CENTERS FOR DISEASE CONTROL

March 22, 1991 / Vol. 40 / No. 11

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT



*Current Trends*

# Update: Surveillance of Outbreaks — United States, 1990

Although disease outbreaks are often preventable public health problems, no uniform national system exists in the United States for surveillance of outbreaks. In 1988, CDC's Epidemiology Program Office participated with the epidemiology programs in four states (Maryland, New York, Oklahoma, and Washington) in a 5-month trial of an electronic system for the timely surveillance of outbreaks (*1* ). This report updates the initial trial by summarizing a pilot project of surveillance of outbreaks in nine states—Maryland, Mississippi, Missouri, New York, Oklahoma, Rhode Island, South Dakota, Vermont, and Washington.

The project's objective is to develop and evaluate a simple, timely electronic system of surveillance of outbreaks. From July 1, 1990, through June 30, 1991, the epidemiology programs in the participating states are conducting surveillance of all reported outbreaks (or epidemics) by using a standardized computer form to record the data and electronic telecommunications to transmit the records weekly to CDC. In July 1991, each participating state will complete an evaluation of the system. For this pilot project, an outbreak is defined as "a recent or sudden excess of cases of a specific disease or clinical syndrome. For a foodborne or waterborne outbreak, n≥2 persons ill; for other outbreaks, n≥3 persons ill."

From July through December 1990, the nine states reported 233 outbreaks involving 6241 cases. The number of reported outbreaks per month ranged from 33 in December to a peak of 52 in August. Fifty-eight (25%) outbreaks occurred following private gatherings or in the general community; 53 (23%) were associated with restaurants, resorts, or hotels; 47 (20%) with camps, schools, or child day care centers; 43 (18%) with medical-care settings, nursing homes, or other long-term care facilities; and 32 (14%) with other settings. Of the 176 (76%) outbreaks for which a suspected mode of transmission was reported, 102 (58%) were foodborne. State epidemiologists and/or their staff provided consultation for 122 (52%) outbreaks and either provided on-site assistance or investigated another 76 (33%). For 20 (9%), investigators were assisted by CDC epidemiologists who were either based at CDC headquarters or directly assigned to state or local health departments.

For each of 131 (56%) outbreaks, ≥10 cases were reported. These outbreaks accounted for 5754 reported cases and nine deaths. For 12 outbreaks, ≥100 cases

*Surveillance of Outbreaks — Continued*

were reported. The largest (468 cases) was an outbreak of acute gastrointestinal illness of unknown etiology (AGI) among persons attending a catered turkey dinner in November at their workplace in Oklahoma. The most commonly suspected causes of these larger outbreaks were AGI (55 [42%] outbreaks), *Shigella* (16 [12%]), and *Salmonella* (14 [11%])—of which *Salmonella enteritidis* was the suspected causative agent in nine outbreaks. In 55 (42%) of these 131 outbreaks, foodborne transmission was suspected; of these, 24 (44%) were associated with restaurants, resorts, or hotels. The rate of reported large outbreaks per million population for the 6-month period ranged from 0.8 in Mississippi to 14.1 in Vermont (Table 1) (*2*).

The pilot system also collects data on single case reports that may require epidemic control or prevention measures and on toxic exposures that may require similar control/prevention measures, even when no illness is reported. Among 64 case reports, the most commonly suspected cause of illness was hepatitis A virus (32 [50%]). Twenty-seven hepatitis A cases occurred among commercial food handlers; of these, 21 (78%) were reported to the state health department within 2 weeks of onset. Of the 18 such cases that were reported from New York and Oklahoma, nine required and received follow-up epidemic prevention measures, including immune globulin prophylaxis for co-workers, recommendations for prophylaxis for patrons, or announcements to educate the public about risks from exposure. Seven environmental exposures were reported; the highest number of illnesses (six) resulting from such exposures occurred in Missouri. These illnesses were associated with possible carbon monoxide exposure in an office building with a faulty furnace exhaust system.

*Reported by: C Groves, J Taylor, D Dwyer, E Israel, MD, State Epidemiologist, Maryland State Dept of Health and Mental Hygiene. B Brackin, M Currier, FE Thompson, MD, State Epidemiologist, Mississippi State Dept of Health. MF Bright, M Fobbs, HD Donnell, Jr, MD, State Epidemiologist, Missouri Dept of Health. P Drabkin, SF Kondracki, GS Birkhead, DL Morse, MD, State Epidemiologist, New York State Dept of Health. SJ McNabb, GR Istre, MD, State Epidemiologist, Oklahoma State Dept of Health. M Rittmann, TT Gilbert, BA DeBuono, MD, State Epidemiologist, Rhode Island Dept of Health. L Schaefer, KA Senger, State Epidemiologist, South Dakota State Dept of Health. CJ Greene, RL Vogt, MD, State Epidemiologist, Vermont Dept*

**TABLE 1. Number and rate* of reported large† outbreaks — participating states, July 1–December 31, 1990**

| State | No. outbreaks | Rate |
|---|---|---|
| Vermont | 8 | 14.1 |
| Maryland | 37 | 7.9 |
| South Dakota | 4 | 5.6 |
| Oklahoma | 11 | 3.4 |
| New York§ | 35 | 3.3 |
| Washington | 12 | 2.5 |
| Missouri | 13 | 2.5 |
| Rhode Island | 2 | 2.0 |
| Mississippi | 2 | 0.8 |
| Other¶ | 2 | — |
| **Total** | **126** | |

*Per million population.
†≥10 persons ill.
§Does not include the population of New York City or five outbreaks reported from New York City.
¶Two of the reported outbreaks that involved residents of participating states occurred out of state.

*Surveillance of Outbreaks — Continued*

*of Health. M Chadden, JM Kobayashi, MD, State Epidemiologist, Washington Dept of Health. Div of Field Epidemiology and Div of Surveillance and Epidemiology, Epidemiology Program Office, CDC.*

**Editorial Note:** The national system of notifiable disease reporting (presented weekly in *MMWR* Tables I, II, and III) provides surveillance data on many diseases that can cause outbreaks or epidemics; except for certain specific problems (e.g., foodborne outbreaks [*3* ]), no national surveillance for outbreaks exists. A system that focuses surveillance efforts on outbreak detection may enhance efforts to identify preventable factors that increase the risk for outbreaks (*4* ), even when the causative agent of an outbreak is not identified. Surveillance for outbreaks that occur in settings where outbreaks are preventable (e.g., restaurants) may assist in monitoring the effectiveness of outbreak control and prevention measures. For example, before this project began, a retrospective study in Washington indicated that low scores on routine inspections in restaurants were predictive of increased risk for foodborne outbreaks (*5* ). Surveillance can also provide information on both the burden of disease from outbreaks and the resources required by state and local health departments to respond to outbreaks. In addition, data from surveillance of sentinel case reports or environmental/occupational exposures may assist in determining whether reporting is timely enough for epidemic prevention and/or control measures.

In this pilot project, the rates of larger outbreaks per million population vary substantially by state; reasons for this variation may include the relatively small number of outbreaks detected and differences in the completeness of reporting. Surveillance for a more extended period could provide a basis for estimating an "expected" incidence of outbreaks, which could then assist states in assessing completeness of reporting or adequacy of prevention and control measures.

Evaluations of the pilot project by each state will further assess strengths and limitations of this approach to outbreak surveillance. In particular, the assessment can examine the basic attributes of the system (*6* ), such as timeliness of reporting and its relation to the need for information on final case counts, etiologic agents, and modes of transmission. Because simplicity of conducting surveillance must be considered in the context of limited resources, a national system of outbreak surveillance could be integrated with the existing electronic system of notifiable disease surveillance.

*References*

1. CDC. Surveillance for epidemics—United States. MMWR 1989;38:694–6.
2. Bureau of the Census. State population and household estimates: July 1, 1989. Washington, DC: US Department of Commerce, Bureau of the Census, 1990. (Current population reports; series P-25, no. 1058).
3. Bean NH, Griffin PM, Goulding JS, Ivey CB. Foodborne disease outbreaks, 5-year summary, 1983–1987. In: CDC surveillance summaries, March 1990. MMWR 1990;39(no. SS-1):15–57.
4. St Louis ME, Morse DL, Potter ME, et al. The emergence of grade A shell eggs as a major source of *Salmonella enteritidis* infections: new implications for the control of salmonellosis. JAMA 1988;259:2103–7.
5. Irwin K, Ballard J, Grendon J, Kobayashi J. Results of routine restaurant inspections can predict outbreaks of foodborne illness: the Seattle-King County experience. Am J Public Health 1989;79:586–90.
6. CDC. Guidelines for evaluating surveillance systems. MMWR 1988;37(no. S-5).

*Epidemiologic Notes and Reports*

# Update: *Yersinia enterocolitica* Bacteremia and Endotoxin Shock Associated with Red Blood Cell Transfusions — United States, 1991

From April 1987 through August 1988, four cases of *Yersinia enterocolitica* bacteremia associated with red blood cell (RBC) transfusions were reported to CDC (*1,2*). This report summarizes findings from the investigation of an additional six cases reported from six different states from January 1989 through February 1991 (*2*).

Patients, blood donors, and blood processing centers involved were in Alabama, Colorado, Georgia, Minnesota, Mississippi, New Mexico, Ohio, Oklahoma, and Tennessee. Each of the six patients developed fever and hypotension within 50 minutes after the start of transfusion. One patient developed explosive diarrhea within 10 minutes after the start of transfusion. Four of the six patients died from complications from blood contamination; the interval between transfusion and death ranged from 12 hours to 37 days.

All cultures and Gram stains of tubing segments from blood bags were negative. In each case, however, cultures of residual RBCs from the bag grew only one serotype of *Y. enterocolitica*; serotypes involved included 0:5,27 (four cases), 0:3 (one case), and 0:20 (one case). Cultures of blood from three patients were positive for the same *Y. enterocolitica* serotype as the isolate from the respective blood bag. Cultures of blood were negative for two patients (one of whom was already receiving antimicrobial therapy to which the organism was sensitive); blood from one patient was not cultured.

The RBC units had been stored at 39.2 F (4 C) for a mean of 33 days (range: 25–42 days) before transfusion. One of the units had been washed 20 hours before transfusion. All donors were interviewed; three of the donors gave histories of a diarrheal illness within 30 days of donation, one had onset of diarrheal illness on the day of donation, and two reported no diarrheal illness.

*Reported by: CH Woernle, MD, State Epidemiologist, Alabama Dept of Public Health. RE Hoffman, MD, State Epidemiologist, Colorado Dept of Health. JD Smith, Georgia Dept of Human Resources. MT Osterholm, PhD, State Epidemiologist, Minnesota Dept of Health. FE Thompson, MD, State Epidemiologist, Mississippi State Dept of Health. CM Sewell, DrPH, State Epidemiologist, New Mexico Health and Environment Dept. TJ Halpin, MD, State Epidemiologist, Ohio Dept of Health. GR Istre, MD, State Epidemiologist, Oklahoma State Dept of Health. R Hutcheson, MD, State Epidemiologist, Tennessee Dept of Health and Environment. Office of Compliance, Center for Biologics Evaluation and Research, Food and Drug Administration. Div of Mycotic and Bacterial Diseases and Hospital Infections Program, Center for Infectious Diseases, CDC.*

**Editorial Note:** Bacteremia is a rare complication of blood transfusion, but it should be considered whenever a severe unexplained transfusion reaction occurs—particularly when fever and hypotension occur. From April 1987 through February 1991, seven deaths occurred among the 10 reported patients with RBC transfusion-associated *Y. enterocolitica* in the United States. During this period, an additional five cases were reported outside the United States (three in France [*3–5*] and one each in Australia [*6*] and Belgium [*7*]).

From April 1987 through February 1991, *Y. enterocolitica* was responsible for seven of the eight total transfusion-associated fatalities linked to bacterial contamination of RBCs that had been reported to the Food and Drug Administration (FDA) (FDA, unpublished data). Because nonfatal transfusion-associated *Y. enterocolitica* bacteremia is not required to be reported in the United States, its incidence is unknown. The reason for the apparent increase in reported transfusion-associated *Y. enterocolitica* bacteremia is unknown. However, surveillance data suggest that the incidence of *Y. enterocolitica* gastroenteritis may be increasing and the serotypes involved may be changing (CDC, unpublished data).

The investigation reported here suggests that blood contamination resulted from asymptomatic *Y. enterocolitica* bacteremia in the blood donors at the time of donation. Under conditions of cold storage and iron enrichment from RBCs, *Y. enterocolitica* can proliferate after a lag phase of 10–20 days (*8*). The absence of bacteria in the low-volume tubing segments tested is consistent with a low level of bacterial contamination at the time of collection.

The recent appearance of *Y. enterocolitica* as a bacterial contaminant of RBCs underscores the need for careful monitoring during the infusion of all blood components. CDC, FDA, and representatives of blood banking and medical organizations are assessing alternatives to prevent septic and/or endotoxic shock resulting from *Y. enterocolitica* contamination of RBCs. Potential measures include: 1) screening blood donors for a recent history of gastrointestinal illness; 2) reducing the shelf life of RBCs; and 3) testing RBC units ≥25 days old for endotoxin or the presence of bacterial organisms. However, of the six donors in this report, three would not have been excluded by a program to screen donors for a history of gastrointestinal illness; moreover, such a program could potentially exclude 1%–13% of the current donor population (FDA, unpublished data).

Reducing the shelf life of RBCs to 25 days might reduce RBC availability at blood centers, particularly those that import blood, and result in shortages during critical periods of the year when blood products are already in short supply. In one study, 5%–61% (median: 16.5%) of all RBC units transfused from 10 blood centers were ≥28 days old (FDA, unpublished data).

Recent data suggest that testing of older units (i.e., ≥25 days old) for endotoxin and/or microorganisms may be a simple and rapid method to determine endotoxin or microbial contamination (CDC unpublished data). When RBCs were inoculated with low levels (1 colony-forming unit [CFU]/mL) of *Y. enterocolitica*, ≥1 ng/mL of endotoxin was detected by 26 days when bacterial counts were $10^7$–$10^8$ CFU/mL, and hematologic stains detected bacteria by day 21 when counts were $10^5$ CFU/mL. The preliminary results of this pilot study suggest that the screening of all blood units ≥25 days old by the acridine-orange, Wright, or Wright-Giemsa stains may be a simple and effective method to detect *Y. enterocolitica* contamination of RBCs.

When transfusion-associated bacteremia or endotoxemia is suspected, the residual blood in the bag should be examined by a hematologic stain (i.e., acridine-orange, Wright, or Wright-Giemsa), and blood in the bag and samples of the recipient's blood should be cultured (*6,9*). The blood bag and bacterial isolates should be saved until an investigation can be completed. Physicians are requested to report, through state health departments, transfusion-associated *Y. enterocolitica* infections to the Epidemiology Branch, Hospital Infections Program, Center for Infectious Diseases, CDC; telephone (404) 639-3407. Fatalities must be reported by the transfusion service to the Office of Compliance, Center for Biologics Evaluation and Research, FDA; telephone (301) 295-8191.

Yersinia enterocolitica — *Continued*

*References*

1. CDC. *Yersinia enterocolitica* bacteremia and endotoxin shock associated with red blood cell transfusion—United States, 1987–1988. MMWR 1988;37:577–8.
2. Tipple MA, Bland LA, Murphy JJ, et al. Sepsis associated with transfusion of red cells contaminated with *Yersinia enterocolitica.* Transfusion 1990;30:207–13.
3. Mollaret HH, Wallet P, Gilton A, Carniel E, Duedari N. *Yersinia enterocolitica* transfusional septic shock: analysis of 19 cases. Médecine et Maladies Infectieuses 1989;19:186–92.
4. Janot C, Briquel ME, Streiff F, Burdin JC. Infectious complications due to transfusion acquired *Yersinia enterocolitica.* Transfusion 1989;29:372–3.
5. Janot C, Burdin JC, Briquel ME, Streiff F, Gaucher P. Post-transfusion infectious complications caused by *Yersinia enterocolitica.* Rev Fr Transfus Immunohematol 1988;31:661–5.
6. Elrick J. A case study—fatal gram-negative shock following blood transfusion. Yersinia News 1988;5:1–2.
7. Jacobs J, Jamaer D, Vandeven J, Wouters M, Vermylen C, Vandepitte J. *Yersinia enterocolitica* in donor blood: a case report and review. J Clin Microbiol 1989;27:1119–21.
8. Arduino MJ, Bland LA, Tipple MA, Aguero SM, Favero MS, Jarvis WR. Growth and endotoxin production of *Yersinia enterocolitica* and *Enterobacter agglomerans* in packed erythrocytes. J Clin Microbiol 1989;27:1483–5
9. Simmons BP. CDC guidelines for the prevention and control of nosocomial infections: guideline for prevention of intravascular infections. Am J Infect Control 1983;11:183–99.

## *Current Trends*

# Alcohol-Related Traffic Fatalities Among Youth and Young Adults — United States, 1982–1989

Unintentional injuries account for approximately half of all deaths among young persons aged 15–24 years in the United States; of these deaths, approximately 75% involve motor vehicles (*1*). Although alcohol use increases the risk for a motor vehicle crash for all drivers, for young drivers the risk begins to increase at very low blood alcohol concentrations (BACs) (*2–4*). Moreover, in young persons who drive after drinking, the relative risk for crash involvement is greater at all BAC levels than it is for older drinking drivers (*5*). This report summarizes data from the National Highway Traffic Safety Administration's (NHTSA) Fatal Accident Reporting System on trends in alcohol-related traffic fatalities (ARTFs) in the United States from 1982 through 1989; trends are presented for three groups of young persons (15- to 17-, 18- to 20-, and 21- to 24-year-olds) and are compared with those for adults aged ≥25 years.

NHTSA considers a fatal traffic crash to be alcohol-related if either a driver or nonoccupant (e.g., pedestrian) had a BAC ≥0.01 g/dL in a police-reported traffic crash. NHTSA defines a BAC ≥0.01 g/dL but <0.10 g/dL as a low level of alcohol and a BAC ≥0.10 g/dL (the legal level of intoxication in most states) as indicating intoxication. Because BAC levels are not available for all persons involved in fatal crashes, NHTSA estimates the number of ARTFs based on a discriminant analysis of information from all cases for which driver or nonoccupant BAC data are available (*6*). In this report, "alcohol-impaired" refers to drivers with a BAC ≥0.01 g/dL. Statistics on drivers refer only to drivers involved in fatal crashes.

From 1982 through 1989, the estimated percentage of ARTFs decreased for all four age groups (Table 1). The reductions in the proportion of ARTFs were greater for persons aged 15–17 years (31%) and 18–20 years (22%) than for those 21–24 years

*Alcohol-Related Traffic Fatalities — Continued*

(7%) and ≥25 years (11%). However, among adults aged ≥25 years, the estimated number of fatalities increased, while for the three younger age groups, the number decreased (Table 1).

During 1982–1989, the estimated percentage of alcohol-impaired drivers involved in fatal crashes also decreased in all four age groups (Table 2). Decreases in both the total and average annual proportion of ARTFs were greater for 15- to 17-year-olds (40% and 7%, respectively) and 18- to 20-year-olds (28% and 5%, respectively) than for 21- to 24-year-olds (13% and 2%, respectively) and ≥25-year-olds (14% and 2%, respectively).

Driver involvement rates in fatal crashes per 100,000 licensed drivers were lowest for all BACs for adults ≥25 years (Table 3). Rates were high for young drivers aged 15–17 years, even in crashes where no alcohol was present. Drivers aged <25 years

*(Continued on page 185)*

**TABLE 1. Estimated number and percentage* of total traffic fatalities involving at least one person† with a blood alcohol concentration ≥0.01%, by year and age group — United States, 1982–1989**

| | Age group (yrs) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 15–17 | | 18–20 | | 21–24 | | ≥25 | |
| Year | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| 1982 | 1,557 | (53.6) | 3,824 | (68.3) | 4,593 | (71.7) | 14,094 | (55.0) |
| 1983 | 1,342 | (48.9) | 3,404 | (65.9) | 4,331 | (71.9) | 13,576 | (53.5) |
| 1984 | 1,354 | (47.2) | 3,364 | (64.3) | 4,398 | (69.9) | 13,674 | (51.5) |
| 1985 | 1,270 | (44.8) | 2,914 | (60.3) | 4,182 | (67.6) | 13,400 | (50.4) |
| 1986 | 1,514 | (44.6) | 3,124 | (60.7) | 4,306 | (68.8) | 14,124 | (50.7) |
| 1987 | 1,400 | (42.1) | 2,811 | (57.5) | 3,937 | (66.5) | 14,561 | (50.5) |
| 1988 | 1,240 | (40.2) | 2,947 | (56.7) | 3,934 | (67.1) | 14,571 | (49.4) |
| 1989 | 1,030 | (36.9) | 2,505 | (53.3) | 3,452 | (66.6) | 14,539 | (49.2) |

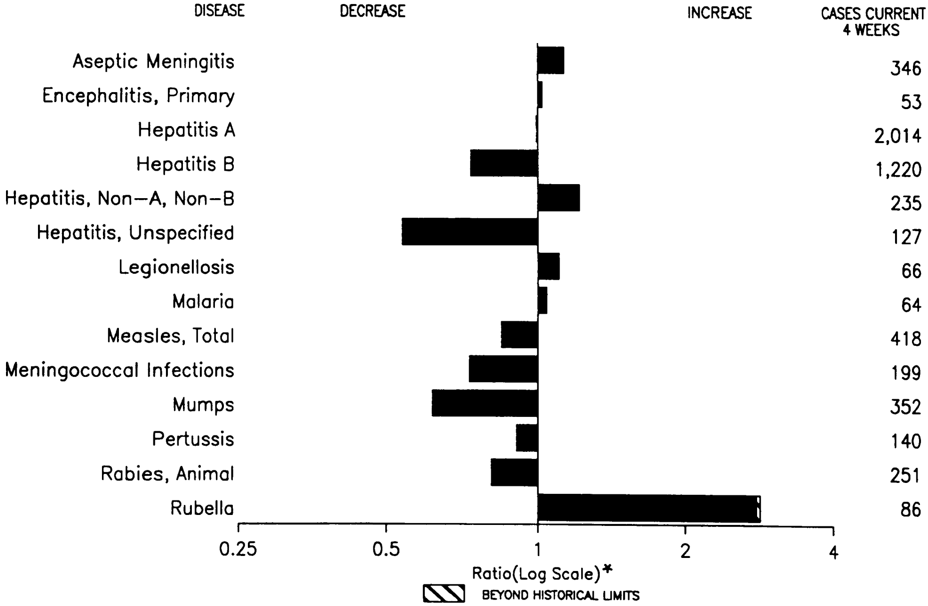
*Percentage of persons in each age group who died in an alcohol-related crash.
†Driver or nonoccupant.
Source: Fatal Accident Reporting System, National Highway Traffic Safety Administration.

**TABLE 2. Estimated number and percentage* of drivers† with a blood alcohol concentration ≥0.01% involved in fatal crashes, by year and age group — United States, 1982–1989**

| | Age group (yrs) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 15–17 | | 18–20 | | 21–24 | | ≥25 | |
| Year | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| 1982 | 910 | (31.5) | 3,468 | (48.3) | 4,645 | (51.5) | 12,168 | (34.2) |
| 1983 | 826 | (29.1) | 3,141 | (46.8) | 4,270 | (50.6) | 11,723 | (33.1) |
| 1984 | 799 | (26.8) | 3,128 | (44.3) | 4,392 | (49.0) | 11,741 | (31.5) |
| 1985 | 734 | (24.0) | 2,653 | (40.2) | 4,156 | (45.9) | 11,451 | (30.2) |
| 1986 | 910 | (25.4) | 2,850 | (41.4) | 4,313 | (47.2) | 12,008 | (30.5) |
| 1987 | 853 | (23.6) | 2,509 | (38.1) | 4,004 | (45.5) | 12,457 | (30.3) |
| 1988 | 776 | (22.4) | 2,562 | (36.9) | 3,935 | (46.0) | 12,624 | (30.1) |
| 1989 | 592 | (18.9) | 2,269 | (34.8) | 3,476 | (45.0) | 12,278 | (29.5) |

*Percentage of involved drivers in each age group who were alcohol-impaired.
†Regardless of whether driver was killed.
Source: Fatal Accident Reporting System, National Highway Traffic Safety Administration.

**FIGURE I. Notifiable disease reports, comparison of 4-week totals ending March 16, 1991, with historical data — United States**




*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

**TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending March 16, 1991 (11th Week)**

| | Cum. 1991 | | Cum. 1991 |
|---|---|---|---|
| AIDS | 8,765 | Measles: imported | 22 |
| Anthrax | - | indigenous | 1,006 |
| Botulism: Foodborne | 4 | Plague | - |
| Infant | 10 | Poliomyelitis, Paralytic* | - |
| Other | - | Psittacosis | 13 |
| Brucellosis | 12 | Rabies, human | - |
| Cholera | - | Syphilis, primary & secondary | 8,748 |
| Congenital rubella syndrome | 4 | Syphilis, congenital, age < 1 year | - |
| Diphtheria | 1 | Tetanus | - |
| Encephalitis, post-infectious | 10 | Toxic shock syndrome | 78 |
| Gonorrhea | 115,993 | Trichinosis | - |
| *Haemophilus influenzae* (invasive disease) | 815 | Tuberculosis | 3,585 |
| Hansen Disease | 19 | Tularemia | 13 |
| Leptospirosis | 20 | Typhoid fever | 59 |
| Lyme Disease | 564 | Typhus fever, tickborne (RMSF) | 13 |

*No cases of suspected poliomyelitis have been reported in 1991; none of the 6 suspected cases in 1990 have been confirmed to date. Five of 13 suspected cases in 1989 were confirmed and all were vaccine associated.

# TABLE II. Cases of selected notifiable diseases, United States, weeks ending March 16, 1991, and March 17, 1990 (11th Week)

| Reporting Area | AIDS | Aseptic Menin-gitis | Encephalitis | | Gonorrhea | | Hepatitis (Viral), by type | | | | Legionel-losis | Lyme Disease |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Primary | Post-in-fectious | | | A | B | NA,NB | Unspeci-fied | | |
| | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1990 | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1991 |
| UNITED STATES | 8,765 | 1,009 | 107 | 10 | 115,993 | 144,030 | 5,166 | 3,119 | 681 | 287 | 217 | 564 |
| NEW ENGLAND | 404 | 49 | 8 | - | 3,555 | 4,240 | 124 | 192 | 41 | 10 | 22 | 40 |
| Maine | 15 | 2 | 3 | - | 21 | 58 | 4 | 1 | 1 | - | - | - |
| N.H. | 11 | 2 | - | - | 60 | 50 | 14 | 6 | 2 | - | 1 | 2 |
| Vt. | 6 | 3 | - | - | 14 | 15 | 5 | 1 | 1 | - | - | 1 |
| Mass. | 242 | 18 | 3 | - | 1,379 | 1,568 | 67 | 163 | 36 | 8 | 20 | 27 |
| R.I. | 13 | 21 | - | - | 231 | 224 | 18 | 7 | 1 | 2 | 1 | 10 |
| Conn. | 117 | 3 | 2 | - | 1,850 | 2,325 | 16 | 14 | - | - | - | - |
| MID. ATLANTIC | 2,745 | 141 | 5 | 4 | 12,870 | 17,180 | 385 | 270 | 46 | 8 | 57 | 369 |
| Upstate N.Y. | 402 | 61 | 4 | 3 | 2,427 | 2,908 | 244 | 123 | 32 | 3 | 21 | 337 |
| N.Y. City | 1,583 | 9 | - | - | 3,197 | 8,743 | 25 | 6 | - | - | 3 | - |
| N.J. | 483 | - | - | - | 2,529 | 3,109 | 45 | 77 | 5 | - | 6 | 32 |
| Pa. | 277 | 71 | 1 | 1 | 4,717 | 2,420 | 71 | 64 | 9 | 5 | 27 | - |
| E.N. CENTRAL | 595 | 166 | 25 | 2 | 20,375 | 28,779 | 501 | 368 | 164 | 15 | 36 | 40 |
| Ohio | 102 | 61 | 7 | 1 | 5,456 | 8,744 | 114 | 84 | 43 | 6 | 18 | 26 |
| Ind. | 48 | 22 | 5 | 1 | 2,462 | 2,621 | 102 | 52 | 1 | - | 3 | - |
| Ill. | 307 | 15 | 3 | - | 6,477 | 8,789 | 108 | 15 | 3 | - | - | - |
| Mich. | 91 | 61 | 9 | - | 5,402 | 6,805 | 83 | 131 | 27 | 9 | 10 | 14 |
| Wis. | 47 | 7 | 1 | - | 578 | 1,820 | 94 | 86 | 90 | - | 5 | - |
| W.N. CENTRAL | 304 | 71 | 7 | - | 6,141 | 7,809 | 746 | 120 | 60 | 5 | 12 | 6 |
| Minn. | 67 | 12 | 5 | - | 659 | 925 | 80 | 9 | 5 | 1 | 2 | 2 |
| Iowa | 22 | 20 | - | - | 437 | 572 | 17 | 5 | 4 | - | - | 4 |
| Mo. | 160 | 27 | - | - | 3,807 | 4,491 | 162 | 94 | 50 | 3 | 7 | - |
| N. Dak. | 18 | - | - | - | 11 | 37 | 11 | 2 | - | 1 | - | - |
| S. Dak. | - | 4 | 2 | - | 97 | 46 | 332 | 1 | - | - | 1 | - |
| Nebr. | 14 | 7 | - | - | 404 | 379 | 122 | 8 | - | - | 2 | - |
| Kans. | 23 | 1 | - | - | 726 | 1,359 | 22 | 1 | 1 | - | - | - |
| S. ATLANTIC | 1,854 | 230 | 20 | 3 | 35,673 | 40,654 | 340 | 742 | 84 | 51 | 28 | 28 |
| Del. | 23 | 6 | - | - | 495 | 533 | 3 | 12 | 2 | 1 | - | 7 |
| Md. | 164 | 27 | 4 | - | 3,566 | 4,541 | 79 | 99 | 18 | 4 | 8 | 9 |
| D.C. | 135 | 8 | - | - | 2,424 | 2,065 | 23 | 20 | - | 1 | - | - |
| Va. | 128 | 44 | 4 | - | 3,279 | 4,010 | 44 | 56 | 5 | 35 | 2 | 7 |
| W. Va. | 9 | 2 | 1 | - | 272 | 270 | 6 | 20 | 1 | 3 | - | 1 |
| N.C. | 101 | 29 | 7 | - | 6,852 | 6,921 | 55 | 141 | 34 | - | 6 | 4 |
| S.C. | 80 | 10 | - | - | 2,697 | 3,563 | 10 | 180 | 15 | 2 | 7 | - |
| Ga. | 353 | 18 | 2 | 1 | 9,178 | 8,757 | 38 | 90 | 3 | - | 1 | - |
| Fla. | 861 | 86 | 2 | 2 | 6,910 | 9,994 | 82 | 124 | 6 | 5 | 4 | - |
| E.S. CENTRAL | 178 | 73 | 5 | - | 10,511 | 11,971 | 47 | 233 | 78 | 2 | 15 | 18 |
| Ky. | 33 | 20 | 2 | - | 1,059 | 1,407 | 8 | 46 | 5 | 2 | 8 | 11 |
| Tenn. | 55 | 16 | 2 | - | 4,019 | 3,591 | 26 | 159 | 70 | - | 5 | 4 |
| Ala. | 62 | 24 | 1 | - | 2,698 | 4,204 | 12 | 28 | 3 | - | 2 | 3 |
| Miss. | 28 | 13 | - | - | 2,735 | 2,769 | 1 | - | - | - | - | - |
| W.S. CENTRAL | 729 | 64 | 8 | - | 13,059 | 14,611 | 657 | 274 | 18 | 37 | 7 | 12 |
| Ark. | 28 | 26 | 1 | - | 1,625 | 1,992 | 101 | 13 | 1 | 2 | - | 7 |
| La. | 131 | 7 | 1 | - | 2,829 | 2,648 | 34 | 54 | 1 | 1 | 3 | - |
| Okla. | 27 | 1 | 3 | - | 1,359 | 1,325 | 95 | 66 | 12 | 6 | 4 | 5 |
| Tex. | 543 | 30 | 3 | - | 7,246 | 8,646 | 427 | 141 | 4 | 28 | - | - |
| MOUNTAIN | 225 | 45 | 8 | 1 | 2,243 | 3,224 | 903 | 209 | 33 | 59 | 24 | 2 |
| Mont. | 4 | 2 | - | - | 17 | 26 | 33 | 22 | 1 | 2 | - | - |
| Idaho | 3 | - | - | - | 28 | 20 | 13 | 25 | - | - | 3 | - |
| Wyo. | 3 | - | - | - | 26 | 35 | 57 | 3 | - | - | - | 2 |
| Colo. | 101 | 16 | 1 | 1 | 436 | 909 | 69 | 36 | 11 | 8 | 3 | - |
| N. Mex. | 11 | 6 | - | - | 233 | 221 | 274 | 29 | 2 | 19 | 1 | - |
| Ariz. | 55 | 14 | 7 | - | 963 | 1,317 | 320 | 46 | 4 | 25 | 9 | - |
| Utah | 11 | 2 | - | - | 88 | 91 | 76 | 7 | 5 | 5 | 4 | - |
| Nev. | 37 | 5 | - | - | 452 | 605 | 61 | 41 | 10 | - | 4 | - |
| PACIFIC | 1,731 | 170 | 21 | - | 11,566 | 15,562 | 1,463 | 711 | 157 | 100 | 16 | 49 |
| Wash. | 70 | - | - | - | 826 | 1,429 | 114 | 100 | 27 | 6 | 1 | - |
| Oreg. | 40 | - | - | - | 411 | 557 | 90 | 65 | 24 | 2 | 1 | - |
| Calif. | 1,570 | 154 | 21 | - | 9,999 | 13,214 | 1,225 | 529 | 99 | 91 | 13 | 49 |
| Alaska | 5 | 4 | - | - | 167 | 263 | 26 | 5 | 6 | 1 | - | - |
| Hawaii | 46 | 12 | - | - | 163 | 99 | 8 | 12 | 1 | - | 1 | - |
| Guam | - | - | - | - | - | 44 | - | - | - | - | - | - |
| P.R. | 350 | 44 | - | 1 | 105 | 278 | 19 | 101 | 19 | 11 | - | - |
| V.I. | 1 | - | - | - | 136 | 103 | - | 2 | - | - | - | - |
| Amer. Samoa | - | - | - | - | - | 35 | - | - | - | - | - | - |
| C.N.M.I. | - | - | - | - | - | 40 | - | - | - | - | - | - |

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

# TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending March 16, 1991, and March 17, 1990 (11th Week)

| Reporting Area | Malaria | Measles (Rubeola) | | | | | Menin-gococcal Infections | Mumps | | Pertussis | | | Rubella | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Indigenous | | Imported* | | Total | | | | | | | | | |
| | Cum. 1991 | 1991 | Cum. 1991 | 1991 | Cum. 1991 | Cum. 1990 | Cum. 1991 | 1991 | Cum. 1991 | 1991 | Cum. 1991 | Cum. 1990 | 1991 | Cum. 1991 | Cum. 1990 |
| UNITED STATES | 175 | 138 | 1,006 | - | 22 | 3,779 | 478 | 99 | 736 | 24 | 445 | 609 | 54 | 131 | 102 |
| NEW ENGLAND | 11 | 2 | 3 | - | 2 | 91 | 46 | 1 | 10 | - | 36 | 78 | - | 1 | 2 |
| Maine | - | - | - | - | - | 27 | 4 | - | - | - | 5 | 1 | - | - | - |
| N.H. | 1 | - | - | - | - | 7 | 6 | - | 2 | - | 11 | 7 | - | 1 | - |
| Vt. | 1 | 2 | 2 | - | - | 1 | 6 | - | - | - | 1 | 2 | - | - | - |
| Mass. | 6 | - | - | - | - | 2 | 23 | - | - | - | 18 | 63 | - | - | - |
| R.I. | 2 | - | - | - | - | 16 | - | - | 2 | - | - | - | - | - | 1 |
| Conn. | 1 | - | 1 | - | 2 | 38 | 7 | 1 | 6 | - | 1 | 5 | - | - | 1 |
| MID. ATLANTIC | 15 | 47 | 389 | - | - | 368 | 48 | 6 | 53 | 1 | 52 | 146 | 45 | 54 | 2 |
| Upstate N.Y. | 4 | - | - | - | - | 188 | 25 | 4 | 29 | 1 | 26 | 117 | 42 | 48 | 1 |
| N.Y. City | 3 | - | 60 | - | - | 35 | 2 | - | - | - | - | - | - | - | - |
| N.J. | 5 | - | 31 | - | - | 14 | 7 | - | 2 | - | 1 | 10 | - | - | - |
| Pa. | 3 | 47 | 298 | - | - | 131 | 14 | 2 | 22 | - | 25 | 19 | 3 | 6 | 1 |
| E.N. CENTRAL | 11 | 3 | 19 | - | 2 | 1,737 | 66 | 3 | 60 | 2 | 87 | 177 | - | 5 | 8 |
| Ohio | 3 | - | - | - | 1 | 136 | 24 | - | - | - | 34 | 26 | - | - | - |
| Ind. | 1 | - | - | - | - | 100 | 9 | - | 3 | 1 | 17 | 31 | - | 1 | - |
| Ill. | 2 | - | - | - | - | 746 | 15 | - | 33 | - | 15 | 60 | - | 2 | 8 |
| Mich. | 5 | 3 | 18 | - | - | 255 | 14 | 3 | 21 | 1 | 17 | 27 | - | 2 | - |
| Wis. | - | - | 1 | - | 1 | 500 | 4 | - | 3 | - | 4 | 33 | - | - | - |
| W.N. CENTRAL | 3 | - | 1 | - | 1 | 96 | 21 | 9 | 38 | - | 32 | 18 | - | 3 | - |
| Minn. | - | - | 1 | - | 1 | 28 | 6 | - | 2 | - | 11 | - | - | 2 | - |
| Iowa | 1 | - | - | - | - | 21 | 1 | 1 | 7 | - | 4 | 1 | - | - | - |
| Mo. | 2 | - | - | - | - | 47 | 10 | 2 | 4 | - | 12 | 13 | - | 1 | - |
| N. Dak. | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| S. Dak. | - | - | - | - | - | - | 1 | - | - | - | 1 | 1 | - | - | - |
| Nebr. | - | - | - | - | - | - | 2 | 1 | 3 | - | 4 | 1 | - | - | - |
| Kans. | - | - | - | - | - | - | 1 | 5 | 22 | - | - | 1 | - | - | - |
| S. ATLANTIC | 48 | 15 | 56 | - | 6 | 217 | 88 | 33 | 234 | 5 | 30 | 52 | 1 | 8 | 9 |
| Del. | - | 2 | 6 | - | - | 4 | - | 1 | 1 | - | - | 2 | - | - | - |
| Md. | 16 | 12 | 15 | - | - | 27 | 12 | 11 | 70 | 3 | 6 | 18 | 1 | 8 | - |
| D.C. | 3 | - | - | - | - | 1 | - | 1 | 4 | - | - | 1 | - | - | - |
| Va. | 7 | - | 1 | - | - | 11 | 8 | 4 | 18 | - | 3 | 4 | - | - | - |
| W. Va. | 1 | - | - | - | - | 6 | 4 | 1 | 6 | - | 6 | 5 | - | - | - |
| N.C. | 1 | - | - | - | - | 3 | 21 | 1 | 62 | - | 7 | 8 | - | - | - |
| S.C. | 4 | - | 12 | - | - | 1 | 13 | 2 | 41 | - | - | 3 | - | - | - |
| Ga. | 4 | - | - | - | - | 6 | 18 | 7 | 12 | 2 | 5 | 7 | - | - | - |
| Fla. | 12 | 1 | 22 | - | 6 | 158 | 12 | 5 | 20 | - | 3 | 4 | - | - | 9 |
| E.S. CENTRAL | 2 | - | 1 | - | - | 34 | 44 | 3 | 23 | 1 | 15 | 16 | - | - | 1 |
| Ky. | 1 | - | - | - | - | - | 21 | - | - | - | - | - | - | - | - |
| Tenn. | - | - | 1 | - | - | 17 | 10 | 2 | 12 | - | 7 | 5 | - | - | 1 |
| Ala. | 1 | - | - | - | - | 4 | 13 | - | 2 | 1 | 8 | 10 | - | - | - |
| Miss. | - | - | - | - | - | 13 | - | 1 | 9 | - | - | 1 | - | - | - |
| W.S. CENTRAL | 11 | - | - | - | 5 | 249 | 29 | 23 | 114 | - | 12 | 5 | - | 1 | - |
| Ark. | 1 | - | - | - | 5 | - | 7 | 11 | 19 | - | - | - | - | 1 | - |
| La. | 2 | - | - | - | - | - | 8 | - | 9 | - | 7 | 1 | - | - | - |
| Okla. | 1 | - | - | - | - | 39 | 2 | - | 1 | - | 5 | 4 | - | - | - |
| Tex. | 7 | - | - | - | - | 210 | 12 | 12 | 85 | - | - | - | - | - | - |
| MOUNTAIN | 9 | 2 | 96 | - | 4 | 101 | 22 | 10 | 38 | 9 | 77 | 54 | - | 1 | 3 |
| Mont. | 1 | - | - | - | - | - | 4 | - | - | - | - | - | - | - | - |
| Idaho | - | - | - | - | 1 | 3 | 4 | - | 2 | - | 17 | 2 | - | - | 3 |
| Wyo. | - | - | - | - | - | - | 1 | 2 | 2 | - | 3 | - | - | - | - |
| Colo. | 3 | - | - | - | 1 | 13 | 3 | 1 | 7 | 9 | 27 | 37 | - | - | - |
| N. Mex. | 1 | 2 | 64 | - | 2 | 22 | 4 | N | N | - | 12 | 2 | - | - | - |
| Ariz. | 4 | - | 25 | - | - | 45 | 5 | 2 | 19 | - | 8 | 7 | - | - | - |
| Utah | - | - | - | - | - | - | - | 5 | 8 | - | 10 | 3 | - | - | - |
| Nev. | - | - | 7 | - | - | 18 | 1 | - | - | - | - | 3 | - | 1 | - |
| PACIFIC | 65 | 69 | 441 | - | 2 | 886 | 114 | 11 | 166 | 6 | 104 | 63 | 8 | 58 | 77 |
| Wash. | 5 | - | - | - | - | 14 | 10 | 1 | 40 | - | 16 | 16 | - | - | - |
| Oreg. | 1 | 3 | 4 | - | - | 77 | 10 | N | N | - | 16 | 6 | - | - | - |
| Calif. | 57 | 65 | 434 | - | 2 | 755 | 91 | 10 | 117 | 1 | 49 | 37 | 8 | 57 | 73 |
| Alaska | - | - | - | - | - | 38 | 3 | - | 4 | - | 4 | - | - | - | - |
| Hawaii | 2 | 1 | 3 | - | - | 2 | - | - | 5 | 5 | 19 | 4 | - | 1 | 4 |
| Guam | - | U | - | U | - | - | - | U | - | U | - | - | U | - | - |
| P.R. | - | - | - | - | 1 | 47 | 11 | 2 | 5 | - | 6 | 4 | - | 1 | - |
| V.I. | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - |
| Amer. Samoa | - | U | - | U | - | - | - | U | - | U | - | - | U | - | - |
| C.N.M.I. | - | 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 II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending March 16, 1991, and March 17, 1990 (11th Week)**

| Reporting Area | Syphilis (Primary & Secondary) | | Toxic-shock Syndrome | Tuberculosis | | Tula-remia | Typhoid Fever | Typhus Fever (Tick-borne) (RMSF) | Rabies, Animal |
|---|---|---|---|---|---|---|---|---|---|
| | Cum. 1991 | Cum. 1990 | Cum. 1991 | Cum. 1991 | Cum. 1990 | Cum. 1991 | Cum. 1991 | Cum. 1991 | Cum. 1991 |
| UNITED STATES | 8,748 | 9,269 | 78 | 3,585 | 4,121 | 13 | 59 | 13 | 824 |
| NEW ENGLAND | 231 | 414 | 5 | 87 | 71 | - | 6 | 2 | 1 |
| Maine | - | 3 | 3 | - | - | - | - | - | - |
| N.H. | 2 | 28 | 1 | - | 1 | - | - | - | 1 |
| Vt. | 1 | 1 | - | - | 2 | - | - | - | - |
| Mass. | 118 | 144 | 1 | 38 | 29 | - | 6 | 2 | - |
| R.I. | 11 | 1 | - | 16 | 15 | - | - | - | - |
| Conn. | 99 | 237 | - | 33 | 24 | - | - | - | - |
| MID. ATLANTIC | 1,569 | 1,626 | 13 | 880 | 1,056 | - | 8 | - | 289 |
| Upstate N.Y. | 103 | 119 | 7 | 26 | 112 | - | 2 | - | 91 |
| N.Y. City | 733 | 1,115 | - | 612 | 676 | - | 2 | - | - |
| N.J. | 272 | 343 | - | 157 | 134 | - | 4 | - | 134 |
| Pa. | 461 | 49 | 6 | 85 | 134 | - | - | - | 64 |
| E.N. CENTRAL | 855 | 615 | 14 | 459 | 392 | 1 | 7 | - | 10 |
| Ohio | 122 | 110 | 10 | 74 | 51 | - | 1 | - | 1 |
| Ind. | 22 | 6 | - | 18 | 23 | - | - | - | - |
| Ill. | 388 | 240 | 1 | 262 | 189 | - | - | - | 2 |
| Mich. | 218 | 164 | 3 | 76 | 113 | 1 | 5 | - | 2 |
| Wis. | 105 | 95 | - | 29 | 16 | - | 1 | - | 5 |
| W.N. CENTRAL | 153 | 72 | 16 | 86 | 88 | 2 | 1 | - | 110 |
| Minn. | 17 | 23 | 7 | 11 | 16 | - | 1 | - | 42 |
| Iowa | 18 | 6 | 4 | 21 | 10 | - | - | - | 20 |
| Mo. | 89 | 33 | 4 | 29 | 37 | 2 | - | - | 2 |
| N. Dak. | - | 1 | - | 1 | 4 | - | - | - | 9 |
| S. Dak. | 1 | - | - | 10 | 4 | - | - | - | 29 |
| Nebr. | 1 | 2 | 1 | 3 | 7 | - | - | - | 2 |
| Kans. | 27 | 7 | - | 11 | 10 | - | - | - | 6 |
| S. ATLANTIC | 2,760 | 3,245 | 5 | 560 | 711 | 1 | 9 | 8 | 214 |
| Del. | 30 | 48 | 1 | 7 | 13 | - | - | - | 33 |
| Md. | 248 | 277 | - | 51 | 65 | - | 5 | 1 | 75 |
| D.C. | 148 | 162 | - | 35 | 18 | - | - | - | 2 |
| Va. | 234 | 149 | 1 | 54 | 61 | - | 1 | - | 38 |
| W. Va. | 4 | 3 | - | 19 | 13 | - | 1 | - | 17 |
| N.C. | 400 | 371 | 3 | 79 | 90 | - | - | 6 | - |
| S.C. | 354 | 200 | - | 69 | 104 | - | - | - | 13 |
| Ga. | 674 | 767 | - | 111 | 91 | - | 2 | 1 | 33 |
| Fla. | 668 | 1,268 | - | 135 | 256 | 1 | - | - | 3 |
| E.S. CENTRAL | 904 | 691 | 3 | 227 | 280 | 1 | - | 2 | 19 |
| Ky. | 16 | 18 | - | 66 | 80 | - | - | 1 | 4 |
| Tenn. | 386 | 218 | 2 | - | 63 | 1 | - | - | 7 |
| Ala. | 266 | 223 | 1 | 92 | 96 | - | - | 1 | 8 |
| Miss. | 236 | 232 | - | 69 | 41 | - | - | - | - |
| W.S. CENTRAL | 1,414 | 1,486 | 3 | 346 | 502 | 4 | 1 | 1 | 88 |
| Ark. | 69 | 110 | 1 | 36 | 56 | 3 | - | - | 7 |
| La. | 502 | 456 | - | 66 | 94 | - | 1 | - | 3 |
| Okla. | 34 | 52 | 2 | 15 | 39 | 1 | - | 1 | 29 |
| Tex. | 809 | 868 | - | 229 | 313 | - | - | - | 49 |
| MOUNTAIN | 129 | 167 | 9 | 83 | 67 | 3 | 3 | - | 8 |
| Mont. | 1 | - | - | - | 4 | 2 | - | - | 4 |
| Idaho | 3 | 4 | - | 1 | 1 | - | - | - | 1 |
| Wyo. | 1 | - | - | 1 | 1 | 1 | - | - | - |
| Colo. | 15 | 14 | - | 6 | - | - | - | - | 1 |
| N. Mex. | 6 | 11 | 3 | - | 16 | - | - | - | 1 |
| Ariz. | 84 | 112 | 3 | 55 | 30 | - | 2 | - | 1 |
| Utah | 3 | 1 | 3 | 13 | - | - | - | - | - |
| Nev. | 16 | 25 | - | 7 | 15 | - | 1 | - | - |
| PACIFIC | 733 | 953 | 10 | 857 | 954 | 1 | 24 | - | 85 |
| Wash. | 33 | 95 | 1 | 47 | 58 | 1 | - | - | - |
| Oreg. | 24 | 24 | - | 13 | 19 | - | 1 | - | 1 |
| Calif. | 674 | 818 | 9 | 746 | 828 | - | 22 | - | 84 |
| Alaska | 2 | 5 | - | 6 | 17 | - | - | - | - |
| Hawaii | - | 11 | - | 45 | 32 | - | 1 | - | - |
| Guam | - | - | - | - | 9 | - | - | - | - |
| P.R. | 75 | 115 | - | 38 | 29 | - | - | - | 7 |
| V.I. | 35 | - | - | 1 | 1 | - | - | - | - |
| Amer. Samoa | - | - | - | - | 5 | - | - | - | - |
| C.N.M.I. | - | - | - | - | 7 | - | - | - | - |

U: Unavailable

# TABLE III. Deaths in 121 U.S. cities,* week ending March 16, 1991 (11th Week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I** |
|---|---|---|---|---|---|---|---|
| | All Ages | ≥65 | 45-64 | 25-44 | 1-24 | <1 | Total |
| NEW ENGLAND | 602 | 397 | 120 | 52 | 12 | 21 | 47 |
| Boston, Mass. | 173 | 100 | 36 | 22 | 4 | 11 | 17 |
| Bridgeport, Conn. | 38 | 29 | 6 | 2 | 1 | - | 3 |
| Cambridge, Mass. | 28 | 20 | 7 | 1 | - | - | 4 |
| Fall River, Mass. | 20 | 17 | 3 | - | - | - | - |
| Hartford, Conn. | 27 | 15 | 7 | 2 | 1 | 2 | - |
| Lowell, Mass. | 21 | 14 | 4 | 3 | - | - | 2 |
| Lynn, Mass. | 11 | 6 | 5 | - | - | - | - |
| New Bedford, Mass. | 26 | 21 | 3 | 2 | - | - | - |
| New Haven, Conn. | 56 | 34 | 11 | 7 | 3 | 1 | 1 |
| Providence, R.I. | 62 | 49 | 9 | 2 | - | 2 | 7 |
| Somerville, Mass. | 6 | 4 | 2 | - | - | - | 1 |
| Springfield, Mass. | 48 | 28 | 10 | 7 | 2 | 1 | 4 |
| Waterbury, Conn. | 35 | 22 | 8 | 2 | 1 | 2 | 4 |
| Worcester, Mass. | 51 | 38 | 9 | 2 | - | 2 | 4 |
| MID. ATLANTIC | 2,806 | 1,844 | 530 | 310 | 61 | 61 | 189 |
| Albany, N.Y. | 43 | 25 | 12 | 4 | 2 | - | 3 |
| Allentown, Pa. | 24 | 17 | 6 | - | 1 | - | 2 |
| Buffalo, N.Y. | 100 | 70 | 20 | 6 | 1 | 3 | 10 |
| Camden, N.J. | 52 | 38 | 6 | 5 | 1 | 2 | 5 |
| Elizabeth, N.J. | 24 | 20 | 2 | 2 | - | - | 4 |
| Erie, Pa.† | 45 | 34 | 6 | 3 | 2 | - | 5 |
| Jersey City, N.J. | 69 | 41 | 16 | 4 | 3 | 5 | 1 |
| New York City, N.Y. | 1,437 | 904 | 286 | 188 | 34 | 25 | 75 |
| Newark, N.J. | 62 | 31 | 13 | 15 | 1 | 2 | 5 |
| Paterson, N.J. | 35 | 25 | 2 | 5 | - | 3 | - |
| Philadelphia, Pa. | 425 | 276 | 84 | 44 | 8 | 13 | 28 |
| Pittsburgh, Pa.† | 81 | 61 | 11 | 5 | 1 | 3 | 9 |
| Reading, Pa. | 35 | 29 | 5 | 1 | - | - | 7 |
| Rochester, N.Y. | 145 | 108 | 22 | 11 | 2 | 2 | 13 |
| Schenectady, N.Y. | 28 | 17 | 7 | 2 | 1 | 1 | 2 |
| Scranton, Pa.† | 22 | 16 | 2 | 3 | 1 | - | 2 |
| Syracuse, N.Y. | 87 | 67 | 15 | 3 | 1 | 1 | 11 |
| Trenton, N.J. | 52 | 36 | 10 | 5 | - | 1 | 2 |
| Utica, N.Y. | 26 | 20 | 2 | 2 | 2 | - | 2 |
| Yonkers, N.Y. | 14 | 9 | 3 | 2 | - | - | 3 |
| E.N. CENTRAL | 2,280 | 1,438 | 426 | 246 | 113 | 57 | 143 |
| Akron, Ohio | 42 | 32 | 3 | 4 | 1 | 2 | - |
| Canton, Ohio | 37 | 24 | 9 | 3 | - | 1 | 6 |
| Chicago, Ill. | 573 | 274 | 106 | 114 | 69 | 10 | 36 |
| Cincinnati, Ohio | 99 | 61 | 27 | 4 | 3 | 4 | 8 |
| Cleveland, Ohio | 184 | 108 | 49 | 13 | 7 | 7 | 7 |
| Columbus, Ohio | 203 | 141 | 31 | 16 | 6 | 9 | 5 |
| Dayton, Ohio | 114 | 88 | 18 | 6 | 2 | - | 7 |
| Detroit, Mich. | 249 | 147 | 54 | 35 | 8 | 5 | 9 |
| Evansville, Ind. | 40 | 31 | 5 | 3 | 1 | - | - |
| Fort Wayne, Ind. | 67 | 49 | 13 | 4 | 1 | - | 3 |
| Gary, Ind. | 35 | 19 | 6 | 7 | 3 | - | 1 |
| Grand Rapids, Mich. | 36 | 28 | 5 | 1 | 1 | 1 | 3 |
| Indianapolis, Ind. | 194 | 132 | 37 | 15 | 6 | 4 | 20 |
| Madison, Wis. | 35 | 21 | 8 | 2 | 1 | 3 | 4 |
| Milwaukee, Wis. | 141 | 106 | 20 | 10 | 2 | 3 | 11 |
| Peoria, Ill. | 36 | 31 | 3 | - | - | 2 | 8 |
| Rockford, Ill. | 44 | 34 | 4 | 3 | 2 | 1 | 8 |
| South Bend, Ind. | 55 | 45 | 9 | 1 | - | - | 3 |
| Toledo, Ohio | 96 | 67 | 19 | 5 | - | 5 | 4 |
| Youngstown, Ohio§ | U | U | U | U | U | U | U |
| W.N. CENTRAL | 899 | 635 | 162 | 52 | 20 | 30 | 65 |
| Des Moines, Iowa | 76 | 55 | 13 | 6 | - | 2 | 7 |
| Duluth, Minn. | 34 | 30 | 2 | - | 2 | - | 3 |
| Kansas City, Kans. | 40 | 27 | 7 | 3 | 3 | - | 3 |
| Kansas City, Mo. | 114 | 86 | 14 | 10 | 2 | 2 | 10 |
| Lincoln, Nebr. | 35 | 28 | 5 | 2 | - | - | 2 |
| Minneapolis, Minn. | 260 | 172 | 50 | 17 | 7 | 14 | 24 |
| Omaha, Nebr. | 104 | 76 | 24 | 1 | - | 3 | 5 |
| St. Louis, Mo. | 121 | 87 | 19 | 5 | 3 | 7 | 4 |
| St. Paul, Minn. | 51 | 34 | 10 | 5 | 2 | - | 5 |
| Wichita, Kans. | 64 | 40 | 18 | 3 | 1 | 2 | 2 |

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I** |
|---|---|---|---|---|---|---|---|
| | All Ages | ≥65 | 45-64 | 25-44 | 1-24 | <1 | Total |
| S. ATLANTIC | 1,411 | 869 | 274 | 162 | 49 | 54 | 70 |
| Atlanta, Ga. | 206 | 110 | 37 | 33 | 7 | 19 | 14 |
| Baltimore, Md. | 205 | 122 | 47 | 26 | 5 | 5 | 8 |
| Charlotte, N.C. | 75 | 52 | 12 | 5 | 3 | 3 | 4 |
| Jacksonville, Fla. | 111 | 75 | 16 | 14 | 5 | 1 | 4 |
| Miami, Fla. | 116 | 66 | 31 | 10 | 4 | 5 | - |
| Norfolk, Va. | 68 | 42 | 13 | 6 | 3 | 4 | 4 |
| Richmond, Va. | 76 | 48 | 14 | 9 | 2 | 3 | 2 |
| Savannah, Ga. | 46 | 30 | 10 | 5 | 1 | - | 4 |
| St. Petersburg, Fla. | 96 | 82 | 9 | 2 | 1 | 2 | 3 |
| Tampa, Fla. | 160 | 114 | 26 | 10 | 5 | 4 | 18 |
| Washington, D.C. | 230 | 110 | 55 | 42 | 13 | 8 | 9 |
| Wilmington, Del. | 22 | 18 | 4 | - | - | - | - |
| E.S. CENTRAL | 856 | 553 | 168 | 72 | 29 | 34 | 64 |
| Birmingham, Ala. | 155 | 90 | 30 | 17 | 9 | 9 | 4 |
| Chattanooga, Tenn. | 45 | 35 | 6 | 1 | 3 | - | 4 |
| Knoxville, Tenn. | 88 | 62 | 15 | 8 | - | 3 | 6 |
| Louisville, Ky. | 163 | 112 | 31 | 11 | 8 | 1 | 15 |
| Memphis, Tenn. | 218 | 140 | 51 | 16 | 5 | 6 | 20 |
| Mobile, Ala. | 23 | 5 | 2 | 3 | 1 | 12 | 1 |
| Montgomery, Ala. | 55 | 40 | 11 | 4 | - | - | 6 |
| Nashville, Tenn. | 109 | 69 | 22 | 12 | 3 | 3 | 8 |
| W.S. CENTRAL | 1,511 | 946 | 313 | 156 | 48 | 46 | 78 |
| Austin, Tex. | 68 | 43 | 14 | 9 | 1 | 1 | 4 |
| Baton Rouge, La. | 44 | 26 | 7 | 8 | 2 | 1 | 3 |
| Corpus Christi, Tex. | 38 | 26 | 10 | 1 | 1 | - | - |
| Dallas, Tex. | 210 | 122 | 41 | 32 | 9 | 6 | 7 |
| El Paso, Tex. | 68 | 46 | 16 | 1 | 3 | 2 | 5 |
| Ft. Worth, Tex. | 99 | 57 | 23 | 11 | 4 | 4 | 4 |
| Houston, Tex. | 346 | 198 | 79 | 43 | 18 | 7 | 33 |
| Little Rock, Ark. | 54 | 31 | 14 | 6 | 1 | 2 | 1 |
| New Orleans, La. | 238 | 159 | 43 | 22 | 3 | 11 | - |
| San Antonio, Tex. | 179 | 113 | 38 | 17 | 5 | 6 | 8 |
| Shreveport, La. | 44 | 35 | 6 | - | 1 | 2 | 3 |
| Tulsa, Okla. | 123 | 90 | 22 | 6 | - | 4 | 10 |
| MOUNTAIN | 772 | 529 | 137 | 64 | 20 | 22 | 76 |
| Albuquerque, N.M. | 84 | 59 | 12 | 9 | 1 | 3 | 9 |
| Colo. Springs, Colo. | 65 | 41 | 13 | 8 | 1 | 2 | 9 |
| Denver, Colo. | 120 | 83 | 16 | 13 | 4 | 4 | 19 |
| Las Vegas, Nev. | 142 | 93 | 32 | 12 | 3 | 2 | 11 |
| Ogden, Utah | 26 | 19 | 5 | 1 | 1 | - | 5 |
| Phoenix, Ariz. | 142 | 92 | 27 | 13 | 5 | 5 | 3 |
| Pueblo, Colo. | 29 | 24 | 3 | 1 | 1 | - | 4 |
| Salt Lake City, Utah | 44 | 28 | 7 | 4 | 2 | 3 | 6 |
| Tucson, Ariz. | 120 | 90 | 22 | 3 | 2 | 3 | 10 |
| PACIFIC | 2,220 | 1,506 | 365 | 216 | 69 | 57 | 139 |
| Berkeley, Calif. | 23 | 20 | 2 | - | 1 | - | 1 |
| Fresno, Calif. | 86 | 57 | 14 | 9 | 1 | 5 | 5 |
| Glendale, Calif. | 45 | 34 | 4 | 4 | 3 | - | 3 |
| Honolulu, Hawaii | 97 | 67 | 14 | 9 | 4 | 3 | 9 |
| Long Beach, Calif. | 87 | 66 | 8 | 8 | - | 5 | 10 |
| Los Angeles, Calif. | 766 | 506 | 138 | 72 | 36 | 9 | 32 |
| Oakland, Calif.§ | U | U | U | U | U | U | U |
| Pasadena, Calif. | 31 | 18 | 4 | 7 | - | 2 | 2 |
| Portland, Oreg. | 127 | 90 | 21 | 9 | 2 | 5 | 5 |
| Sacramento, Calif. | 171 | 122 | 28 | 11 | 4 | 6 | 17 |
| San Diego, Calif. | 155 | 96 | 21 | 21 | 9 | 7 | 17 |
| San Francisco, Calif. | 171 | 106 | 30 | 32 | - | 2 | 9 |
| San Jose, Calif. | 148 | 107 | 21 | 11 | 3 | 6 | 8 |
| Seattle, Wash. | 153 | 94 | 36 | 16 | 1 | 6 | 5 |
| Spokane, Wash. | 65 | 51 | 8 | 2 | 3 | 1 | 3 |
| Tacoma, Wash. | 95 | 72 | 16 | 5 | 2 | - | 13 |
| TOTAL | 13,357†† | 8,717 | 2,495 | 1,330 | 421 | 382 | 871 |

*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.

§Report for this week is unavailable (U).

*Alcohol-Related Traffic Fatalities — Continued*

**TABLE 3. Estimated rate* of drivers† involved in fatal crashes, by age group§ and driver blood alcohol concentration (BAC) — United States, 1982–1989**

| Year/Age group (yrs) | Rate: No alcohol (BAC=0.00 g/dL) | Alcohol-related (BAC ≥0.01 g/dL) | Intoxicated (BAC ≥0.10 g/dL) | Total |
|---|---|---|---|---|
| **1982** | | | | |
| 15–17 | 46 | 21 | 13 | 67 |
| 18–20 | 36 | 34 | 24 | 70 |
| 21–24 | 28 | 29 | 23 | 57 |
| ≥25 | 20 | 10 | 8 | 30 |
| **1983** | | | | |
| 15–17 | 46 | 19 | 12 | 64 |
| 18–20 | 34 | 30 | 21 | 63 |
| 21–24 | 26 | 26 | 20 | 52 |
| ≥25 | 19 | 10 | 8 | 29 |
| **1984** | | | | |
| 15–17 | 52 | 19 | 11 | 71 |
| 18–20 | 41 | 33 | 23 | 74 |
| 21–24 | 29 | 28 | 21 | 58 |
| ≥25 | 20 | 9 | 7 | 30 |
| **1985** | | | | |
| 15–17 | 57 | 18 | 11 | 74 |
| 18–20 | 43 | 29 | 20 | 71 |
| 21–24 | 32 | 27 | 21 | 59 |
| ≥25 | 21 | 9 | 7 | 30 |
| **1986** | | | | |
| 15–17 | 63 | 22 | 12 | 85 |
| 18–20 | 46 | 32 | 22 | 78 |
| 21–24 | 33 | 29 | 22 | 62 |
| ≥25 | 21 | 9 | 7 | 30 |
| **1987** | | | | |
| 15–17 | 65 | 20 | 11 | 85 |
| 18–20 | 46 | 28 | 19 | 74 |
| 21–24 | 33 | 28 | 21 | 61 |
| ≥25 | 21 | 9 | 7 | 31 |
| **1988** | | | | |
| 15–17 | 66 | 19 | 11 | 85 |
| 18–20 | 49 | 29 | 19 | 78 |
| 21–24 | 33 | 28 | 22 | 62 |
| ≥25 | 22 | 9 | 7 | 31 |
| **1989** | | | | |
| 15–17 | 67 | 16 | 8 | 83 |
| 18–20 | 47 | 25 | 17 | 72 |
| 21–24 | 31 | 25 | 19 | 56 |
| ≥25 | 21 | 9 | 7 | 30 |

*Per 100,000 licensed drivers.
†Regardless of whether driver was killed.
§Federal Highway Administration groups all licenses for persons <16 years; the rate per 100,000 licenses may include data for persons <15 years.
Source: Fatal Accident Reporting System, National Highway Traffic Safety Administration, and Driver Licensing Data, Federal Highway Administration.

*Alcohol-Related Traffic Fatalities — Continued*

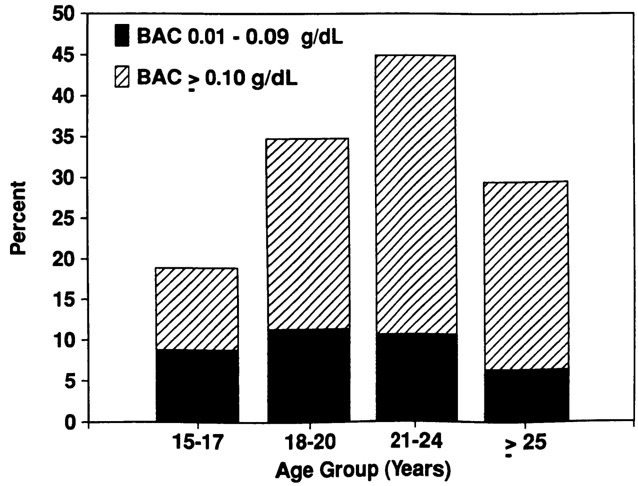
were more likely than those ≥25 years to be intoxicated in a fatal crash. In 1989, the prevalence of intoxication in drivers involved in fatal crashes increased with age: of the 15- to 17-year-old alcohol-impaired drivers involved in fatal crashes, 54% were intoxicated, compared with 68% of 18- to 20-year-olds, 77% of 21- to 24-year-olds, and 79% of ≥25-year-olds (Figure 1).

*Reported by: ME Vegega, PhD, Office of Alcohol and State Programs, Traffic Safety Programs; TM Klein, National Center for Statistics and Analysis, Research and Development, National Highway Traffic Safety Administration. Unintentional Injury Section, Epidemiology Br, Div of Injury Control, Center for Environmental Health and Injury Control, CDC.*

**Editorial Note**: Although the percentage of ARTFs has declined among young persons since 1982, alcohol-impaired driving remains a major public health problem; in 1989, approximately 7000 persons aged 15–24 years died in alcohol-related crashes (Table 1). The percentage of alcohol-impaired drivers involved in fatal crashes underscores the need for additional effective intervention efforts.

Factors that may have contributed to the reduction in both ARTFs and impaired driving among young persons include 1) increases in the minimum drinking age in 37 states from 1982 to 1988—in all 50 states and the District of Columbia, the minimum drinking age is now 21 years; 2) educational efforts and programs, such as Project Graduation, aimed at reducing drinking and driving among young persons (*7*); 3) formation of student groups such as Students Against Driving Drunk; and 4) changes in state laws penalizing drivers <21 years of age for driving with low BACs (generally, from 0.01 g/dL to 0.05 g/dL). Increases in the minimum drinking age have resulted in reductions in alcohol-related motor vehicle crashes, injuries, and fatalities in age groups affected by the laws (*8–10*). However, the consistently high proportion of alcohol-impaired driving among 18- to 20-year-olds, as well as 21- to 24-year-olds (who are legally permitted to consume alcohol), indicates a need for programmatic activities targeted specifically to drivers in these age groups.

**FIGURE 1. Blood alcohol concentration (BAC) levels of alcohol-impaired drivers* involved in fatal crashes — United States, 1989**




*Regardless of whether driver was killed.

Source: Fatal Accident Reporting System, National Highway Traffic Safety Administration.

*Alcohol-Related Traffic Fatalities — Continued*

Current NHTSA efforts to reduce alcohol-impaired driving among youth and young adults include support for student safety activities (including leadership training), provisional driver licensing guidelines, workshops for juvenile court judges, identification of effective techniques for enforcing drinking and driving laws for youth, and policy and program development workshops for college personnel and administrators. On March 15, NHTSA initiated a new public service campaign consolidating previous efforts by NHTSA, the National Basketball Association, the National Association of Broadcasters, and Mothers Against Drunk Driving. This campaign, "Celebrate with Style. Leave Alcohol Out," is directed at high school students at prom and graduation time and is designed to bring greater exposure and impact to the concept of promoting alcohol-free activities. Information on the campaign is available from Roger Kurrus, Office of Alcohol and State Programs (NTS-22), NHTSA, 400 7th Street, SW, Washington, DC 20590; telephone (202) 366-2750.

*References*


1. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives. Washington, DC: US Department of Health and Human Services, Public Health Service, CDC, 1990.
2. Borkenstein R, Crowther R, Shumate R, Ziel W, Zylman R. The role of the drinking driver in traffic accidents. Bloomington, Indiana: Indiana University, 1964.
3. Perrine M, Waller J, Harris L. Alcohol and highway safety: behavioral and medical aspects. Burlington, Vermont: University of Vermont, 1971.
4. Farris R, Malone T, Lilliefors H. A comparison of alcohol-involvement in exposed and injured drivers: phases I and II. Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration, 1976; report no. DOT-HS-801-826.
5. Mayhew DR, Donelson AC, Beirness DJ, Simpson HM. Youth, alcohol and relative risk of crash involvement. Accid Anal Prev 1986;18:273–87.
6. Klein TM. A method for estimating posterior BAC distributions for persons involved in fatal traffic accidents: final report. Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration, 1986; report no. DOT-HS-807-094.
7. CDC. Project Graduation—Maine. MMWR 1985;34:233–5.
8. Moskowitz JM. The primary prevention of alcohol problems: a critical review of the research literature. J Stud Alcohol 1989;50:54–88.
9. Womble KB. The impact of minimum drinking age laws on fatal crash involvements: an update of the NHTSA analysis. Research Notes. Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration, 1989.
10. General Accounting Office. Drinking-age laws: an evaluation synthesis of their impact on highway safety. Washington, DC: US General Accounting Office, 1987; report no. GAO/PEMD-87-10.


## Quarterly Table Reporting Alcohol Involvement in Fatal Motor Vehicle Crashes

The following table reports alcohol involvement in fatal motor vehicle crashes. This table, which will be published quarterly in *MMWR*, focuses attention on the impact of alcohol use on highway safety. Accompanying articles (page 178 of this issue) will highlight different aspects of the epidemiology of alcohol-related traffic fatalities (ARTFs).

A fatal crash is considered alcohol-related by the National Highway Traffic Safety Administration (NHTSA) if either a driver or nonoccupant (e.g., pedestrian) had a

*Fatal Motor Vehicle Crashes – Continued*

blood alcohol concentration (BAC) of ≥0.01 g/dL in a police-reported traffic crash. Persons with a BAC ≥0.10 g/dL (the legal level of intoxication in most states) are considered intoxicated. Because BAC levels are not available for all persons in fatal crashes, NHTSA estimates the number of ARTFs based on a discriminant analysis of information from all cases for which driver or nonoccupant BAC data are available. Seasonal trends may be associated with these data.

**Estimated number and percentage of total traffic fatalities* and drivers involved in fatal crashes, by age and blood alcohol concentration (BAC) level – United States, January–March 1990**

| | | Fatalities by BAC† | | | | | |
|---|---|---|---|---|---|---|---|
| | | BAC=0.00 | | 0.01% ≤BAC ≤0.09% | | BAC ≥0.10% | |
| Age (yrs) | No. fatalities | No. | (%) | No. | (%) | No. | (%) |
| 0–14 | 563 | 430 | (76.5) | 39 | ( 6.9) | 93 | (16.6) |
| 15–20 | 1,453 | 770 | (53.0) | 196 | (13.5) | 487 | (33.5) |
| 21–24 | 1,057 | 397 | (37.6) | 121 | (11.4) | 539 | (51.0) |
| 25–34 | 2,015 | 731 | (36.3) | 196 | ( 9.7) | 1,087 | (54.0) |
| 35–64 | 2,878 | 1,454 | (50.5) | 257 | ( 8.9) | 1,167 | (40.6) |
| ≥65 | 1,478 | 1,181 | (79.9) | 94 | ( 6.4) | 203 | (13.7) |
| **Total** | **9,444** | **4,964** | **(52.6)** | **904** | **( 9.6)** | **3,576** | **(37.9)** |

| | | Drivers§ by BAC¶ | | | | | |
|---|---|---|---|---|---|---|---|
| | | BAC=0.00 | | 0.01% ≤BAC ≤0.09% | | BAC ≥0.10% | |
| Age (yrs) | No. drivers | No. | (%) | No. | (%) | No. | (%) |
| 0–14** | 34 | 31 | (92.0) | 2 | ( 4.6) | 1 | ( 3.4) |
| 15–20 | 1,858 | 1,315 | (70.8) | 187 | (10.0) | 357 | (19.2) |
| 21–24 | 1,586 | 937 | (59.1) | 141 | ( 8.9) | 507 | (32.0) |
| 25–34 | 3,404 | 2,122 | (62.3) | 254 | ( 7.5) | 1,028 | (30.2) |
| 35–64 | 4,444 | 3,378 | (76.0) | 232 | ( 5.2) | 834 | (18.8) |
| ≥65 | 1,238 | 1,122 | (90.6) | 40 | ( 3.2) | 76 | ( 6.1) |
| **Total** | **12,564** | **8,905** | **(70.9)** | **855** | **( 6.8)** | **2,804** | **(22.3)** |

*Fatalities include all occupants and nonoccupants who died within 30 days of a motor vehicle crash on a public road.

†The BAC distributions are estimates for drivers and nonoccupants involved in fatal crashes. Numbers of fatalities are rounded to the nearest whole number.

§Driver may or may not have been killed.

¶BAC distributions are estimates for drivers involved in fatal crashes. Numbers of drivers are rounded to the nearest whole number, and percentages may not add to 100% because of rounding.

**Although usually too young to legally drive, persons in this age group are included for completeness of the data set.

Source: Fatal Accident Reporting System, National Highway Traffic Safety Administration.

*Notices to Readers*

## NIOSH Current Intelligence Bulletin 53: Toluene Diisocyanate (TDI) and Toluenediamine (TDA); Evidence of Carcinogenicity

CDC's National Institute for Occupational Safety and Health (NIOSH) has released *NIOSH Current Intelligence Bulletin 53: Toluene Diisocyanate (TDI) and Toluenediamine (TDA); Evidence of Carcinogenicity* (*1*).* Current Intelligence Bulletins (CIBs) provide new data or update existing information about chemical substances, physical agents, or safety hazards found in the workplace.

CIB 53 presents recent information about the potential carcinogenicity of toluene diisocyanate (TDI) and toluenediamine (TDA) to humans. Recent studies of chronic effects in animals indicate that cancer is associated with exposure to commercial-grade TDI (an 80:20 mixture of 2,4- and 2,6-TDI) and 2,4-TDA, a hydrolysis product of TDI. This bulletin describes the results and implications of these animal studies, describes the known health effects of TDI and TDA in humans, and suggests guidelines for minimizing occupational exposures.

No case reports or epidemiologic studies are available regarding TDI or TDA carcinogenicity in humans, but the animal data on carcinogenicity provides sufficient evidence to warrant concern about occupational exposure to TDI and TDA. The tumorigenic responses observed in both rats and mice treated with TDI or TDA meet the criteria of the Occupational Safety and Health Administration's carcinogen policy for classifying a substance as a potential occupational carcinogen (29 CFR[†] 1990). Although the carcinogenic potential of the other TDI and TDA isomers has not been adequately determined, exposure to all TDI and TDA isomers should be reduced. NIOSH therefore recommends that all the isomers of TDI and TDA be regarded as potential occupational carcinogens and that occupational exposures to TDI and TDA be limited to the lowest feasible concentrations.

*Reported by: Div of Standards Development and Technology Transfer, National Institute for Occupational Safety and Health, CDC.*

*Reference*

1. NIOSH. Current intelligence bulletin #53: toluene diisocyanate (TDI) and toluenediamine (TDA); evidence of carcinogenicity. Cincinnati: US Department of Health and Human Services, Public Health Service, CDC, 1990; DHHS publication no. (NIOSH)90-101.

---

*Single copies are available without charge from the Publications Dissemination Section, Division of Standards Development and Technology Transfer, NIOSH, CDC, 4676 Columbia Parkway, Cincinnati, OH 45226; telephone (513) 533-8287.

†Code of Federal Regulations.

## NCHS Report on Developmental, Learning, and Emotional Problems in Children

In 1988, CDC's National Center for Health Statistics (NCHS) conducted the National Health Interview Survey on Child Health (NHIS-CH). The survey addressed a broad range of health-related topics, including child-care arrangements; injuries and medical conditions; exposure to cigarette smoke; bedtime and sleeping arrangements; health insurance; sources of medical care; and developmental, learning, and emotional problems.

*Notices to Readers – Continued*

The report, *Developmental, Learning and Emotional Problems: Health of Our Nation's Children, United States, 1988,* focuses on the incidence of these problems in U.S. children. Copies of this report and additional reports from the NHIS-CH are available free of charge from the Scientific and Technical Information Branch, NCHS, CDC, Room 1064, 6525 Belcrest Road, Hyattsville, MD; telephone (301) 436-8500.

## NCHS Report on Infertility

Cycle IV of the National Survey of Family Growth (NSFG), conducted in 1988 by CDC's National Center for Health Statistics (NCHS), was based on personal interviews with a national sample of women aged 15–44 years. The interview focused on the respondent's fecundity; past and current use of contraception; dates and outcomes of pregnancies, if any; marriages; use of family planning and infertility services; and a wide range of social, economic, and demographic characteristics. Statistics in the report highlight the first national estimates of trends in the fecundity status of all reproductive-aged women in the United States, regardless of marital status.

The report, *Fecundity and Infertility in the United States, 1965–88,* is available free of charge from the Scientific and Technical Information Branch (STIB), NCHS, CDC, Room 1064, 6525 Belcrest Road, Hyattsville, MD; telephone (301) 436-8500. Additional reports from Cycle IV of the NSFG are also available from STIB.

## NCHS Report on Deaths Among Persons of Hispanic Origin

The first detailed report containing data on the mortality of the Hispanic-origin population for a 15-state reporting area is available from CDC's National Center for Health Statistics. Population counts are taken from the 1980 decennial census for major Hispanic groups in the reporting area. Mortality information is taken from death certificates as reported from the National Vital Statistics system.

Single copies of the report, *Deaths of Hispanic Origin, 15 Reporting States, 1979–81,* are available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402; telephone (202) 783-3238; stock #017-022-01127-1; price $3.75.

## NCHS Report on Injuries by Selected Characteristics

National estimates of the average annual incidence of injuries requiring either medical attention or restricted activity are available from a new report based on data collected by the National Health Interview Survey (NHIS) conducted by CDC's National Center for Health Statistics (NCHS). Data on injuries are presented by type of injury, cross-tabulated by a wide array of sociodemographic characteristics.

Single copies of the report, *Types of Injuries by Selected Characteristics: United States, 1985–87* are available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402; telephone (202) 783-3238; stock #017-022-01126-3; price $3.75.

*Notices to Readers – Continued*

## Training Course for Hospital Epidemiologists

CDC, the Society for Hospital Epidemiology of America, and the American Hospital Association (AHA) will cosponsor a training course for hospital epidemiologists May 16–19, 1991, in Chicago. The course is intended for infectious disease fellows and new hospital epidemiologists and emphasizes hands-on exercises in which participants work in small groups to detect, investigate, and control epidemiologic problems encountered in the hospital setting. These working sessions are supplemented with lectures and seminars covering fundamental aspects of hospital epidemiology. Course information is available from Gina Pugliese, AHA, 840 North Lake Shore Drive, Chicago, IL 60611; telephone (312) 280-6404. For registration, contact Phil Gordon, AHA, at (312) 280-6764.

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.



☆U.S. Government Printing Office: 1991-531-130/22058 Region IV

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**
Public Health Service
Centers for Disease Control
Atlanta, Georgia 30333

**Official Business**
Penalty for Private Use $300

**FIRST-CLASS MAIL**
**POSTAGE & FEES PAID**
**PHS/CDC**
**Permit No. G-284**

A *HCRUALAIM85 8938
MICHAEL LAIRMORE, DVM, PHD
DVD RVB
15/2611E
A30

X

HHS Publication No. (CDC) 91-8017 Redistribution using permit imprint is illegal.