CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

November 1, 1996 / Vol. 45 / No. 43

MMWR™
MORBIDITY AND MORTALITY WEEKLY REPORT

National Diabetes Awareness Month — November 1996

November is National Diabetes Awareness Month. In the United States, approximately half of the estimated 16 million persons with diabetes are believed to be aware of their condition. This month, efforts will emphasize preventing severe long-term complications of diabetes (i.e., blindness, amputations, heart disease, renal disease, and premature death).

Each year, approximately 625,000 new cases of diabetes are diagnosed (*1*). Some persons without diabetes can reduce their risk for developing the disease or delay its onset through appropriate levels of physical activity (*2*). Persons initiating new exercise regimens should do so gradually after seeking guidance from their health-care provider.

Additional information about diabetes is available from diabetes-control programs in state and territorial health departments and from the Diabetes Home Page on the CDC Home Page on the World Wide Web (http://www.cdc.gov/nccdphp/ddt/ddthome.htm).

References

1. The National Diabetes Data Group, National Institutes of Health. Diabetes in America. 2nd ed. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, 1995; DHHS publication no. (NIH)95-1468.
2. US Department of Health and Human Services. Physical activity and health: a report of the Surgeon General. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, National Center for Chronic Disease Prevention and Health Promotion, 1996.

Blindness Caused by Diabetes — Massachusetts, 1987–1994

Diabetes, the leading cause of new blindness among U.S. adults aged 20–74 years, accounts for approximately 8% of cases of legal blindness and 12% of all new cases of blindness in the United States each year (*1*). One of the national health objectives for the year 2000 is to decrease by 50% the incidence of blindness caused by diabetes (objective 17.10) (*2*). However, surveillance for blindness among persons with diabetes has not been conducted nationally, and national prevalence estimates of blindness caused by diabetes have been based on state data from the register of the Massachusetts Commission for the Blind (MCB). To characterize recent trends, data on legal blindness caused by diabetes among adults with diabetes in Massachusetts were examined for 1987–1994. This report summarizes the results of that analysis, which

Blindness Caused by Diabetes — Continued

indicate that in Massachusetts, the overall incidence and prevalence of legal blindness caused by diabetes did not decrease, despite the availability of methods to prevent vision loss.

Massachusetts General Law (Chapter 6, Section 136) requires institutions, physicians, ophthalmologists, and optometrists to report all persons with legal blindness to MCB within 30 days of diagnosis. Legal blindness is defined as a corrected visual acuity of 20/200 or worse in the better eye or a field of vision of ≤10 degrees (*3*). Data collected by MCB include best corrected visual acuity, field of vision, and cause of blindness, including site or type of lesion (e.g., glaucoma, cataract, or retinopathy) and etiology (e.g., diabetes). Causes are coded according to the National Society for the Prevention of Blindness standard classification manual* (*3*). Persons who had died or moved out of state were removed from the registry in 1987, 1991, and 1994. For calculating the annual incidence and prevalence of blindness caused by diabetes among persons with diabetes, the denominator was the estimated number of persons with diabetes in Massachusetts; this number was derived from intercensal population estimates for the state and national estimates of the prevalence of diagnosed diabetes in the National Health Interview Survey†. For 1993 and 1994, intercensal population estimates for 1992 were used. For 1994, estimates of the prevalence of diagnosed diabetes for 1993 were used. Rates for men, women, and both sexes combined were age-adjusted to the estimated population of persons with diabetes in Massachusetts in 1987.

During 1987–1994, blindness caused by diabetes was reported for 2990 persons (annual mean: 374, range: 340–397); 60% were aged ≥65 years, 30% aged 45–64 years, and 10% aged 20–44 years. The mean age-adjusted annual incidence was 2.4 per 1000 persons with diabetes (range: 2.1–2.6), and the age-adjusted female-to-male rate ratio was 1.4:1. Overall, incidence remained stable during 1987–1994 (Figure 1); however, for both men and women aged 20–44 years, incidence decreased approximately 29%.

In 1994, the overall prevalence of blindness caused by diabetes recorded on the MCB register was 3434 cases; the annual mean for 1987–1994 was 2994 (range: 2298–3536). Persons aged ≥65 years accounted for 67% of cases, persons aged 45–64 years for 23%, and persons aged 20–44 years for 10%. The mean age-adjusted annual prevalence was 18.5 per 1000 persons with diabetes (range: 15.3–20.2), and the age-adjusted female-to-male rate ratio was 1.4:1. During 1987–1994, the overall age-adjusted prevalence increased 28% (Figure 2). Prevalence decreased 17% among persons aged 20–44 years and increased substantially (46%) among persons aged ≥65 years.

Reported by: M El-Hashimy, MD, K Alich, MS, Diabetes Control Program, Massachusetts Dept of Public Health. Epidemiology and Statistics Br, Div of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, CDC.

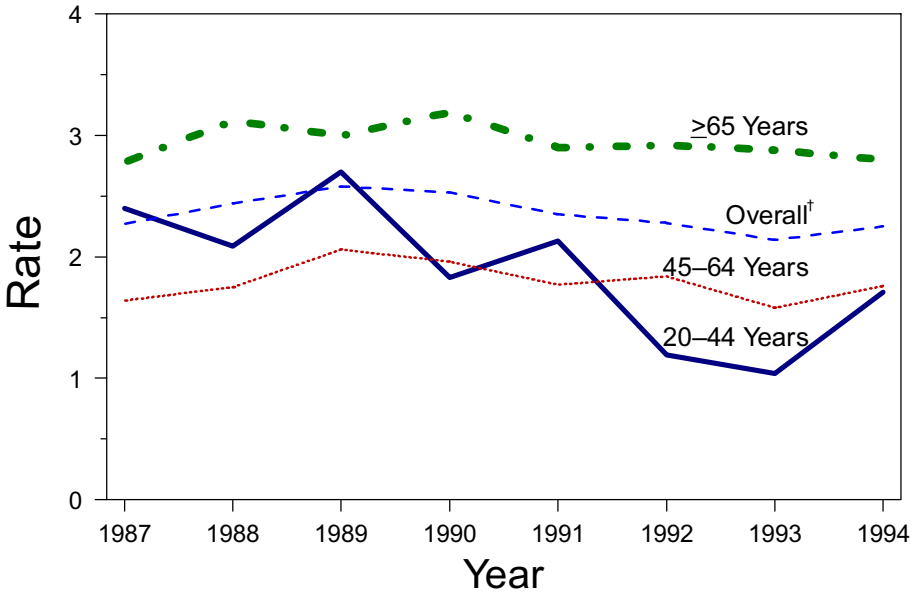
Editorial Note: A substantial proportion of the visual loss caused by diabetes is preventable. Early detection of diabetic retinopathy and timely intervention with laser photocoagulation can reduce the incidence of severe vision loss by 50%–60% in patients with macular edema and by 90% in patients with proliferative retinopathy (*4*).

*For blindness among persons with diabetes, site/type codes 952–954, 957, 962–964, 967, and 620, and etiology codes 6210, 9501, and 9503.

†Age-specific diabetes prevalence estimates for whites were used to generate conservative estimates of the number of persons with diabetes because age-specific intercensal population estimates were not available for separate race groups.

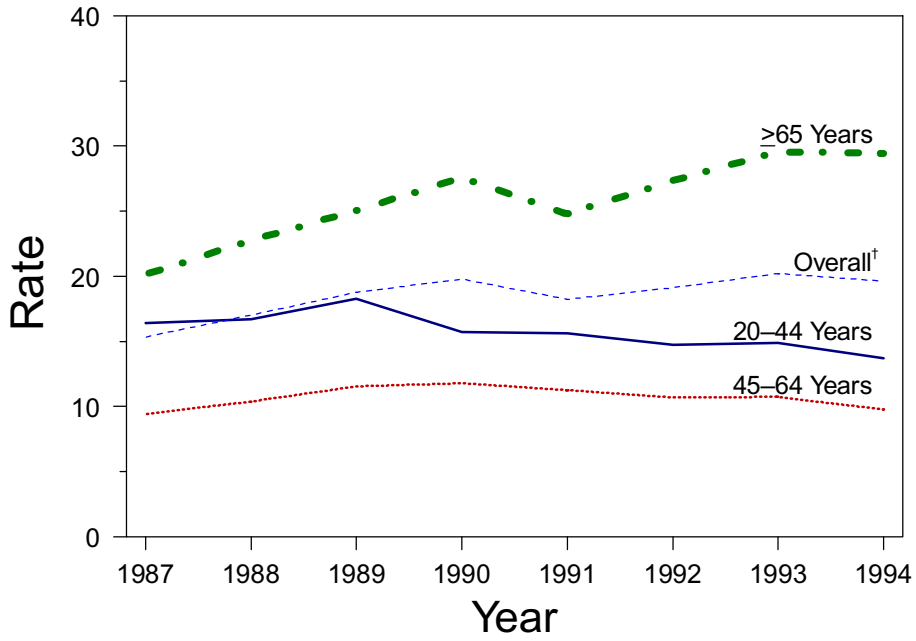
Blindness Caused by Diabetes — Continued

FIGURE 1. Annual incidence rate* of blindness caused by diabetes, by age group — Massachusetts, 1987–1994



*Per 1000 persons with diabetes. Age-adjusted to the estimated number of persons with diabetes in Massachusetts in 1987.
†For persons aged ≥20 years. Blindness caused by diabetes is rare in persons aged <20 years.

FIGURE 2. Annual prevalence rate* of blindness caused by diabetes, by age group — Massachusetts, 1987–1994



*Per 1000 persons with diabetes. Age-adjusted to the estimated number of persons with diabetes in Massachusetts in 1987.
†For persons aged ≥20 years. Blindness caused by diabetes is rare in persons aged <20 years.

Blindness Caused by Diabetes — Continued

In Massachusetts, the reported decline in the incidence of blindness among persons with diabetes aged 20–44 years may reflect early detection of and treatment for diabetic retinopathy or improved glycemic control. However, young persons with diabetes account for only a small proportion of total cases of blindness among the adult population with diabetes. In Massachusetts, the overall stable incidence and increasing prevalence of blindness caused by diabetes may have reflected low rates for persons with diabetes who received the recommended annual eye screening examination for diabetic retinopathy (*5*) and underscore the need for intensification of screening for diabetic retinopathy in persons with diabetes. The increase in prevalence during 1987–1994 also may reflect improved case ascertainment and reporting or increased survival among persons with diabetes. For example, in Massachusetts from 1987 to 1994, the estimated mean survival of blind persons with diabetes from time of diagnosis of blindness to death increased from 6.8 years to 8.7 years, consistent with previous estimates of survival among persons with diabetes who are legally blind (*6*).

A major limitation of using data from the MCB registry is that completeness of reporting to the registry has not been determined. Despite the availability of incentives for persons who are registered (e.g., tax deductions and exemptions), some degree of underreporting is expected and is a well-recognized limitation of blindness registries (*7,8*). Reasons for underreporting include a lack of awareness among both patients and health-care providers of the need for or benefits of reporting, concern about lack of confidentiality of medical information, and social stigma associated with blindness. However, levels of reporting of cases of blindness caused by diabetes may be high: during 1993–1994, at least 90% of ophthalmologists in Massachusetts reported cases to MCB (M. El-Hashimy, Massachusetts Department of Public Health, personal communication, 1995). Furthermore, except for persons aged ≥65 years, the incidence rates of blindness in the MCB registry were comparable to those for persons in the Wisconsin Epidemiologic Study of Diabetic Retinopathy for 1980–1992 (aged 20–24 years, 1.9 and 1.9, respectively; aged 45–64 years, 1.8 and 2.3, respectively; aged ≥65 years, 2.9 and 5.7, respectively; and overall, 2.4 and 3.9, respectively)[§] (S. Moss, R. Klein, University of Wisconsin Medical School, personal communication, 1996). This comparability of incidence rates for persons with diabetes aged <65 years suggests that completeness of reporting to MCB is high and supports the use of MCB findings for developing national estimates of the incidence of blindness caused by diabetes.

MCB, the Diabetes Control Program of the Massachusetts Department of Public Health, and CDC are collaborating to improve the level and quality of reporting of blindness in Massachusetts. Based on findings of a survey to identify factors associated with nonreporting by eye-care providers in Massachusetts (*9*), a comprehensive strategy has been initiated to increase awareness of the importance and benefits of reporting. This strategy has included the development and distribution of educational materials for eye-care providers, patients, and patients' families. In addition, providers must report the diabetes status of all new registrants, and coding practices have been changed to more accurately reflect specific causes of blindness caused by diabetes.

[§]Per 1000 persons with diabetes. Age-adjusted to the estimated number of persons with diabetes in Massachusetts in 1987.

Blindness Caused by Diabetes — Continued

References

1. National Society to Prevent Blindness. Vision problems in the U.S.: a statistical analysis. New York: National Society to Prevent Blindness, 1980.
2. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—full report, with commentary. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50212.
3. National Society for the Prevention of Blindness. NSPB standard classification of causes of severe vision impairment and blindness. Part II: index of diagnostics terms. New York: National Society for the Prevention of Blindness, 1966.
4. Ferris FL. How effective are treatments for diabetic retinopathy? JAMA 1993;269:1290–1.
5. Brechner RJ, Cowie CC, Howie LJ, Herman WH, Will JC, Harris MI. Ophthalmic examination among adults with diagnosed diabetes mellitus. JAMA 1993;270:1714–8.
6. Klein R, Klein BE. Vision disorders in diabetes. In: National Diabetes Data Group, National Institutes of Health. Diabetes in America. 2nd ed. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, 1995:85–116; DHHS publication no. (NIH)95-1468.
7. Kahn HA, Moorhead HB. Statistics on blindness in the Model Reporting Area, 1969–70. Washington, DC: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Eye Institute, 1973; publication no. (NIH)73-427.
8. Ederer F. Methodological problems in eye disease epidemiology. Epidemiol Rev 1983;5:51–66.
9. El-Hashimy MM, Aubert RE, Alich K, et al. Strategies to improve reporting of legal blindness to the Massachusetts Commission for the Blind. Am J Public Health (in press).

Hepatic and Renal Toxicity Among Patients Ingesting Sheep Bile as an Unconventional Remedy for Diabetes Mellitus — Saudi Arabia, 1995

A recent report of acute hepatic and renal toxicity associated with drinking bile from fish (grass carp) (*1*) alerted epidemiologists in Saudi Arabia to the possibility of similar risks associated with an existing practice of drinking sheep bile. To assess the prevalence and adverse effects of this practice, in 1995 the Field Epidemiology Training Program of the Ministry of Health of Saudi Arabia initiated an investigation in Al-Wadein village (1995 population: 5640) in the Asir Region of Saudi Arabia where a traditional healer had advised patients with diabetes to drink raw sheep bile as a treatment for their diabetes. This report presents the findings of the investigation, which demonstrate gastrointestinal, hepatic, and renal toxicity associated with ingestion of sheep bile.

Initial reviews of all 73 patients with adult-onset diabetes mellitus who were registered at the two primary health-care centers in the village identified 30 men aged 53–78 years who reported using unconventional medicine as diabetes therapy. These 30 were interviewed about underlying illnesses, ingestion of sheep bile, and subsequent illnesses. Three local hospitals provided information about serum chemistries obtained from annual examinations during the year preceding ingestion of bile (baseline), during acute illnesses that occurred immediately following reported ingestion, and 2 months after ingestion.

Of the 30 men, 14 (including five on hemodialysis for chronic renal failure) reported that they had tried the prescribed regimen of drinking sheep bile to cure diabetes once during a 4-year period. The traditional healer had advised a single regimen of

Hepatic and Renal Toxicity — Continued

1–2 15-mL doses of bile before breakfast for 30 consecutive days for all patients. Two patients discontinued this regimen after the first 15-mL dose because of severe nausea. Others continued for 2–7 days, ingesting 30 mL–210 mL of bile until more severe symptoms caused them to discontinue the regimen.

All 14 patients reported onset of nausea and anorexia immediately after ingesting the bile, and 12 who ingested >15 mL also reported vomiting with diarrhea within 36 hours after the first dose; none reported fever. All 14 sought medical treatment, and 12 were hospitalized for gastrointestinal symptoms during the week after drinking bile. One patient became oliguric, and one patient became comatose. Cultures of stool specimens from 13 patients were negative for bacterial pathogens.

The 14 patients sought care for acute gastrointestinal disease within 1 week of beginning bile treatments. Mean serum alanine aminotransferase (ALT) levels for the 14 had increased from a baseline of 32 U/L (range: 23 U/L–57 U/L) to 289 U/L (range: 56 U/L–497 U/L) ($p<0.001$, paired t-test). In comparison, among the 16 patients who used unconventional medicines other than bile treatments, the baseline mean ALT levels were 27 U/L (range: 15 U/L–42 U/L) ($p<0.01$, t-test). Other serum levels (bilirubin, aspartate aminotransferase, and alkaline phosphatase) also were elevated in patients using sheep bile. The absolute difference between baseline and postingestion serum ALT was higher in direct relation to higher doses of ingested bile ($r=0.88$; 95% confidence interval [CI]=0.76–0.94). Tests for hepatitis infection (immunoglobulin M antibody to hepatitis A virus, hepatitis B surface antigen, and antibody to hepatitis C virus) were negative. Serum ALT remained elevated (mean: 54 U/L; range: 26 U/L–249 U/L) 2 months after acute illness ($p<0.01$, paired t-test).

Among patients who had ingested bile, the mean serum creatinine increased from a baseline of 4.0 mg/100 mL (range: 0.6 mg/100 mL–10.4 mg/100 mL) to a postingestion level of 8.0 mg/100 mL (range: 1.9 mg/100 mL–20 mg/100 mL) ($p<0.001$, paired t-test). Serum sodium levels declined from a baseline of 139 meq/L (range: 135 meq/L–142 meq/L) to 131 meq/L (range: 127 meq/L–140 meq/L) ($p<0.001$, paired t-test). The absolute difference between baseline and postingestion serum creatinine increased ($r=0.6$; 95% CI=0.3–0.8) and serum sodium decreased ($r=-0.38$; 95% CI=–0.66 to –0.01) in direct relation to dose of ingested bile. Biochemical indicators of renal toxicity returned to baseline levels in each of the patients 2 weeks after seeking treatment for the acute illness.

Each of the 14 patients had discontinued use of insulin or oral hypoglycemic agents during the bile treatment. Compared with a baseline of 196 mg/100 mL (range: 150 mg/100 mL–270 mg/100 mL) before ingestion of bile, the mean blood glucose (random blood sugar) during acute illness was 253 mg/100 mL (range: 180 mg/100 mL–357 mg/100 mL) ($p<0.001$, paired t-test). However, the absolute difference between baseline and exposure serum glucose levels was unrelated to the volume of bile ingested ($r=0.01$; 95% CI= –0.36 to 0.38).

None of the attending physicians for the 14 patients had obtained histories of bile ingestion or suspected bile toxicity. Following the investigation, the Ministry of Health contacted all medical facilities to ask physicians to identify and report any incidents of ingestion of bile.

Reported by: MS Al-Qahtani, MBBS, Field Epidemiology Training Program, Ministry of Health, Kingdom of Saudi Arabia.

Hepatic and Renal Toxicity — Continued

Editorial Note: The gastrointestinal, hepatic, and renal toxicity in the patients in Saudi Arabia is consistent with known cytotoxic effects of bile acids (*2,3*), and ingestion of bile acid as therapy for cholelithiasis has been associated with diarrhea and mild elevations in serum transaminases (*4*). Although renal toxicity has not been documented previously in persons who ingest bile acids, exposure in dogs has been associated with decreased inulin clearance and a natriuretic effect (*5*). Exogenous administration of bile acids will saturate the enterohepatic cycle and result in increased levels of circulating serum bile acids (*6*). The cytotoxicity of individual bile acids reflects levels of hydrophobicity; chenodeoxycholic and deoxycholic acids are more cytotoxic than cholic acid (*3*). The minimum 15-mL dose of sheep bile contains an estimated average 271 mg of bile acids (including 47% deoxycholic, 25% chenodeoxycholic, 23% cholic, and 5% lithocholic acids)—the equivalent of 36% of the maximum daily dose of bile acids used for treating cholelithiasis and 9% of the total bile acid pool (3.0 g) in adults (*4,7*). The toxic component of grass carp bile, associated previously with similar toxic reactions, probably was 5-alpha-cyprinol (*1,8*), an alcohol sulfate of a bile acid with physiologic function of a bile acid in lower vertebrates (*9*).

The investigation described in this report indicates the potential for direct toxicity associated with unconventional treatment of diabetes. In addition, because these patients discontinued conventional treatment of diabetes, control of blood sugar levels was impaired. Unconventional therapy for diabetes may be common; an estimated 34% of adults in the United States have used unconventional therapy for any health problem during a 12-month period (*10*). Because patients are unlikely to offer spontaneous, unsolicited histories of unconventional therapy, physicians who manage patients with diabetes and other chronic or recurrent diseases should actively seek information from patients to identify unconventional therapies.

References

1. CDC. Acute hepatitis and renal failure following ingestion of raw carp gallbladders—Maryland and Pennsylvania, 1991 and 1994. MMWR 1995;44:565–6.
2. Heaton KW. Bile salts in health and disease. Edinburgh: Churchhill Livingstone, 1972:116–24.
3. Sagawa H, Tazuma S, Kajiyama G. Protection against hydrophobic bile salt-induced cell membrane damage by liposomes and hydrophilic bile salts. Am J Physiol 1993;264(5 pt 1):G835–G839.
4. Schoenfield LJ, Lachin JM. Chenodiol (chenodeoxycholic acid) for dissolution of gallstones: the National Cooperative Gallstone Study. Ann Intern Med 1981;95:257–82.
5. Alon U, Berant M, Mordechovitz D, Better OS. The effect of intrarenal infusion of bile on kidney function in the dog. Clin Sci 1982;62:431–3.
6. De Barros SG, Balistreri WF, Soloway RD, Weiss SG, Miller PC, Soper K. Response of total and individual serum bile acids to endogenous and exogenous bile acid input to the enterohepatic circulation. Gastroenterology 1982;82:647–52.
7. Bobowiec R. Effects of the intravenous infusion of sodium salts of bile acids on bile flow and bile acids of sheep [Polish]. Annales Universitatis Mariae Curie-Sklodowska, DD Medicina Veterinaria, 1984;39:29–42.
8. Yip LL, Chow CL, Yung KH, Chiu KW. Toxic material from the gallbladder of the grass carp (*Ctenopharyngodon idellus*). Toxicon 1981;19:567–9.
9. Hazelwood GAD. Bile salt evolution. J Lipid Res 1967;8:535.
10. Eisenberg DM, Kessler RC, Foster C, Norlock FE, Calkins DR, Delbanco TL. Unconventional medicine in the United States: prevalence, costs, and patterns of use. N Engl J Med 1993; 328:246–52.

Imported Malaria and Use of Malaria Chemoprophylaxis by Travelers — Kentucky, Maryland, and United States, 1993–1994

Malaria surveillance has been maintained in the United States since indigenous transmission was interrupted in the late 1940s. Most reported cases in this country are acquired during international travel or occur among persons who resided in malaria-endemic countries. During 1993–1994, the number of reported cases increased in Kentucky and Maryland. This report summarizes the investigations of these cases and compares findings with national data from 1993, which indicate many travelers who acquired malaria infection failed to take appropriate chemoprophylaxis.

Kentucky. During 1993–1994, a total of 16 confirmed cases of malaria (Table 1) were reported to the Kentucky Department for Public Health, twice the total reported during 1991–1992. Case report forms were reviewed, and additional clinical information was obtained through review of hospital medical records and by contacting patients, reporting physicians, or military health officers. Most infections were acquired in Africa (seven [44%]), followed by Central America (six [38%]) and Asia (three [19%]). Three of the six U.S. civilians with malaria reported using chemoprophylaxis during exposure; none of these patients had used a drug recommended by CDC. Of the three civilians who did not use prophylaxis, two were unaware of the need, and one was aware but did not use it.

Maryland. In Maryland, 83 cases of malaria were reported in 1994, a 46% increase over the 57 cases reported in 1993. CDC Malaria Case Surveillance Report forms, Maryland Confidential Morbidity Report forms, and laboratory reports were reviewed; local health departments were contacted for missing data. Of the 75 cases with known country of travel, 53 (64% of all cases) were acquired in Africa. Of the 37 U.S. civilians for whom data were available, 13 (35%) reported use of chemoprophylaxis during the period of probable exposure (Table 1). Of nine U.S. civilians for whom information about chemoprophylaxis was available, two (22%) had used a drug recommended by CDC. The adequacy of their dosing regimens was unknown.

United States. In 1993, state and territorial health departments reported 1275 cases of malaria to CDC (CDC, unpublished data, 1993), a 40% increase over the 910 cases reported in 1992 (*1*). The increase reflected cases among military personnel returning from Somalia and improved reporting of cases identified in New York City. Most malaria cases were acquired in Africa (58%), followed by Asia (20%) and Central America and the Caribbean (11%) (Table 1). Eight deaths were associated with infection with *Plasmodium falciparum*. Of the 482 U.S. civilians with imported malaria for whom information about use of chemoprophylaxis was available, 253 (52%) used chemoprophylaxis during the period of probable exposure. Of the 225 persons for whom information about drugs used were available, 109 (48%) used recommended drugs; 57 (52%) of these patients had infections consistent with relapse of *P. vivax* or *P. ovale* infection. Of the 34 nonrelapse-associated cases for which data about dosing regimen were available, 11 (32%) used recommended doses of mefloquine, and 23 (68%) were noncompliant. Five of the 11 persons who were compliant had *P. falciparum* infection. Serum levels of mefloquine were inadequate to provide protection from blood stage infection in four of these five cases for whom levels were measured (*2*). The remaining six persons who were compliant were diagnosed with *P. malariae* infection

Malaria — Continued

TABLE 1. Number and percentage of reported cases of malaria, by selected characteristics — Kentucky*, 1993–1994, Maryland†, 1994, and United States§, 1993

Characteristic	1993–1994 Kentucky (n=16)		1994 Maryland (n=83)		1993 United States (n=1275)	
	No.	(%)	No.	(%)	No.	(%)
U.S. civilian	6	(37)	38	(46)	519	(41)
Proportion of cases acquired by travel	16	(100)	83	(100)	1264	(99)
Species						
Plasmodium vivax	7	(44)	18	(22)	663	(52)
P. falciparum	5	(31)	41	(49)	457	(36)
P. ovale	0	—	1	(1)	41	(3)
P. malariae	1	(6)	5	(6)	53	(4)
Mixed	2	(13)	0	—	2	(<1)
Unknown	1	(6)	18	(22)	59	(5)
Region of acquisition						
Africa	7	(44)	53	(64)	745	(58)
Asia	3	(19)	13	(16)	259	(20)
Central America	6	(38)	7	(8)	146	(11)
Other/Unknown	0		10	(12)	125	(10)
Proportion of U.S. civilians who used chemoprophylaxis	3	(50)	13	(35)	253	(52)
Correct drug¶	*0*	(33)	*2*	*(22)*	*109*	*(48)*
*Correct dose***	—		*Unknown*		*11*	*(32)*

*1994 population 3,828,000.
†1994 population 5,000,000.
§1994 population 261,523,872.
¶U.S. civilians for whom information about use of chemoprophylaxis was available (one of three in Kentucky, two of nine in Maryland, and 109 of 225 in the United States).
**U.S. civilians who used a drug recommended by CDC.

1–2 months after completing their course of chemoprophylaxis. Overall, 84% of U.S. civilians with malaria reported that they had not used or had incorrectly used chemoprophylaxis.

Reported by: D Embry, Jefferson County Health Dept, Louisville; R Finger, MD, State Epidemiologist, Dept for Public Health, Kentucky Cabinet for Health Svcs. M Ryan, MD, C Kratt, MD, C Groves, J Moses, MD, E Porter, MD, E Israel, MD, D Dwyer, MD, State Epidemiologist, State of Maryland Dept of Health and Mental Hygiene. Malaria Section, Epidemiology Br, Div of Parasitic Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Malaria is preventable through effective chemoprophylactic regimens that are safe and well tolerated (*3*). The drug of choice for travel to most areas with chloroquine-resistant *P. falciparum* is mefloquine. In a previous survey of 139,000 European travelers to East Africa, the frequencies of adverse reactions to mefloquine and chloroquine were similar and included reports of dizziness in 7.6% and 5.3% of mefloquine and chloroquine users, respectively, and serious neuropsychiatric reactions (i.e., fatal, life-threatening, or disabling reactions or reactions that resulted in or prolonged a patient's stay in a hospital or lead to malignancy or congenital anomaly) in 0.009% and 0.007%, respectively (*3*).

The objectives of the national malaria surveillance system are to identify episodes of malaria transmission in the United States and to monitor trends in imported cases.

Malaria — Continued

Information collected about trends in imported cases of malaria and on the effectiveness of chemoprophylactic measures used by travelers assists in guiding prevention recommendations (*4*). The reasons for the increase in reported cases in Kentucky and Maryland are unknown but may include increased travel to malaria-endemic areas. In these two states and nationally, most persons who contracted malaria during travel to a malaria-endemic area failed to use appropriate chemoprophylaxis. Of those who did use chemoprophylaxis, fewer than half used an optimal drug or dosing regimen for preventing malaria. Similarly low rates of compliance with chemoprophylactic regimens (40%–50%) have been documented in surveys of travelers (*5–7*).

Failure of prophylaxis may occur for at least four reasons. First, travelers may not seek or follow advice or may receive inaccurate advice regarding antimalarial medication. Second, travelers may forget to use prophylaxis, may not completely understand chemoprophylactic advice, or may be advised by peers not to use chemoprophylaxis (*7*). Third, persons who visit friends or relatives living in areas with endemic malaria often are less likely than other tourists to obtain pretravel advice (*8*) or to use chemoprophylaxis (*5,8*) and are more likely to have malarial illnesses (*9*). Fourth, many physicians infrequently provide pretravel advice to patients and may not be aware of the current recommendations.

Prevention of malaria requires educating travelers about the health risks associated with travel and the need to obtain pretravel medical advice, and educating health-care providers regarding optimal and accurate malaria prevention recommendations. Providing written instructions to travelers may decrease noncompliance caused by misunderstanding of advice. Because travelers who visit friends or relatives may seek pretravel medical advice through the health-care system less frequently than other tourists, alternative means (e.g., through the travel industry) may be needed to advise these persons. The need for chemoprophylaxis and the choice of antimalarial medication depend on the travel destination (e.g., country of travel or urban versus rural setting); therefore, health-care providers need to elicit a complete travel itinerary before prescribing chemoprophylaxis. In addition, because optimal chemoprophylactic regimens are not 100% effective, patients and physicians need to be aware that prompt diagnostic evaluation should be conducted if symptoms of malaria occur after travel.

Copies of a travelers' information brochure on malaria prevention measures, "Preventing Malaria in Travelers, A Guide for Travelers to Malarious Areas," is available for travel companies and health-care providers and can be obtained by sending a facsimile request to (770) 488-7761. Detailed recommendations for preventing malaria are available 24 hours a day by telephone ([404] 332-4555) or facsimile ([404] 332-4565) from CDC's Malaria Hotline and are published annually in *Health Information for International Travel* (*10*), available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9235; telephone (202) 512-1800.

Health-care workers are encouraged to consider malaria in the differential diagnosis of fever in persons recently returning from international travel and to report cases to state or local health departments. Consultation on malaria treatment recommendations are available from CDC's Division of Parasitic Diseases, National Center for Infectious Diseases, telephone (770) 488-7760, from 8:00 a.m. to 4:30 p.m. eastern time Monday through Friday and (404) 639-2888 at other hours and on weekends.

Malaria — Continued

References

1. Zucker JR, Barber AM, Paxton LA, et al. Malaria surveillance—United States, 1992. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, 1995.
2. Zucker JR, Campbell CC. Malaria: principles of prevention and treatment. Infect Dis Clin North Am 1993;7:547–67.
3. Steffen R, Fuchs E, Schildknecht J, et al. Mefloquine compared with other malaria chemoprophylactic regimens in tourists visiting East Africa. Lancet 1993;341:1299–303.
4. Lackritz EM, Lobel HO, Howell BJ, Bloland P, Campbell CC. Imported *Plasmodium falciparum* malaria in American travelers to Africa. JAMA 1991;265:383–5.
5. Lobel HO, Phillips-Howard PA, Brandling-Bennett AD, et al. Malaria incidence and prevention among European and North American travellers to Kenya. Bull World Health Organ 1990; 68:209–15.
6. Lobel HO, Campbell CC, Pappaioanou M, Huong AY. Use of prophylaxis for malaria by American travelers to Africa and Haiti. JAMA 1987;257:2626–7.
7. Phillips-Howard PA, Blaze M, Hurn M, Bradley DJ. Malaria prophylaxis: survey of the response of British travellers to prophylactic advice. BMJ 1986;293:932–4.
8. Bloland PB, Lobel H, Gartner G, Klumpp L, Schwartz I, Campbell CC. Imported *Plasmodium falciparum* malaria in Americans traveling to Africa: a case follow-up survey. In: Lobel H, Steffen R, Kozarsky PE, eds. Travel medicine 2: proceedings of the Second Conference on International Travel Medicine. Atlanta, Georgia: International Society of Travel Medicine, 1992.
9. Phillips-Howard PA, Radalowicz A, Mitchell J, Bradley DJ. Risk of malaria in British residents returning from malarious areas. BMJ 1990;300:499–503.
10. CDC. Health information for international travel, 1995. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, 1995; DHHS publication no. (CDC) 94-8280.

Assessment of National Reporting of Drug-Resistant *Streptococcus pneumoniae* — United States, 1995–1996

Because of the rapidly emerging resistance of *Streptococcus pneumoniae* (SP) infections to penicillin and other antimicrobial agents, the Drug-Resistant *Streptococcus pneumoniae* Working Group (DRSPWG) was established in 1993 to develop a strategy to minimize the impact of drug-resistant SP (DRSP) (*1*). Based on a recommendation from the DRSPWG, in 1994 the Council of State and Territorial Epidemiologists (CSTE) resolved that each state should designate as reportable to state and federal officials all invasive infections caused by DRSP (*2*). In 1995, health departments in 14 jurisdictions (Arkansas, Colorado, Connecticut, Georgia, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, South Carolina, and New York City) instituted regulations requiring laboratories to report the isolation of DRSP from specimens obtained from normally sterile sites (e.g., cerebrospinal fluid and blood). To determine the impact of the CSTE resolution on nationwide reporting of DRSP, in May 1996 CDC conducted a telephone survey of public health officials in all states, New York City, and the District of Columbia. This report summarizes the survey findings, which indicate an increase in the proportion of jurisdictions that conduct surveillance for DRSP.

CDC contacted by telephone the state/territorial epidemiologist or their designee in each of the 50 states and the District of Columbia and the Commissioner of Health for New York City. The response rate was 100%. Respondents were asked whether DRSP was designated as reportable in their jurisdiction and about their methods of collecting, analyzing, and disseminating information regarding DRSP and barriers to DRSP

Drug-Resistant Streptococcus pneumoniae — *Continued*

surveillance. Respondents from jurisdictions in which DRSP was not reportable were asked whether any other organization or program in the jurisdiction conducted DRSP surveillance.

Of the 52 participating jurisdictions, 16 (31%) had designated DRSP reportable by initiating surveillance, and 12 (23%) were planning to require DRSP reporting by June 1997. Of the 13 jurisdictions for which data were available, six collected information about invasive pneumococcal isolates, and seven collected information about both invasive and noninvasive isolates. Information about infections caused by intermediate and resistant (i.e., nonsusceptible) SP isolates is or will be collected by 19 (68%) of the 28 states that have initiated or plan to initiate DRSP surveillance. Seven (25%) jurisdictions collected or plan to collect information about all invasive pneumococcal infections (i.e., susceptible and nonsusceptible) to enable estimation of the proportion of invasive SP isolates that were not susceptible to antimicrobials.

All 28 jurisdictions that have initiated or plan to initiate DRSP surveillance reported disseminating or planning to disseminate surveillance findings to the health-care workers and organizations in their respective jurisdictions through one or more methods, including the state epidemiology/public health bulletin (83%), presentations at medical society meetings (17%), and broadcast electronic messages (e.g., e-mail and World Wide Web pages) (17%).

Of the 52 respondents, 39 (75%) reported having encountered barriers to implementation of DRSP surveillance within their state, including lack of awareness among laboratory personnel and physicians about requirements to report DRSP (42%), lack of standardization of susceptibility-testing methods among laboratories (25%), and lack of resources from state health departments (SHDs) for surveillance (17%). Responses to an open-ended question identified lack of a specified federal mechanism for reporting DRSP to CDC as a barrier to national DRSP surveillance.

Reported by: Childhood and Respiratory Diseases Br, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: SP is a leading cause of morbidity and mortality in the United States, resulting each year in an estimated 3000 cases of meningitis, 50,000 cases of bacteremia, 500,000 cases of pneumonia, and 7,000,000 cases of otitis media (*3–5*). Case-fatality rates vary by age and underlying illnesses of patients: among elderly persons with pneumococcal bacteremia, 40% of cases are fatal, and among children and adults with meningitis, 6% and 30% of cases, respectively, are fatal despite appropriate antimicrobial therapy (*6*). The emergence of DRSP further complicates management and treatment of these common infections; however, the lack of a systematic surveillance system for DRSP constrains calculation of accurate estimates of the prevalence of DRSP.

The findings in this report indicate that many jurisdictions either have implemented (16 jurisdictions) or are planning to implement (12 jurisdictions) DRSP surveillance to characterize the public health impact of DRSP; however, mechanisms for reporting data to CDC are present in only a few jurisdictions. Population-based laboratory surveillance enables the accurate assessment of geographic and temporal trends in DRSP. States that conducted such surveillance in 1995 included those participating in CDC's Emerging Infections Program (California, Connecticut, Minnesota, and Oregon) and those participating in the Active Laboratory-Based Surveillance System (Georgia, Maryland, Tennessee, and Texas). State-based surveillance systems should especially

collect data from clinical laboratories about the antimicrobial susceptibility of invasive pneumococcal isolates. Data should be aggregated, analyzed, and reported to local health-care providers in a timely manner. Clinical health-care providers can use information specific to their communities to select appropriate antimicrobial agents when initiating empiric treatment for persons with presumptive pneumococcal infections, and public health officials can use such information to develop interventions for specific communities or regions (*1*).

The two options for state and local health officials to report information about DRSP to CDC are completion and submission of case- report forms and electronic transmission of case information. Electronic laboratory reporting is the preferred method of reporting because it facilitates rapid feedback of information to laboratories, state and local health departments, CDC, and health-care professionals. Through electronic reporting, SHDs can report to CDC all cases of invasive pneumococcal infections and the antimicrobial susceptibility patterns of the pneumococcal isolates to enable calculation of the prevalence of DRSP. The Public Health Laboratory Information System (PHLIS), available in all SHD laboratories, can be used for electronic reporting of DRSP. PHLIS is a personal computer-based reporting system for local, county, or state organizations and can be used to enter, edit, and analyze data on-site and then transmit that information to other state or federal offices. Data in PHLIS is maintained in a format that can be made compatible with data in the state epidemiologist's office and can be easily shared between the laboratory and the epidemiology office on a local area network (*7*). In the future, it is anticipated that electronic reporting of information from clinical laboratories to public health officials will be possible using a standardized message format (e.g., Health Level Seven).

Additional information about DRSP reporting or training in PHLIS-based electronic reporting is available from CDC's Childhood and Respiratory Diseases Branch, Division of Bacterial and Mycotic Diseases, by telephone ([404] 639-2215] or e-mail (drsp@ciddbd1.em.cdc.gov).

References

1. CDC. Defining the public health impact of drug-resistant *Streptococcus pneumoniae*: report of a working group. MMWR 1996;45(no. RR-1).
2. CDC. National surveillance for infectious diseases, 1995. MMWR 1995;44:737–9.
3. Breiman RF, Butler JC, Tenover FC, Elliott JA, Facklam RR. Emergence of drug-resistant pneumococcal infections in the United States. JAMA 1994;271:1831–5.
4. Reichler MR, Allphin AA, Breiman RF, et al. The spread of multiply-resistant *Streptococcus pneumoniae* at a day care center in Ohio. J Infect Dis 1992;166:1346–53.
5. Stool SE, Field MJ. The impact of otitis media. Pediatr Infect Dis J 1989;8:S11–S14.
6. Wenger JD, Hightower AW, Facklam RR, Gaventa S, Broome CV, the Bacterial Meningitis Study Group. Bacterial meningitis in the United States, 1986: report of a multistate surveillance study. J Infect Dis 1990;162:1316–23.
7. Martin SM, Bean NH. Data management issues for emerging diseases and new tools for managing surveillance and laboratory data. Emerging Infectious Diseases 1995;1:124–8.

Notices to Readers

Nucleic Acid Amplification Tests for Tuberculosis

Traditional methods for laboratory diagnosis of tuberculosis (TB) may require weeks, and delay can impede treatment and control efforts. Nucleic acid amplification (NAA) tests, such as polymerase chain reaction (PCR) and other methods for amplifying DNA and RNA, may facilitate rapid detection of microorganisms. An NAA test for *Mycobacterium tuberculosis* complex (Amplified Mycobacterium Tuberculosis Direct Test or MTD [Gen-Probe®, San Diego, California])* was recently approved by the Food and Drug Administration (FDA) for use on processed clinical specimens (*1*), and others are under development. Although NAA tests have been offered by individual laboratories, approval of commercial kits may result in increased use for clinical practice and TB control. This report summarizes potential uses of NAA tests for TB diagnosis and provides interim guidelines for the use of such tests.

Current NAA Tests and FDA-Approved Uses

The MTD test uses transcription-mediated amplification to detect *M. tuberculosis*-complex ribosomal RNA (*2*). The test is approved for use in conjunction with culture for respiratory specimens that are positive for acid-fast bacilli (AFB) on microscopy and were obtained from untreated patients. Based on the product label (package insert), test sensitivity in clinical trials was 95.5%, and specificity was 100%. The specificity does not indicate the growth of *M. tuberculosis* from all MTD-positive specimens: trials included MTD-positive, culture-negative specimens from patients with other positive cultures, and there are other reports of test readings "in the low range of positivity" with nontuberculous mycobacteria (*2*). Users should consult the label for additional information.

When used as approved, a positive MTD test result can provide relatively rapid feedback, indicating a high likelihood of TB. Some public health professionals have considered a negative result to be contributory information for prioritizing contact investigations. False-negative results may be obtained for specimens containing low numbers of *M. tuberculosis* or substances inhibiting the assay. Regardless of MTD results, mycobacterial culture is required for drug-susceptibility testing and precise species and strain identification. As approved for use on AFB-smear-positive respiratory specimens, MTD tests usually will not change the eligibility of a case for surveillance reporting: patients for whom results are positive generally would meet the surveillance case definition previously published by CDC (*3*).

Several other NAA tests are under commercial development, including the Roche Amplicor™ test (*4*), a PCR-based test that amplifies mycobacterial DNA. This test was publicly considered in January 1996 by an FDA advisory panel, which recommended approval for use similar to the MTD. If such tests are approved, principles guiding their use would be similar to those for the MTD test.

Because specimen type and clinical setting affect interpretation of NAA tests, clinicians should provide information about patients and specimens to the laboratory, and laboratory directors should provide information about local test performance and interpretation both when tests are ordered and when results are reported. Clinicians should be educated about use under local conditions (predictive values vary with

*Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Notices to Readers — Continued

prevalence of TB and other mycobacterial diseases) and employ results as an adjunct to other clinical and microbiologic information.

Off-Label Uses

Although some laboratories use FDA-approved tests for nonapproved indications (off-label uses), available information often is insufficient to guide test interpretations. For example, information is limited regarding test performance for smear-negative specimens, nonrespiratory specimens, or specimens from treated patients: preliminary results suggest NAA tests are less sensitive for smear-negative specimens (*4,5*), may produce false-positive results (*4,5*), and often remain positive after cultures become negative during therapy (*6,7*). Approved NAA tests are different from NAA tests developed by individual laboratories for in-house use (which have not been reviewed by FDA and may perform differently [*8,9*]) and from the non-NAA AccuProbe® approved for use on culture isolates.

Limitations and Cautions

Used as approved by FDA, NAA tests for TB diagnosis do not replace any previously recommended tests. Material from a clinical specimen should not be reserved for NAA testing if this compromises the ability to perform established tests with better-defined implications (e.g., AFB smear as a guide to infectiousness or culture to confirm diagnosis, determine drug susceptibility, and monitor treatment response). Data are not sufficient to predict interlaboratory variability, the relation of NAA results to infectiousness, or off-label performance.

Conclusions

Based on available information, decisions about when and how to use NAA tests for TB diagnosis should be individualized. The tests may enhance diagnostic certainty but should be interpreted in a clinical context and on the basis of local laboratory performance. Implications may differ for public health and individual clinical decisions; the most effective use of these tests to facilitate such decisions is not yet understood, and off-label performance is not well documented.

Reported by: Center for Devices and Radiologic Health; Center for Drug Evaluation and Research, Food and Drug Administration. Advisory Council for the Elimination of Tuberculosis. National Center for HIV, STD, and TB Prevention; National Center for Infectious Diseases; and Public Health Practice Program Office, CDC.

References

1. Nightingale SL. From the Food and Drug Administration: new tuberculosis test approved. JAMA 1996;275:585.
2. Gen-Probe®. Amplified mycobacterium tuberculosis direct test for *in-vitro* diagnostic use: 50 test kit [Package insert]. San Diego, California: Gen-Probe®, July 23, 1996.
3. CDC. Case definitions for public health surveillance. MMWR 1990;39(no. RR-13):41–2.
4. Bennedsen J, Ostergaard Thomsen V, Pfyffer GE, et al. Utility of PCR in diagnosing pulmonary tuberculosis. J Clin Microbiol 1996;34:1407–11.
5. Bradley SP, Reed SL, Catanzaro A. Clinical efficacy of the amplified *Mycobacterium tuberculosis* direct test for the diagnosis of pulmonary tuberculosis. Am J Respir Crit Care Med 1996;153: 1606–10.
6. Hellyer TJ, Fletcher TW, Bates JH, et al. Strand displacement amplification and the polymerase chain reaction for monitoring response to treatment in patients with pulmonary tuberculosis. J Infect Dis 1996;173:934–41.
7. Moore DF, Curry JI, Knott CA, Jonas V. Amplification of rRNA for assessment of treatment response of pulmonary tuberculosis patients during antimicrobial therapy. J Clin Microbiol 1996;34:1745–9.

Notices to Readers — Continued

8. Noordhoek GT, Kolk AH, Bjune G, et al. Sensitivity and specificity of PCR for detection of *Mycobacterium tuberculosis*: a blind comparison study among seven laboratories. J Clin Microbiol 1994;32:277–84.
9. CDC. Diagnosis of tuberculosis by nucleic acid amplification methods applied to clinical specimens. MMWR 1993;42:35.

Availability of Information on Diabetes Awareness

Three resources to promote diabetes awareness are available to the public. CDC's Diabetes Home Page on the Internet World Wide Web (http://www.cdc.gov/nccdphp/ddt/ddthome.htm) provides information on diabetes and how to contact state and territorial diabetes control programs. These programs operate in health departments in 49 states, four territories, and the District of Columbia and collaborate with CDC to conduct diabetes prevention and control activities.

National Eye Health Education Program (NEHEP) partnership organizations coordinate and conduct activities to increase awareness of the risks and hazards of diabetic eye disease and encourage persons with diabetes to receive an annual dilated eye examination. Additional information about this program is available from NEHEP, National Eye Institute, National Institutes of Health, 2020 Vision Place, Bethesda, MD 20892-3655; telephone (301) 496-5248. NEHEP materials are available by calling (800) 869-2020.

Diabetes: A Serious Public Health Problem, At-A-Glance, 1996, is a four-page introduction to some of CDC's efforts to reduce the burden of diabetes. This resource is available on CDC's Diabetes Home Page and discusses the increasing prevalence of diabetes and diabetes complications. Additional information is available from CDC's National Center for Chronic Disease Prevention and Health Promotion, 4770 Buford Highway, NE, Mail Stop K-10, Atlanta, GA 30341-3724; telephone (770) 488-5000.

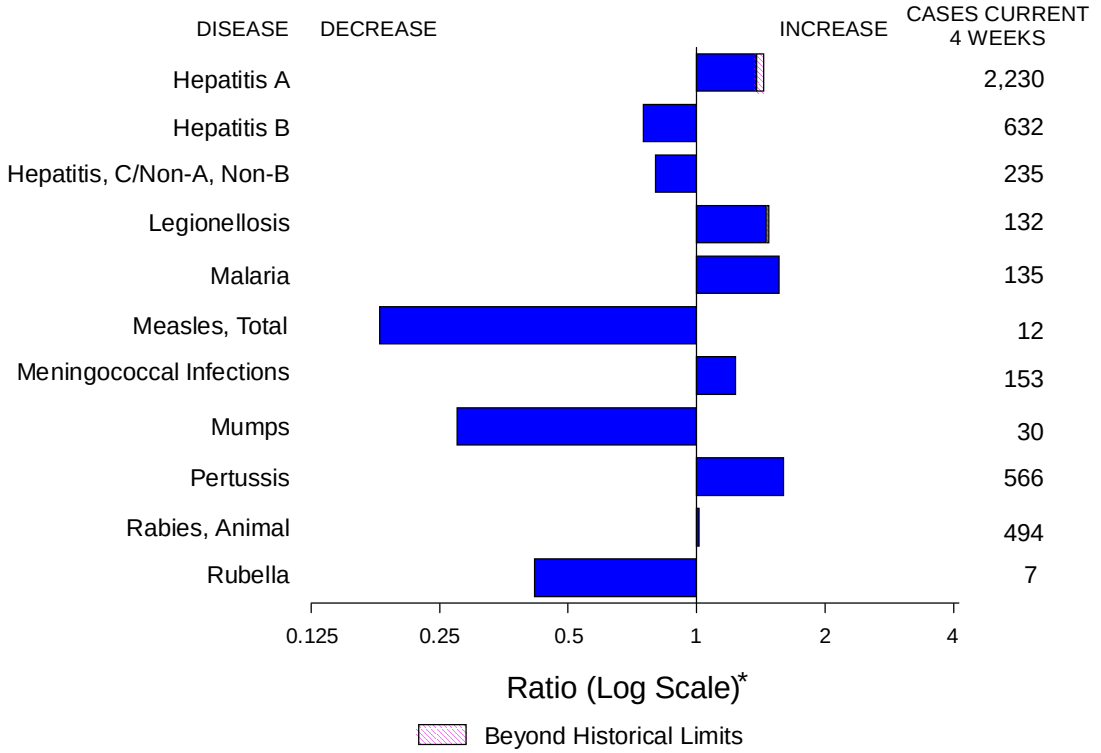
Satellite Videoconference on Drug-Resistant *Streptococcus pneumoniae*

On November 14, 1996, "Recognition and Management of Drug-Resistant *Streptococcus pneumoniae* (DRSP): Challenges Facing the Health Care System," a live satellite videoconference, will be broadcast to sites nationwide on the Public Health Training Network from 6:30 p.m. to 7:30 p.m. eastern standard time (EST) and repeated at 9:00 p.m.–10:00 p.m. EST. Cosponsors are CDC and the National Foundation for the Centers for Disease Control and Prevention.

Toll-free telephone lines will be available for participants to ask questions regarding surveillance, epidemiology, investigation, and prevention and control of DRSP. This course is designed for clinicians, laboratorians, public health officials, and other health-care professionals who work in infectious disease, pediatrics, internal medicine, and family practice. Continuing education credits will be offered for a variety of professions, based on 1 hour of instruction.

Additional information is available from state distance learning coordinators; Logical Communications, Inc., telephone (800) 422-0016 (in Connecticut, [203] 866-4276); or on the World Wide Web at http://www.cdc.gov/ncidod/dbmd/drspconf.htm.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending October 26, 1996, 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 — provisional cases of selected notifiable diseases, United States, cumulative, week ending October 26, 1996 (43rd Week)

	Cum. 1996		Cum. 1996
Anthrax	-	HIV infection, pediatric*§	216
Brucellosis	67	Plague	2
Cholera	3	Poliomyelitis, paralytic¶	-
Congenital rubella syndrome	1	Psittacosis	35
Cryptosporidiosis*	1,824	Rabies, human	1
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	601
Encephalitis: California*	96	Streptococcal toxic-shock syndrome*	13
eastern equine*	2	Syphilis, congenital**	225
St. Louis*	-	Tetanus	23
western equine*	-	Toxic-shock syndrome	112
Hansen Disease	89	Trichinosis	17
Hantavirus pulmonary syndrome*†	18	Typhoid fever	292

-: no reported cases
*Not notifiable in all states.
† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§ Updated monthly to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention (NCHSTP), last update September 24, 1996.
¶ Three suspected cases of polio with onset in 1996 has been reported to date.
**Updated quarterly from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending October 26, 1996, and October 28, 1995 (43rd Week)

Reporting Area	AIDS*		Chlamydia	*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB		Legionellosis	
				NETSS†	PHLIS§						
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	51,611	59,358	313,100	2,260	1,205	246,075	325,738	2,754	3,325	784	976
NEW ENGLAND	2,065	2,843	13,704	305	75	5,696	6,340	99	104	62	30
Maine	32	82	733	21	-	52	75	-	-	2	5
N.H.	66	77	397	38	36	80	95	8	12	3	2
Vt.	18	28	U	31	29	42	53	32	11	4	-
Mass.	997	1,236	5,829	139	10	1,844	2,249	53	74	26	19
R.I.	129	205	1,603	15	-	425	441	6	7	27	4
Conn.	823	1,215	5,142	61	-	3,253	3,427	-	-	N	N
MID. ATLANTIC	14,243	16,197	34,718	200	42	28,667	35,765	259	390	191	166
Upstate N.Y.	1,855	1,972	N	138	15	5,520	7,569	203	199	64	44
N.Y. City	7,855	8,416	15,878	13	-	8,618	14,388	1	1	9	5
N.J.	2,905	3,858	4,161	49	5	3,971	3,468	-	153	12	24
Pa.	1,628	1,951	14,679	N	22	10,558	10,340	55	37	106	93
E.N. CENTRAL	4,076	4,419	68,204	523	352	47,674	65,581	373	277	221	288
Ohio	871	878	14,831	154	94	10,727	20,367	32	13	87	127
Ind.	498	467	8,553	78	48	5,568	7,521	8	4	40	70
Ill.	1,808	1,871	20,055	202	84	14,790	17,152	58	74	9	31
Mich.	685	917	17,382	89	68	12,974	15,046	275	186	65	28
Wis.	214	286	7,383	N	58	3,615	5,495	-	-	20	32
W.N. CENTRAL	1,221	1,393	22,661	527	326	10,238	16,560	108	75	42	68
Minn.	226	302	2,702	238	214	U	2,430	3	4	5	6
Iowa	72	91	3,597	112	81	941	1,335	47	13	10	19
Mo.	626	642	9,920	61	-	6,795	9,447	33	18	9	14
N. Dak.	10	5	2	16	15	-	26	-	5	-	3
S. Dak.	10	17	829	21	-	120	182	-	1	2	3
Nebr.	83	93	2,084	49	4	786	955	7	20	12	16
Kans.	194	243	3,527	30	12	1,596	2,185	18	14	4	7
S. ATLANTIC	13,079	15,197	45,608	122	61	79,587	90,602	218	210	123	155
Del.	232	265	1,148	1	2	1,209	1,874	1	-	11	2
Md.	1,961	2,272	5,736	N	8	12,095	11,072	2	7	26	25
D.C.	1,001	872	N	-	-	3,497	3,925	-	-	8	4
Va.	896	1,151	9,535	N	29	7,480	9,085	15	18	18	21
W. Va.	88	94	1	N	3	455	564	9	44	1	4
N.C.	677	837	-	38	12	15,664	20,321	44	49	10	31
S.C.	667	815	-	9	7	9,007	9,852	27	19	5	30
Ga.	1,867	1,997	9,798	30	-	15,096	16,853	U	15	3	14
Fla.	5,690	6,894	19,390	32	-	15,084	17,056	120	58	41	24
E.S. CENTRAL	1,749	1,916	25,026	63	52	26,771	33,783	465	845	38	51
Ky.	309	243	5,510	13	8	3,504	3,949	27	29	4	10
Tenn.	647	763	10,997	29	41	9,791	11,421	341	814	18	24
Ala.	470	520	6,923	10	3	11,089	13,839	5	2	3	6
Miss.	323	390	U	11	-	2,387	4,574	92	U	13	11
W.S. CENTRAL	5,138	5,126	32,462	63	12	24,763	45,802	401	284	19	21
Ark.	207	223	-	13	3	2,683	4,749	13	6	2	6
La.	1,177	875	6,211	6	4	6,721	9,150	186	155	2	3
Okla.	189	235	6,137	10	1	3,984	4,899	69	45	5	4
Tex.	3,565	3,793	20,114	34	4	11,375	27,004	133	78	10	8
MOUNTAIN	1,533	1,821	13,508	181	91	5,650	7,864	479	401	40	103
Mont.	33	20	-	23	-	25	59	14	14	1	4
Idaho	32	40	1,253	30	13	87	118	93	45	-	2
Wyo.	5	13	476	11	9	32	46	151	167	5	12
Colo.	406	571	-	63	36	1,077	2,371	50	60	7	37
N. Mex.	139	148	3,339	11	-	757	900	64	43	2	4
Ariz.	461	550	5,344	N	22	2,786	3,080	67	41	17	9
Utah	144	113	1,279	28	-	246	216	22	11	3	15
Nev.	313	366	1,817	15	11	640	1,074	18	20	5	20
PACIFIC	8,506	10,446	57,209	276	194	17,029	23,441	352	739	48	94
Wash.	538	779	7,583	93	72	1,673	2,264	49	187	6	20
Oreg.	359	387	4,496	68	37	515	658	6	35	1	-
Calif.	7,440	9,013	43,011	111	75	14,185	19,467	116	448	36	69
Alaska	28	62	1,005	4	2	359	571	3	1	1	-
Hawaii	141	205	1,114	N	8	297	481	178	68	4	5
Guam	4	-	168	N	-	31	89	1	6	2	1
P.R.	1,792	1,951	N	17	U	318	501	83	194	-	-
V.I.	17	30	N	N	U	-	-	-	-	-	-
Amer. Samoa	-	-	-	N	U	-	28	-	-	-	-
C.N.M.I.	1	-	N	N	U	11	51	-	5	-	-

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, last update September 24, 1996.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending October 26, 1996, and October 28, 1995 (43rd Week)

Reporting Area	Lyme Disease		Malaria		Meningococcal Disease		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	11,379	9,419	1,215	1,120	2,649	2,514	9,014	13,774	15,277	17,484	5,616	6,588
NEW ENGLAND	3,555	1,809	51	42	118	119	149	302	344	412	602	1,307
Maine	49	24	7	6	12	10	-	2	21	11	89	46
N.H.	42	22	2	1	7	20	1	1	11	16	51	129
Vt.	15	8	4	1	4	9	-	-	1	2	123	156
Mass.	309	122	21	14	47	40	68	54	174	231	94	381
R.I.	444	297	7	4	13	5	3	3	27	40	35	286
Conn.	2,696	1,336	10	16	35	35	77	242	110	112	210	309
MID. ATLANTIC	6,779	6,186	336	308	239	309	351	696	2,704	3,562	1,204	1,685
Upstate N.Y.	3,509	3,186	74	58	73	84	62	74	347	423	902	1,000
N.Y. City	256	383	175	168	32	47	106	310	1,315	1,995	-	-
N.J.	1,393	1,568	59	60	55	71	77	139	602	638	109	295
Pa.	1,621	1,049	28	22	79	107	106	173	440	506	193	390
E.N. CENTRAL	68	399	110	142	362	350	1,294	2,392	1,652	1,632	87	93
Ohio	42	25	13	11	133	98	480	769	246	223	11	12
Ind.	23	16	13	17	54	49	174	286	148	151	8	14
Ill.	3	17	35	71	98	90	355	908	857	853	23	15
Mich.	-	5	36	22	39	66	142	252	309	330	31	37
Wis.	U	336	13	21	38	47	143	177	92	75	14	15
W.N. CENTRAL	139	160	43	24	209	158	297	638	386	487	447	323
Minn.	59	80	19	4	25	26	51	37	88	118	25	25
Iowa	20	12	3	3	41	29	17	40	53	54	207	112
Mo.	23	44	9	8	88	59	196	523	161	189	17	29
N. Dak.	1	-	1	1	3	1	-	-	6	3	58	25
S. Dak.	-	-	-	2	10	6	-	-	17	21	105	86
Nebr.	5	5	3	3	19	15	11	12	13	20	5	5
Kans.	31	19	8	3	23	22	22	26	48	82	30	41
S. ATLANTIC	583	594	257	222	538	432	3,157	3,431	2,918	3,075	2,344	1,853
Del.	78	45	3	1	2	6	36	14	20	49	62	81
Md.	345	379	70	59	65	36	549	401	245	327	529	373
D.C.	3	3	7	16	10	7	115	95	110	88	9	11
Va.	46	50	41	50	51	57	331	507	234	255	514	373
W. Va.	11	22	5	4	12	8	3	10	50	60	88	103
N.C.	62	64	27	15	67	71	916	950	424	370	602	414
S.C.	6	16	12	1	52	54	322	497	290	271	79	111
Ga.	1	10	26	31	123	90	562	646	528	590	248	242
Fla.	31	5	66	45	156	103	323	311	1,017	1,065	213	145
E.S. CENTRAL	57	63	28	24	193	176	2,053	2,809	1,048	1,193	183	251
Ky.	15	13	3	3	26	40	125	154	192	261	36	26
Tenn.	19	28	12	10	51	68	689	745	320	359	75	86
Ala.	6	7	6	8	69	36	468	538	346	342	69	130
Miss.	17	15	7	3	47	32	771	1,372	190	231	3	9
W.S. CENTRAL	102	96	38	48	296	296	1,190	2,777	1,864	2,578	324	551
Ark.	23	7	-	2	33	30	124	433	162	195	21	42
La.	2	7	6	5	53	43	438	865	59	262	15	40
Okla.	20	40	-	1	32	34	151	159	139	326	27	28
Tex.	57	42	32	40	178	189	477	1,320	1,504	1,795	261	441
MOUNTAIN	7	12	52	55	152	180	112	185	506	550	135	165
Mont.	-	-	7	3	5	2	-	4	14	10	20	42
Idaho	1	-	-	1	22	10	4	-	7	12	-	3
Wyo.	2	3	7	-	3	8	2	1	6	4	27	25
Colo.	-	-	22	24	33	45	23	96	73	68	41	9
N. Mex.	1	1	2	6	24	33	1	6	67	66	6	6
Ariz.	-	1	6	10	38	52	67	43	199	264	30	54
Utah	1	1	4	6	15	15	2	4	39	37	4	15
Nev.	2	6	4	5	12	15	13	31	101	89	7	11
PACIFIC	89	100	300	255	542	494	411	544	3,855	3,995	290	360
Wash.	14	10	20	21	90	80	6	13	219	230	6	14
Oreg.	14	17	18	17	93	92	11	19	134	109	1	2
Calif.	60	73	251	204	346	307	393	510	3,288	3,437	275	337
Alaska	-	-	3	3	8	11	-	2	59	63	8	7
Hawaii	1	-	8	10	5	4	1	-	155	156	-	-
Guam	-	-	-	1	1	2	3	8	35	92	-	-
P.R.	-	-	-	1	4	23	112	243	63	162	43	36
V.I.	-	-	-	2	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	4	-	-
C.N.M.I.	-	-	-	1	-	-	1	9	-	31	-	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending October 26, 1996, and October 28, 1995 (43rd Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (viral), by type				Measles (Rubeola)			
			A		B		Indigenous		Imported†	
	Cum. 1996*	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	1996	Cum. 1996	1996	Cum. 1996
UNITED STATES	847	939	23,132	24,779	7,989	8,207	1	407	-	46
NEW ENGLAND	25	37	328	257	162	186	-	11	-	4
Maine	-	3	16	27	2	7	-	-	-	-
N.H.	9	9	18	11	15	19	-	-	-	-
Vt.	1	2	9	5	10	5	-	1	-	1
Mass.	13	12	166	106	57	71	-	9	-	3
R.I.	2	5	19	31	9	8	-	-	-	-
Conn.	-	6	100	77	69	76	U	1	U	-
MID. ATLANTIC	152	137	1,554	1,530	1,218	1,157	-	23	-	5
Upstate N.Y.	45	36	379	387	289	313	-	-	-	-
N.Y. City	32	34	492	724	497	349	-	9	-	3
N.J.	48	20	278	229	205	316	U	3	U	-
Pa.	27	47	405	190	227	179	-	11	-	2
E.N. CENTRAL	141	162	1,906	2,731	816	920	-	6	-	7
Ohio	81	83	645	1,535	109	91	-	2	-	3
Ind.	14	20	289	157	132	186	-	-	-	-
Ill.	32	40	460	558	210	242	-	2	-	1
Mich.	8	17	362	312	309	334	-	-	-	3
Wis.	6	2	150	169	56	67	-	2	-	-
W.N. CENTRAL	40	69	2,080	1,628	371	534	-	20	-	2
Minn.	25	38	111	164	54	49	-	16	-	2
Iowa	5	3	310	70	66	42	-	-	-	-
Mo.	7	21	991	1,142	179	367	-	3	-	-
N. Dak.	-	-	112	22	2	4	-	-	-	-
S. Dak.	1	1	41	56	5	2	-	-	-	-
Nebr.	1	3	190	46	36	29	-	-	-	-
Kans.	1	3	325	128	29	41	-	1	-	-
S. ATLANTIC	163	186	1,186	968	1,242	1,084	-	5	-	9
Del.	2	-	15	9	7	8	-	1	-	-
Md.	52	60	206	185	249	214	-	-	-	2
D.C.	6	-	35	24	29	20	U	1	U	-
Va.	9	27	146	174	118	95	-	-	-	3
W. Va.	9	7	13	22	24	48	-	-	-	-
N.C.	23	26	141	92	277	253	-	3	-	1
S.C.	4	2	46	41	81	44	-	-	-	-
Ga.	37	59	150	52	32	62	-	-	-	2
Fla.	21	5	434	369	425	340	-	-	-	1
E.S. CENTRAL	26	10	1,076	1,694	680	710	-	2	-	-
Ky.	4	4	38	41	52	60	-	-	-	-
Tenn.	12	-	702	1,410	391	555	-	2	-	-
Ala.	9	5	161	73	59	95	-	-	-	-
Miss.	1	1	175	170	178	U	U	-	U	-
W.S. CENTRAL	34	57	4,930	3,706	1,103	1,153	-	26	-	2
Ark.	-	6	425	489	66	57	-	-	-	-
La.	4	1	162	114	124	172	-	-	-	-
Okla.	27	21	2,029	981	59	144	-	-	-	-
Tex.	3	29	2,314	2,122	854	780	-	26	-	2
MOUNTAIN	87	100	3,703	3,441	953	701	1	153	-	5
Mont.	-	-	98	132	12	19	U	-	U	-
Idaho	1	3	208	282	79	83	-	1	-	-
Wyo.	35	6	29	97	39	25	-	1	-	-
Colo.	13	16	395	439	117	106	-	4	-	3
N. Mex.	10	12	319	709	343	262	1	17	-	-
Ariz.	12	25	1,447	920	212	98	-	8	-	-
Utah	8	10	871	617	82	58	-	117	-	2
Nev.	8	28	336	245	69	50	-	5	-	-
PACIFIC	179	181	6,369	8,824	1,444	1,762	-	161	-	12
Wash.	4	9	560	733	84	166	-	51	-	-
Oreg.	23	24	718	2,353	92	103	-	4	-	-
Calif.	148	143	4,992	5,544	1,242	1,469	-	36	-	5
Alaska	2	1	36	42	14	11	-	63	-	-
Hawaii	2	4	63	152	12	13	-	7	-	7
Guam	-	-	2	7	-	4	U	-	U	-
P.R.	1	3	108	87	349	517	-	7	-	-
V.I.	-	-	-	8	-	15	U	-	U	-
Amer. Samoa	-	-	-	6	-	-	U	-	U	-
C.N.M.I.	10	11	1	24	5	22	U	-	U	-

N: Not notifiable U: Unavailable -: no reported cases

*Of 200 cases among children aged <5 years, serotype was reported for 45 and of those, 14 were type b.

†For imported measles, cases include only those resulting from importation from other countries.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending October 26, 1996, and October 28, 1995 (43rd Week)

Reporting Area	Measles (Rubeola), cont'd. Total		Mumps			Pertussis			Rubella		
	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995
UNITED STATES	453	282	8	527	707	180	4,451	3,643	2	201	109
NEW ENGLAND	15	9	-	2	11	41	926	493	-	27	46
Maine	-	-	-	-	4	-	20	40	-	-	-
N.H.	-	-	-	-	1	12	102	44	-	-	1
Vt.	2	-	-	-	-	3	106	67	-	2	-
Mass.	12	2	-	2	2	26	641	312	-	21	7
R.I.	-	5	-	-	1	-	30	4	-	-	-
Conn.	1	2	U	-	3	U	27	26	U	4	38
MID. ATLANTIC	28	12	2	76	102	14	399	318	-	11	13
Upstate N.Y.	-	1	2	24	24	14	236	161	-	4	3
N.Y. City	12	5	-	16	16	-	29	47	-	4	8
N.J.	3	6	U	2	17	U	16	17	U	2	2
Pa.	13	-	-	34	45	-	118	93	-	1	-
E.N. CENTRAL	13	15	2	90	136	62	492	457	-	3	3
Ohio	5	2	-	39	46	40	233	127	-	-	-
Ind.	-	-	1	9	9	18	73	49	-	-	-
Ill.	3	2	1	20	38	2	143	92	-	1	-
Mich.	3	5	-	21	43	2	38	62	-	2	3
Wis.	2	6	-	1	-	-	5	127	-	-	-
W.N. CENTRAL	22	2	-	17	40	1	319	240	-	-	-
Minn.	18	-	-	5	4	-	251	125	-	-	-
Iowa	-	-	-	2	9	-	17	10	-	-	-
Mo.	3	1	-	7	22	1	34	55	-	-	-
N. Dak.	-	-	-	2	1	-	1	8	-	-	-
S. Dak.	-	-	-	-	-	-	4	11	-	-	-
Nebr.	-	-	-	-	4	-	8	10	-	-	-
Kans.	1	1	-	1	-	-	16	21	-	-	-
S. ATLANTIC	14	14	-	90	102	10	508	305	-	93	9
Del.	1	-	-	-	-	-	13	10	-	-	-
Md.	2	1	-	25	30	6	178	39	-	-	1
D.C.	1	-	U	1	-	U	2	6	U	2	-
Va.	3	-	-	12	21	-	71	19	-	2	-
W. Va.	-	-	-	-	-	-	2	-	-	-	-
N.C.	4	-	-	20	16	-	100	110	-	78	1
S.C.	-	-	-	6	10	1	38	25	-	1	-
Ga.	2	2	-	3	8	-	17	22	-	-	-
Fla.	1	11	-	23	17	3	87	74	-	10	7
E.S. CENTRAL	2	-	-	19	11	1	133	267	-	2	1
Ky.	-	-	-	-	-	-	84	24	-	-	-
Tenn.	2	-	-	1	4	1	17	206	-	-	1
Ala.	-	-	-	3	4	-	23	35	-	2	-
Miss.	-	-	U	15	3	U	9	2	N	N	N
W.S. CENTRAL	28	32	1	30	47	7	109	275	-	3	7
Ark.	-	2	-	2	7	-	12	36	-	-	-
La.	-	18	-	13	12	-	9	18	-	1	-
Okla.	-	-	-	-	-	1	11	31	-	-	-
Tex.	28	12	1	15	28	6	77	190	-	2	7
MOUNTAIN	158	68	-	21	30	8	361	534	-	7	4
Mont.	-	-	U	-	1	U	28	3	U	-	-
Idaho	1	-	-	-	3	-	102	99	-	3	-
Wyo.	1	-	-	-	-	1	6	1	-	-	-
Colo.	7	26	-	3	2	2	93	85	-	2	-
N. Mex.	17	31	N	N	N	5	59	107	-	-	-
Ariz.	8	10	-	1	2	-	27	153	-	1	3
Utah	119	-	-	2	11	-	19	27	-	-	1
Nev.	5	1	-	15	11	-	27	59	-	1	-
PACIFIC	173	130	3	182	228	36	1,204	754	2	55	26
Wash.	51	19	-	19	12	10	541	266	-	2	1
Oreg.	4	1	-	-	-	-	33	50	-	1	-
Calif.	41	108	3	133	195	26	599	389	2	49	20
Alaska	63	-	-	3	12	-	4	1	-	-	-
Hawaii	14	2	-	27	9	-	27	48	-	3	5
Guam	-	-	U	5	4	U	1	2	U	-	1
P.R.	7	3	-	1	2	-	1	1	-	-	-
V.I.	-	-	U	-	3	U	-	-	U	-	-
Amer. Samoa	-	-	U	-	-	U	-	-	U	-	-
C.N.M.I.	-	-	U	-	1	U	-	-	U	-	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 121 U.S. cities,* week ending October 26, 1996 (43rd Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	579	440	87	31	12	9	31
Boston, Mass.	181	130	34	9	5	3	6
Bridgeport, Conn.	41	28	10	2	1	-	2
Cambridge, Mass.	19	16	3	-	-	-	-
Fall River, Mass.	21	15	5	-	1	-	-
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	23	20	2	1	-	-	4
Lynn, Mass.	U	U	U	U	U	U	U
New Bedford, Mass.	34	29	4	1	-	-	4
New Haven, Conn.	47	34	5	4	1	3	2
Providence, R.I.	59	47	10	1	-	1	2
Somerville, Mass.	4	4	-	-	-	-	1
Springfield, Mass.	44	29	4	8	2	1	-
Waterbury, Conn.	39	35	1	2	1	-	5
Worcester, Mass.	67	53	9	3	1	1	5
MID. ATLANTIC	2,341	1,581	427	226	43	62	121
Albany, N.Y.	46	27	12	2	2	3	4
Allentown, Pa.	15	12	3	-	-	-	-
Buffalo, N.Y.	110	79	15	12	1	3	11
Camden, N.J.	27	18	5	3	-	1	1
Elizabeth, N.J.	13	11	-	2	-	-	-
Erie, Pa.§	56	48	6	2	-	-	3
Jersey City, N.J.	44	27	10	5	-	2	1
New York City, N.Y.	1,213	803	248	115	25	22	46
Newark, N.J.	77	30	19	15	1	11	6
Paterson, N.J.	19	12	3	3	-	1	-
Philadelphia, Pa.	300	181	57	39	12	10	16
Pittsburgh, Pa.§	73	55	12	3	-	3	4
Reading, Pa.	9	8	-	1	-	-	1
Rochester, N.Y.	132	103	14	12	1	2	11
Schenectady, N.Y.	14	13	-	1	-	-	2
Scranton, Pa.§	47	38	7	2	-	-	2
Syracuse, N.Y.	89	73	11	2	1	2	9
Trenton, N.J.	31	22	4	4	-	1	3
Utica, N.Y.	26	21	1	3	-	1	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,281	1,515	445	203	50	67	145
Akron, Ohio	55	36	12	3	3	1	-
Canton, Ohio	34	29	5	-	-	-	3
Chicago, Ill.	494	280	112	70	16	15	36
Cincinnati, Ohio	114	77	26	7	-	4	11
Cleveland, Ohio	158	102	44	8	2	2	2
Columbus, Ohio	215	150	35	16	7	7	14
Dayton, Ohio	124	94	17	9	2	2	7
Detroit, Mich.	203	118	54	20	4	7	7
Evansville, Ind.	49	36	10	3	-	-	2
Fort Wayne, Ind.	71	49	11	9	-	2	6
Gary, Ind.	9	4	2	-	3	-	-
Grand Rapids, Mich.	61	49	6	2	2	2	5
Indianapolis, Ind.	216	145	37	20	5	9	19
Madison, Wis.	56	42	10	2	1	1	4
Milwaukee, Wis.	138	103	14	10	1	10	9
Peoria, Ill.	43	25	4	10	3	1	2
Rockford, Ill.	44	29	10	4	-	1	6
South Bend, Ind.	44	31	10	2	-	1	2
Toledo, Ohio	90	66	17	5	1	1	8
Youngstown, Ohio	63	50	9	3	-	1	2
W.N. CENTRAL	703	514	104	36	18	18	33
Des Moines, Iowa	39	30	7	-	2	-	5
Duluth, Minn.	29	20	7	2	-	-	1
Kansas City, Kans.	31	22	4	2	3	-	-
Kansas City, Mo.	91	58	8	6	4	2	3
Lincoln, Nebr.	33	27	5	-	-	1	5
Minneapolis, Minn.	157	119	21	11	4	2	14
Omaha, Nebr.	85	64	15	2	1	3	3
St. Louis, Mo.	114	83	18	6	-	7	-
St. Paul, Minn.	40	36	4	-	-	-	2
Wichita, Kans.	84	55	15	7	4	3	-

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,275	776	274	155	50	18	60
Atlanta, Ga.	178	97	46	27	8	-	2
Baltimore, Md.	258	153	56	36	7	5	17
Charlotte, N.C.	105	71	18	9	5	1	6
Jacksonville, Fla.	97	64	17	14	-	2	5
Miami, Fla.	95	55	26	8	5	1	1
Norfolk, Va.	50	36	6	2	3	3	6
Richmond, Va.	93	57	19	13	3	1	5
Savannah, Ga.	48	33	7	7	1	-	2
St. Petersburg, Fla.	47	37	4	4	2	-	4
Tampa, Fla.	149	96	33	13	6	1	8
Washington, D.C.	140	72	37	19	8	4	4
Wilmington, Del.	15	5	5	3	2	-	-
E.S. CENTRAL	761	504	165	64	22	5	49
Birmingham, Ala.	125	74	32	11	7	-	6
Chattanooga, Tenn.	66	47	12	4	2	1	2
Knoxville, Tenn.	73	47	13	9	4	-	8
Lexington, Ky.	82	49	26	3	2	2	6
Memphis, Tenn.	143	102	28	12	1	-	10
Mobile, Ala.	105	62	26	11	5	1	2
Montgomery, Ala.	41	32	7	2	-	-	4
Nashville, Tenn.	126	91	21	12	1	1	11
W.S. CENTRAL	1,449	930	282	161	39	37	77
Austin, Tex.	83	58	13	9	3	-	3
Baton Rouge, La.	70	44	15	6	1	4	3
Corpus Christi, Tex.	56	42	10	2	1	1	2
Dallas, Tex.	159	97	35	18	5	4	3
El Paso, Tex.	68	37	17	9	1	4	4
Ft. Worth, Tex.	99	68	15	11	3	2	2
Houston, Tex.	354	214	77	42	14	7	33
Little Rock, Ark.	58	35	14	7	-	2	4
New Orleans, La.	125	67	26	25	3	4	-
San Antonio, Tex.	186	132	26	16	7	5	15
Shreveport, La.	85	56	17	9	1	2	5
Tulsa, Okla.	106	80	17	7	-	2	3
MOUNTAIN	846	552	164	80	28	22	54
Albuquerque, N.M.	100	68	15	10	3	4	3
Colo. Springs, Colo.	42	25	11	2	2	2	1
Denver, Colo.	104	71	16	13	2	2	15
Las Vegas, Nev.	162	90	44	22	5	1	6
Ogden, Utah	26	19	5	1	1	-	1
Phoenix, Ariz.	151	95	27	17	4	8	10
Pueblo, Colo.	25	23	2	-	-	-	2
Salt Lake City, Utah	109	76	20	5	4	4	7
Tucson, Ariz.	127	85	24	10	7	1	9
PACIFIC	1,412	1,012	225	127	28	20	105
Berkeley, Calif.	12	10	2	-	-	-	2
Fresno, Calif.	72	45	15	9	2	1	3
Glendale, Calif.	5	5	-	-	-	-	1
Honolulu, Hawaii	86	67	15	-	3	1	8
Long Beach, Calif.	82	62	12	6	1	1	16
Los Angeles, Calif.	224	155	32	30	5	2	10
Pasadena, Calif.	21	14	4	3	-	-	-
Portland, Oreg.	152	113	26	8	3	2	3
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	131	91	22	13	4	1	11
San Francisco, Calif.	127	91	17	17	1	1	19
San Jose, Calif.	228	165	37	16	5	5	21
Santa Cruz, Calif.	15	13	1	1	-	-	-
Seattle, Wash.	130	79	29	17	2	3	-
Spokane, Wash.	52	42	5	1	1	3	5
Tacoma, Wash.	75	60	8	6	1	-	6
TOTAL	11,647¶	7,824	2,173	1,083	290	258	675

U: Unavailable -: no reported cases

*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.

Contributors to the Production of the *MMWR* (Weekly)

Weekly Notifiable Disease Morbidity Data and 121 Cities Mortality Data

Denise Koo, M.D., M.P.H.
Deborah A. Adams
Timothy M. Copeland
Patsy A. Hall
Carol M. Knowles
Sarah H. Landis
Myra A. Montalbano

Desktop Publishing and Graphics Support

Jolene W. Altman
Morie M. Higgins
Peter M. Jenkins

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format and on a paid subscription basis for paper copy. To receive an electronic copy on Friday of each week, send an e-mail message to *lists@list.cdc.gov*. The body content should read *subscribe mmwr-toc*. Electronic copy also is available from CDC's World-Wide Web server at *http://www.cdc.gov/* or from CDC's file transfer protocol server at *ftp.cdc.gov*. To subscribe for paper copy, contact Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 512-1800.

Data in the weekly *MMWR* 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 following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to: Editor, *MMWR* Series, Mailstop C-08, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone (404) 332-4555.

☆**U.S. Government Printing Office: 1997-532-228/47035 Region IV**