 487 | 13 | 336 | 354 | 3 | 30 | 17 | - |
| R.I. | 24 | 30 | 1 | 67 | 64 | - | - | - | - |
| Conn. | 855 | 1,097 | 1 | 158 | 150 | - | 2 | 2 | 3 |
| MID. ATLANTIC | 9,031 | 8,983 | 32 | 5,296 | 4,284 | 2 | 100 | 30 | 1,060 |
| Upstate N.Y. | 873 | 934 | 11 | 364 | 358 | 1 | 19 | 15 | 206 |
| N.Y. City | 4,016 | 4,275 | 5 | 3,317 | 2,421 | - | 54 | 2 | - |
| N.J. | 1,441 | 1,398 | - | 880 | 837 | 1 | 23 | 8 | 370 |
| Pa. | 2,701 | 2,376 | 16 | 735 | 668 | - | 4 | 5 | 484 |
| E.N. CENTRAL | 3,451 | 1,863 | 63 | 2,160 | 2,098 | 6 | 34 | 48 | 171 |
| Ohio | 529 | 168 | 19 | 387 | 352 | 2 | 6 | 36 | 11 |
| Ind. | 107 | 58 | 1 | 222 | 199 | 1 | 2 | 2 | 17 |
| Ill. | 1,478 | 812 | 14 | 1,057 | 1,008 | 3 | 17 | 3 | 30 |
| Mich. | 986 | 658 | 29 | 413 | 415 | - | 8 | 7 | 51 |
| Wis. | 351 | 167 | - | 81 | 124 | - | 1 | - | 62 |
| W.N. CENTRAL | 499 | 320 | 34 | 591 | 534 | 45 | 5 | 53 | 625 |
| Minn. | 88 | 58 | 5 | 121 | 100 | - | - | - | 234 |
| Iowa | 73 | 35 | 9 | 69 | 50 | - | 1 | 2 | 21 |
| Mo. | 277 | 168 | 9 | 289 | 254 | 33 | 3 | 35 | 28 |
| N. Dak. | 1 | 6 | 1 | 19 | 15 | - | - | - | 92 |
| S. Dak. | 3 | 1 | - | 14 | 29 | 4 | - | 2 | 201 |
| Nebr. | 15 | 24 | 4 | 16 | 22 | 4 | - | 1 | 4 |
| Kans. | 42 | 28 | 6 | 63 | 64 | 4 | 1 | 13 | 45 |
| S. ATLANTIC | 14,779 | 15,072 | 18 | 4,145 | 4,360 | 5 | 77 | 289 | 1,120 |
| Del. | 187 | 218 | 1 | 35 | 42 | - | - | 1 | 32 |
| Md. | 1,155 | 824 | 1 | 340 | 367 | - | 33 | 19 | 442 |
| D.C. | 1,069 | 835 | 1 | 155 | 155 | - | - | 2 | - |
| Va. | 854 | 588 | 3 | 368 | 362 | 2 | 7 | 24 | 194 |
| W. Va. | 20 | 15 | - | 80 | 72 | - | 1 | 1 | 37 |
| N.C. | 1,668 | 1,108 | 4 | 574 | 577 | 2 | 4 | 178 | 8 |
| S.C. | 1,018 | 849 | 2 | 449 | 489 | 1 | 2 | 43 | 128 |
| Ga. | 3,755 | 3,799 | 2 | 696 | 758 | - | 4 | 18 | 199 |
| Fla. | 5,053 | 6,836 | 4 | 1,448 | 1,538 | - | 26 | 3 | 80 |
| E.S. CENTRAL | 4,379 | 2,954 | 14 | 1,636 | 1,637 | 8 | 4 | 81 | 175 |
| Ky. | 109 | 54 | 3 | 354 | 362 | 2 | 1 | 11 | 54 |
| Tenn. | 1,844 | 1,305 | 8 | 487 | 531 | 6 | 1 | 58 | 27 |
| Ala. | 1,328 | 890 | 3 | 477 | 444 | - | 2 | 12 | 91 |
| Miss. | 1,098 | 705 | - | 318 | 300 | - | - | - | 3 |
| W.S. CENTRAL | 8,039 | 6,083 | 12 | 2,663 | 2,532 | 41 | 22 | 101 | 443 |
| Ark. | 586 | 381 | - | 309 | 283 | 31 | - | 22 | 34 |
| La. | 2,480 | 1,541 | 1 | 276 | 333 | - | 1 | 3 | 31 |
| Okla. | 251 | 117 | 8 | 198 | 213 | 9 | 3 | 70 | 129 |
| Tex. | 4,722 | 4,044 | 3 | 1,880 | 1,703 | 1 | 18 | 6 | 249 |
| MOUNTAIN | 846 | 659 | 29 | 519 | 531 | 20 | 21 | 12 | 214 |
| Mont. | - | 2 | - | 22 | 16 | - | - | 4 | 45 |
| Idaho | 6 | 1 | 2 | 13 | 25 | - | - | 1 | 7 |
| Wyo. | 2 | 6 | 2 | 5 | - | 7 | - | 1 | 54 |
| Colo. | 49 | 63 | 7 | 28 | 53 | 6 | - | 1 | 23 |
| N. Mex. | 46 | 26 | 3 | 106 | 88 | 4 | - | 1 | 12 |
| Ariz. | 596 | 348 | 9 | 246 | 266 | - | 19 | 1 | 38 |
| Utah | 29 | 16 | 5 | 38 | 42 | 3 | - | 3 | 16 |
| Nev. | 118 | 197 | 1 | 61 | 41 | - | 2 | - | 19 |
| PACIFIC | 3,958 | 5,155 | 54 | 4,837 | 4,172 | 4 | 183 | 12 | 309 |
| Wash. | 326 | 467 | 4 | 287 | 231 | 2 | 23 | 2 | - |
| Oreg. | 128 | 237 | 3 | 130 | 133 | - | 5 | 1 | 1 |
| Calif. | 3,476 | 4,427 | 46 | 4,170 | 3,573 | - | 145 | 4 | 286 |
| Alaska | 17 | 9 | - | 60 | 57 | 2 | - | - | 22 |
| Hawaii | 11 | 15 | 1 | 190 | 178 | - | 10 | 5 | - |
| Guam | 2 | 4 | - | 40 | 83 | - | - | - | - |
| P.R. | 313 | 519 | - | 146 | 289 | - | 3 | - | 41 |
| V.I. | 42 | 10 | - | 4 | 4 | - | - | - | - |
| Amer. Samoa | - | - | - | 12 | 7 | - | 1 | - | - |
| C.N.M.I. | 4 | 14 | - | 44 | 29 | - | 4 | - | - |

U: Unavailable

# TABLE III. Deaths in 121 U.S. cities,* week ending December 15, 1990 (50th Week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I** |
|---|---|---|---|---|---|---|---|
| | All Ages | ≥65 | 45-64 | 25-44 | 1-24 | <1 | Total |
| NEW ENGLAND | 605 | 395 | 126 | 50 | 18 | 15 | 45 |
| Boston, Mass. | 167 | 100 | 31 | 20 | 7 | 8 | 16 |
| Bridgeport, Conn. | 34 | 23 | 6 | 3 | 1 | 1 | 2 |
| Cambridge, Mass. | 17 | 13 | 4 | - | - | - | 1 |
| Fall River, Mass. | 20 | 13 | 7 | - | - | - | - |
| Hartford, Conn. | 52 | 30 | 13 | 6 | - | 3 | 2 |
| Lowell, Mass. | 38 | 25 | 11 | - | - | 2 | 3 |
| Lynn, Mass. | 8 | 6 | 1 | 1 | - | - | - |
| New Bedford, Mass. | 31 | 23 | 5 | 2 | 1 | - | 2 |
| New Haven, Conn. | 50 | 29 | 11 | 6 | 3 | 1 | 1 |
| Providence, R.I. | 58 | 40 | 14 | 4 | - | - | 7 |
| Somerville, Mass. | 7 | 6 | 1 | - | - | - | - |
| Springfield, Mass. | 37 | 23 | 8 | 5 | 1 | - | 2 |
| Waterbury, Conn. | 33 | 26 | 6 | 1 | - | - | 5 |
| Worcester, Mass. | 53 | 38 | 8 | 2 | 5 | - | 4 |
| MID. ATLANTIC | 2,579 | 1,703 | 512 | 252 | 51 | 61 | 148 |
| Albany, N.Y. | 45 | 30 | 7 | 5 | 2 | 1 | 7 |
| Allentown, Pa. | 21 | 20 | 1 | - | - | - | - |
| Buffalo, N.Y.§ | 110 | 76 | 21 | 10 | 1 | 2 | 5 |
| Camden, N.J. | 59 | 39 | 10 | 9 | - | 1 | - |
| Elizabeth, N.J. | 17 | 13 | 2 | 2 | - | - | 1 |
| Erie, Pa.† | 54 | 39 | 8 | 3 | 3 | 1 | 2 |
| Jersey City, N.J. | 57 | 27 | 19 | 10 | - | 1 | 3 |
| N.Y. City, N.Y. | 1,278 | 813 | 259 | 144 | 28 | 34 | 76 |
| Newark, N.J. | 66 | 35 | 16 | 7 | 2 | 6 | 5 |
| Paterson, N.J. | 30 | 17 | 8 | 2 | 2 | 1 | 3 |
| Philadelphia, Pa. | 398 | 262 | 82 | 42 | 6 | 6 | 20 |
| Pittsburgh, Pa.† | 77 | 57 | 10 | 4 | 3 | 3 | 3 |
| Reading, Pa. | 33 | 25 | 8 | - | - | - | 2 |
| Rochester, N.Y. | 120 | 87 | 26 | 4 | - | 3 | 6 |
| Schenectady, N.Y. | 30 | 24 | 3 | 2 | - | 1 | 2 |
| Scranton, Pa.† | 25 | 18 | 6 | 1 | - | - | 1 |
| Syracuse, N.Y. | 85 | 64 | 14 | 4 | 3 | - | 6 |
| Trenton, N.J. | 39 | 27 | 8 | 2 | 1 | 1 | 1 |
| Utica, N.Y. | 15 | 12 | 3 | - | - | - | 2 |
| Yonkers, N.Y. | 20 | 18 | 1 | 1 | - | - | 3 |
| E.N. CENTRAL | 2,400 | 1,586 | 517 | 161 | 53 | 83 | 104 |
| Akron, Ohio | 70 | 52 | 12 | 2 | 3 | 1 | - |
| Canton, Ohio | 52 | 42 | 9 | 1 | - | - | 4 |
| Chicago, Ill.§ | 564 | 362 | 125 | 45 | 10 | 22 | 16 |
| Cincinnati, Ohio | 133 | 96 | 30 | 4 | - | 3 | 13 |
| Cleveland, Ohio | 196 | 108 | 47 | 23 | 4 | 14 | 5 |
| Columbus, Ohio | 185 | 123 | 39 | 12 | 4 | 7 | 1 |
| Dayton, Ohio | 131 | 85 | 34 | 6 | 2 | 4 | 7 |
| Detroit, Mich. | 205 | 106 | 50 | 31 | 9 | 9 | 4 |
| Evansville, Ind. | 31 | 21 | 5 | 2 | - | 3 | - |
| Fort Wayne, Ind. | 62 | 42 | 9 | 7 | 1 | 3 | 1 |
| Gary, Ind. | 18 | 12 | 4 | 1 | 1 | - | - |
| Grand Rapids, Mich. | 53 | 30 | 12 | 3 | 7 | 1 | 7 |
| Indianapolis, Ind. | 135 | 88 | 31 | 7 | 2 | 7 | 8 |
| Madison, Wis. | 51 | 36 | 11 | 1 | 2 | 1 | 2 |
| Milwaukee, Wis. | 154 | 104 | 39 | 7 | 1 | 3 | 16 |
| Peoria, Ill. | 53 | 43 | 7 | 1 | - | 2 | 4 |
| Rockford, Ill. | 51 | 42 | 8 | - | - | 1 | 3 |
| South Bend, Ind. | 44 | 29 | 9 | 3 | 2 | 1 | 3 |
| Toledo, Ohio | 114 | 83 | 25 | 4 | 1 | 1 | 9 |
| Youngstown, Ohio | 98 | 82 | 11 | 1 | 4 | - | 1 |
| W.N. CENTRAL | 753 | 518 | 155 | 32 | 13 | 35 | 44 |
| Des Moines, Iowa | 79 | 57 | 15 | 2 | - | 5 | 1 |
| Duluth, Minn. | 19 | 15 | 2 | - | 1 | 1 | 3 |
| Kansas City, Kans. | 28 | 21 | 5 | 2 | - | - | 1 |
| Kansas City, Mo. | 90 | 62 | 16 | 5 | 1 | 6 | 9 |
| Lincoln, Nebr. | 43 | 32 | 10 | - | 1 | - | 3 |
| Minneapolis, Minn. | 166 | 110 | 33 | 8 | 5 | 10 | 9 |
| Omaha, Nebr. | 86 | 53 | 27 | 2 | 1 | 3 | 6 |
| St. Louis, Mo. | 129 | 88 | 18 | 11 | 4 | 8 | 8 |
| St. Paul, Minn. | 63 | 47 | 14 | 2 | - | - | 2 |
| Wichita, Kans. | 50 | 33 | 15 | - | - | 2 | 2 |
| S. ATLANTIC | 1,357 | 823 | 281 | 169 | 38 | 45 | 61 |
| Atlanta, Ga. | 187 | 114 | 35 | 26 | 8 | 4 | 8 |
| Baltimore, Md. | 109 | 56 | 34 | 12 | 4 | 3 | 3 |
| Charlotte, N.C. | 95 | 64 | 15 | 12 | 1 | 3 | 3 |
| Jacksonville, Fla. | 129 | 77 | 35 | 13 | 1 | 3 | 14 |
| Miami, Fla. | 148 | 84 | 31 | 25 | 5 | 3 | 1 |
| Norfolk, Va. | 55 | 25 | 13 | 8 | 1 | 8 | 2 |
| Richmond, Va. | 77 | 45 | 15 | 9 | 2 | 6 | 8 |
| Savannah, Ga. | 60 | 39 | 13 | 6 | 2 | - | 2 |
| St. Petersburg, Fla. | 86 | 69 | 4 | 6 | 4 | 3 | 2 |
| Tampa, Fla. | 151 | 104 | 27 | 14 | 1 | 4 | 10 |
| Washington, D.C.§ | 236 | 128 | 54 | 37 | 9 | 8 | 8 |
| Wilmington, Del. | 24 | 18 | 5 | 1 | - | - | - |
| E.S. CENTRAL | 962 | 634 | 200 | 66 | 36 | 26 | 64 |
| Birmingham, Ala. | 130 | 83 | 26 | 12 | 2 | 7 | 4 |
| Chattanooga, Tenn. | 78 | 54 | 16 | 6 | 2 | - | 7 |
| Knoxville, Tenn. | 90 | 59 | 21 | 5 | 5 | - | 6 |
| Louisville, Ky. | 135 | 92 | 31 | 4 | 3 | 5 | 5 |
| Memphis, Tenn. | 204 | 135 | 40 | 17 | 10 | 2 | 15 |
| Mobile, Ala. | 118 | 86 | 17 | 7 | 4 | 4 | 10 |
| Montgomery, Ala. | 41 | 28 | 5 | 5 | 3 | - | 1 |
| Nashville, Tenn. | 166 | 97 | 44 | 10 | 7 | 8 | 16 |
| W.S. CENTRAL | 1,464 | 916 | 306 | 133 | 62 | 46 | 81 |
| Austin, Tex. | 71 | 45 | 14 | 6 | 4 | 2 | 3 |
| Baton Rouge, La. | 57 | 38 | 14 | 4 | 1 | - | 1 |
| Corpus Christi, Tex. | 55 | 28 | 17 | 2 | 5 | 3 | 4 |
| Dallas, Tex. | 203 | 117 | 37 | 23 | 11 | 15 | 5 |
| El Paso, Tex. | 68 | 45 | 12 | 7 | 3 | 1 | 1 |
| Fort Worth, Tex. | 94 | 73 | 7 | 6 | 3 | 5 | 7 |
| Houston, Tex. | 337 | 183 | 88 | 49 | 12 | 5 | 35 |
| Little Rock, Ark. | 73 | 51 | 14 | 5 | 2 | 1 | 1 |
| New Orleans, La. | 153 | 90 | 39 | 9 | 10 | 5 | - |
| San Antonio, Tex. | 181 | 123 | 37 | 10 | 7 | 3 | 8 |
| Shreveport, La. | 58 | 42 | 10 | 4 | - | 2 | 11 |
| Tulsa, Okla. | 114 | 81 | 17 | 8 | 4 | 4 | 5 |
| MOUNTAIN | 717 | 462 | 127 | 46 | 48 | 32 | 31 |
| Albuquerque, N. Mex. | 79 | 52 | - | - | 23 | 4 | 3 |
| Colo. Springs, Colo. | 34 | 20 | 8 | 3 | 3 | - | 1 |
| Denver, Colo. | 132 | 83 | 21 | 12 | 4 | 10 | 5 |
| Las Vegas, Nev. | 119 | 65 | 31 | 12 | 6 | 5 | 4 |
| Ogden, Utah | 20 | 13 | 4 | 1 | - | 2 | 1 |
| Phoenix, Ariz. | 135 | 84 | 30 | 7 | 7 | 7 | 4 |
| Pueblo, Colo. | 20 | 17 | 1 | 1 | - | 1 | - |
| Salt Lake City, Utah | 26 | 16 | 6 | 2 | - | 2 | 1 |
| Tucson, Ariz. | 152 | 112 | 26 | 8 | 5 | 1 | 12 |
| PACIFIC | 1,973 | 1,286 | 367 | 206 | 55 | 54 | 127 |
| Berkeley, Calif. | 28 | 18 | 8 | - | - | 2 | 1 |
| Fresno, Calif.§ | 88 | 59 | 14 | 7 | 4 | 4 | 4 |
| Glendale, Calif.§ | 16 | 14 | 2 | - | - | - | 1 |
| Honolulu, Hawaii | 99 | 65 | 19 | 11 | - | 4 | 6 |
| Long Beach, Calif. | 87 | 58 | 17 | 7 | 3 | 1 | 12 |
| Los Angeles Calif.§ | 390 | 247 | 75 | 45 | 17 | 4 | 16 |
| Oakland, Calif.§ | 67 | 47 | 9 | 7 | 3 | 1 | 4 |
| Pasadena, Calif. | 33 | 28 | 3 | 1 | 1 | - | 4 |
| Portland, Oreg. | 129 | 90 | 15 | 16 | 3 | 5 | 3 |
| Sacramento, Calif. | 185 | 121 | 43 | 9 | 4 | 8 | 30 |
| San Diego, Calif. | 166 | 96 | 26 | 25 | 10 | 9 | 13 |
| San Francisco, Calif. | 195 | 110 | 39 | 38 | 5 | 1 | 5 |
| San Jose, Calif. | 209 | 134 | 48 | 19 | 3 | 5 | 14 |
| Seattle, Wash. | 143 | 96 | 30 | 14 | - | 3 | 2 |
| Spokane, Wash. | 55 | 43 | 6 | 2 | 1 | 3 | 5 |
| Tacoma, Wash. | 83 | 60 | 13 | 5 | 1 | 4 | 7 |
| TOTAL | 12,810†† | 8,323 | 2,591 | 1,115 | 374 | 397 | 705 |

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

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

*HTLV-I Screening — Continued*

HTLV-I/II seropositivity included a history of IV-drug use (20% of males, 4% of females), sexual contact with an IVDU (2% of males, 29% of females), birth in or sexual contact with a person from the Caribbean (23% of males, 17% of females), birth in or sexual contact with a person from Japan (13% of males, 6% of females), and a history of blood transfusion (13% of males, 11% of females). With the exception of history of blood transfusion, which was more prevalent in seropositive than in seronegative donors, frequencies of these other potential risk factors in the overall donor population, or in a suitable control group, are unavailable.

PCR studies were performed on peripheral blood mononuclear cells from the first 136 HTLV-I/II–seropositive ARC blood donors available (ARC, unpublished data): 56 (41%) were confirmed to be infected with HTLV-I, 57 (42%) with HTLV-II, and three (2%) with both viruses. In 20 (15%) donors, no evidence of HTLV-I or HTLV-II infection was detected. In general, HTLV-I infection correlated with being from or having had sexual contact with persons from the Caribbean or Japan; HTLV-II infection correlated with history of IV-drug use or history of sexual contact with an IVDU. About half of the infected donors reporting a history of blood transfusion as a risk factor were infected with HTLV-I, and about half with HTLV-II.

*Reported by: AE Williams, PhD, CT Fang, PhD, MT Sullivan, MS, American Red Cross, Rockville, Maryland. J Starkey, Council of Community Blood Centers, District of Columbia. AI Chernoff, MD, American Association of Blood Banks, Arlington, Virginia. JS Epstein, MD, TP Gross, MD, Laboratory of Retrovirology, Div of Transfusion Science, Center for Biologics Evaluation and*

**TABLE 1. Results of volunteer blood donor screening for human T-lymphotropic virus type I (HTLV-I) — United States, December 1988–December 1989**

| Screening agency/Date | No. donations tested | EIA*-reactive | | HTLV-I/II–seropositive† | |
|---|---|---|---|---|---|
| | | No. | (%) | No. | (%) |
| **American Red Cross** | | | | | |
| Dec 1988 | NA§ | NA | — | NA | — |
| Jan–Mar 1989 | 1,587,562 | 1,048 | (0.066) | 272 | (0.017) |
| Apr–Jun 1989 | 1,598,642 | 1,119 | (0.070) | 240 | (0.015) |
| Jul–Sep 1989 | 1,566,479 | 1,238 | (0.079) | 231 | (0.015) |
| Oct–Dec 1989 | 1,607,255 | 820 | (0.051) | 159 | (0.010) |
| **Total** | **6,359,938** | **4,225** | **(0.066)** | **902** | **(0.014)** |
| **Council of Community Blood Centers** | | | | | |
| Dec 1988 | 118,797 | 527 | (0.44) | 45 | (0.038) |
| Jan–Mar 1989 | 504,751 | 1,213 | (0.24) | 115 | (0.023) |
| Apr–Jun 1989 | 515,582 | 573 | (0.11) | 102 | (0.020) |
| Jul–Sep 1989 | 515,951 | 650 | (0.13) | 76 | (0.015) |
| Oct–Dec 1989 | 520,492 | 517 | (0.10) | 58 | (0.011) |
| **Total¶** | **2,175,573** | **3,480** | **(0.16)** | **396** | **(0.018)** |

*Enzyme-linked immunoassay.
†The HTLV-I screening EIA and supplementary serologic tests are also reactive for HTLV-II.
§Not available.
¶A total of 2,835,287 units were screened, of which 5005 (0.18%) were repeatably reactive in a screening test and 604 (0.021%) were confirmed as seropositive for HTLV-I/II. However, information by quarter was available for only the 2,175,573 units shown.

*HTLV-I Screening — Continued*

*Research, Food and Drug Administration, Rockville, Maryland. Retrovirus Diseases Br, Div of Viral and Rickettsial Diseases, Center for Infectious Diseases, CDC.*

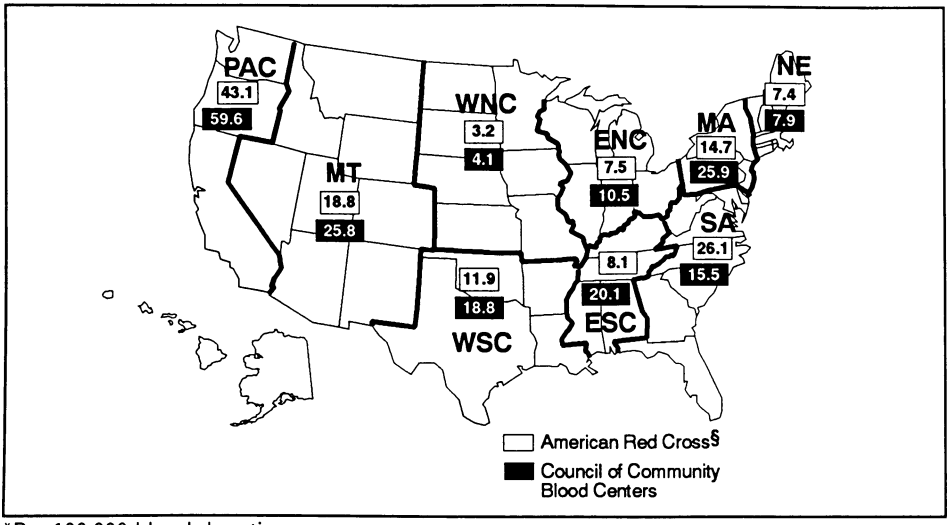
**Editorial Note:** Of approximately 13 million units of blood donated in the United States each year, about half are donated through the ARC and about one quarter through blood banks affiliated with the CCBC. The remainder are donated through community and hospital blood banks. Therefore, the findings in this report reflect approximately three quarters of the blood donated in the United States.

HTLV-I/II seropositivity in units donated to the ARC and the CCBC was 0.014% and 0.021%, respectively. These rates are similar to those for human immunodeficiency virus (HIV) (*7*) and are only about 10% of those for hepatitis C virus (*8*), suggesting that the prevalence of HTLV-I/II infection in the U.S. population is low. Decreased HTLV-I/II seropositivity rates in both the ARC and the CCBC systems, particularly in the last quarter of 1989 (Table 1), reflect the exclusion of blood donors who test positive.

Differences in HTLV-I/II seropositivity between the ARC and the CCBC systems (Table 1) and both within and between regions (Figure 1) probably reflect characteristics of the specific populations included in each system. Both systems report the highest rates from the Pacific region; for the CCBC, this observation reflects in part the inclusion of Hawaii, which has a substantial number of Japanese-American blood donors.

Findings from the ARC suggest that females and blacks, Hispanics, and Asians are more likely to be HTLV-I/II–seropositive than males and whites, respectively. Potential risk factors for seropositivity also include Japanese and Caribbean ancestry, history of sexual contact with persons from Japan and the Caribbean, IV-drug use, and

**FIGURE 1. Confirmed HTLV-I/II seropositivity rate,* by region† — United States, December 1988–December 1989**




*Per 100,000 blood donations.

†NE = New England; MA = Mid-Atlantic; ENC = East North Central; WNC = West North Central; SA = South Atlantic; ESC = East South Central; WSC = West South Central; MT = Mountain; PAC = Pacific (including Alaska and Hawaii).

§Data available for January–December 1989.

*HTLV-I Screening – Continued*

history of sexual contact with an IVDU. Such risk factors are consistent with current knowledge concerning HTLV-I and HTLV-II, but the prevalence of these possible risk factors in the overall donor population is unknown.

Because of the low prevalence of HTLV-I/II seropositivity in the blood donor population, the positive predictive value of a repeatably reactive screening test (i.e., the percentage of reactive tests that confirm as HTLV-I/II–seropositive) is low in both blood systems, emphasizing the need for confirmatory testing of EIA-reactive specimens (*9*). Therefore, persons should not be informed that they are infected with HTLV-I/II unless screening-test reactivity is confirmed by supplemental tests (*1,10*). The reasons for reactive screening tests in specimens that do not confirm as HTLV-I/II–seropositive are unknown; in rare cases, repeat testing of these specimens, or testing of specimens obtained later from the same person, demonstrate seropositivity for HTLV-I/II. Cross-reactivity with HIV does not occur when licensed screening tests are performed properly.

The limited PCR data suggest that approximately half of HTLV-I/II–seropositive donors are infected with HTLV-I, and half with HTLV-II. Based on PCR analysis, a low percentage of seropositive donors were not infected with either virus. Although this finding could indicate that these donors are not infected, it more likely reflects limitations of the sensitivity of the technique, because fewer than one in 100,000 cells may be infected with HTLV-I and HTLV-II in asymptomatically infected persons (CDC, unpublished data). A serologic test capable of differentiating HTLV-I from HTLV-II would be helpful for counseling purposes, since HTLV-II has not been consistently associated with any diseases. Peptide assays that distinguish between antibodies to HTLV-I and HTLV-II are under investigation (*6*).

Since tests for distinguishing HTLV-I from HTLV-II are not routinely available, blood donors and others confirmed to be seropositive for HTLV-I/II are counseled as though they were infected with HTLV-I. In addition to being informed of HTLV-I disease associations, they should be counseled not to donate blood or other organs, not to share needles, and not to breastfeed infants. Counseling regarding sexual behavior must be individualized and should take into account such factors as number of sex partners, age and serologic status of a monogamous sex partner, and the likelihood that an infected sex partner will develop disease if infected (*10*).

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## Decline in *Haemophilus influenzae* Type b Meningitis — Seattle-King County, Washington, 1984–1989

The first vaccines licensed in the United States for prevention of *Haemophilus influenzae* type b (Hib) disease were composed of the capsular polysaccharide of Hib, polyribosylribitol phosphate (PRP). The vaccines, licensed in 1985, were moderately effective in preventing Hib disease in children aged 24–59 months (*1*). In December 1987, the first Hib conjugate vaccine was licensed. The vaccine was recommended for use in children aged 18–59 months to prevent meningitis and other forms of invasive disease caused by Hib. This report summarizes surveillance for Hib meningitis and provides data on the use of Hib vaccine in Seattle-King County, Washington, where Hib meningitis surveillance methods have remained the same since 1984.

In 1989, active surveillance and passive reporting identified 10 cases of culture-confirmed Hib meningitis in children aged ≤83 months in Seattle-King County. These 10 cases represented a 73% decline from the annual average of 37 cases for 1984–1988 (Table 1). Moreover, since December 1987, the number and proportion of reported cases among children aged 24–83 months has declined: in 1988, children in this age group accounted for 6% of all cases reported; in 1989, 0; and in 1990 (through October), 5%. In comparison, from 1984–1987, this age group accounted for an annual average of 21% of all cases ($p = 0.1$, $p < 0.04$, and $p < 0.03$, respectively).

From 1986 through 1989, approximately 18% of the children with Hib meningitis had been immunized with PRP vaccine several weeks to months before disease onset; one child had been immunized with Hib conjugate vaccine 2 days before disease onset.

From 1987 through 1989, use of Hib vaccines increased substantially in Seattle-King County: in 1989, the health department administered 4675 doses, a fourfold increase over the 1114 doses administered in 1987. Community use was also substantial in 1988: at least 27,725 doses of Hib conjugate vaccine were ordered by the private health-care community that year. Approximately 20,000 children reached the eligible age (i.e., 18 months) for conjugate vaccine each year.

**TABLE 1. Cases of *Haemophilus influenzae* type b meningitis in children ≤83 months of age, by age of child and year of report — Seattle-King County, Washington, 1984–1989**

| Age (mos) | Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 (Jan–Oct) |
| 0–17 | 25 | 31 | 25 | 25 | 24 | 10 | 17 |
| 18–23 | 5 | 6 | 6 | 0 | 6 | 0 | 2 |
| 24–83 | 7 | 7 | 12 | 6 | 2 | 0 | 1 |
| **Total** | **37** | **44** | **43** | **31** | **32** | **10** | **20** |

*Meningitis – Continued*

*Reported by: J Boase, R Alexander, Seattle-King County Dept of Public Health, Washington. Meningitis and Special Pathogens Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.*

**Editorial Note:** Several factors may have contributed to the extensive use of Hib conjugate vaccine in Seattle. Hib vaccine use has been supported by public- and private-sector health-care providers. The Washington Department of Health has provided Hib vaccines at no cost to county health departments and to private providers. In addition, Hib vaccine is included on the health department's computerized vaccination reminder system.

The findings in this report suggest that Hib vaccination programs are effective in preventing Hib meningitis. Because the incidence of Hib meningitis varies by year (*2*), comparisons between years were based on the proportion of cases occurring in different age groups during 1984–1987 and proportions for 1988, 1989, and 1990. Statistical differences in these proportions occurred only among children aged 24–83 months (the group for which the Hib conjugate and polysaccharide vaccines are recommended) during a time when vaccine use had increased substantially. The single case in a child immunized with the Hib Conjugate Vaccine occurred before a protective immunologic response could be expected (i.e., 10–14 days after vaccination) and therefore does not represent a vaccine failure.

In general, substantial reductions in Hib disease rates have not been documented in children in age groups for which the Hib conjugate vaccines were licensed, possibly because of low vaccine coverage rates. Recent licensure of Hib conjugate vaccines for use in infants beginning at 2 months of age to be given concomitantly with diphtheria and tetanus toxoids and pertussis vaccine may help to increase coverage (*3,4*). Use of the conjugate vaccines in infants should substantially reduce rates of Hib disease since most Hib infections occur in children aged 2–18 months. This report suggests that an aggressive approach to immunization by public health organizations and private health-care providers may increase coverage and prevent disease.

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## *Notices to Readers*

### Food and Drug Administration Approval of Use of a Haemophilus b Conjugate Vaccine for Infants

On December 13, 1990, the Food and Drug Administration (FDA) approved the Haemophilus b Conjugate Vaccine (Meningococcal Protein Conjugate) (PRP-OMP) (manufactured by Merck Sharpe and Dohme and distributed as PedvaxHIB). This vaccine is approved for use in a two-dose primary immunization schedule for infants at 2 and 4 months of age, with a booster dose at 12 months of age. Previously unvaccinated infants 5–10 months of age should receive two doses of PedvaxHIB

*Haemophilus b Conjugate Vaccine — Continued*

2 months apart and a booster dose at 12 months of age. Children 11–14 months of age not previously vaccinated should receive two doses 2 months apart. Previously unvaccinated children 15–60 months of age should receive one dose and do not require a booster. This dosing schedule differs from that for the Haemophilus b Conjugate Vaccine (Diphtheria $CRM_{197}$ Protein Conjugate) (HbOC) licensed for infant use in October 1990 (*1*).

*Haemophilus influenzae* type b (Hib) is the major cause of bacterial meningitis in children <5 years of age, with the peak incidence in children <1 year of age (*2*). The principal efficacy trial for PRP-OMP was conducted in approximately 5000 Native American infants in Arizona and New Mexico, half of whom received the vaccine in a prospective placebo-controlled study (M. Santosham, personal communication, 1990). A total of 3486 infants completed the primary two-dose regimen. Fourteen cases of Hib invasive disease occurred in unvaccinated children, compared with one case in fully vaccinated children, indicating an efficacy of 93% (95% confidence interval = 53%–99%). The Immunization Practices Advisory Committee will issue a complete statement on this vaccine.

*Reported by: Center for Biologics Evaluation and Research, Food and Drug Administration. Center for Infectious Diseases; Center for Prevention Svcs, CDC.*

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## Extension of Filing Deadline for National Vaccine Injury Compensation Program

The filing deadline for childhood vaccine-related injuries occurring before October 1, 1988, has been extended until January 31, 1991. Petitioners should write the Clerk, U.S. Claims Court, 717 Madison Place, NW, Washington, DC 20005.

## Combined Issues of *MMWR*

A December 28, 1990, issue of *MMWR* will not be published. The next issue will be Volume 39, Numbers 51 and 52, dated January 4, 1991, and will include the figure and tables on notifiable diseases and deaths for the weeks ending December 22 and December 29, 1990.

The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

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. Accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials, as well as matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Mailstop C-08, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.



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