CENTERS FOR DISEASE CONTROL

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

November 16, 1990 / Vol. 39 / No. 45

Current Trends

Regional Variation in Diabetes Mellitus Prevalence – United States, 1988 and 1989

To plan and implement public health programs for diabetes mellitus (DM), state health officials need to be able to measure accurately the magnitude of the disease burden of DM. Because only national and regional estimates of the prevalence of DM have been available (*1*), in 1988, CDC's Behavioral Risk Factor Surveillance System (BRFSS) was used to determine the state-specific prevalence of self-reported diabetes in 36 states and the District of Columbia; in 1989, two additional states participated. This report summarizes the BRFSS findings.

The BRFSS is a monthly random-digit–dialed telephone interview of adults ≥18 years of age (*2*). To decrease random variation in the state-specific prevalence estimates, survey data from 1988 and 1989 were combined. The sample results were weighted to reflect the age, sex, and racial/ethnic distribution of adults in each state. To allow comparisons among states and within demographic categories, state-specific and combined results were age-standardized to the 1980 U.S. civilian population. SESUDAAN, a computer software program for analyzing complex sample survey data, was used to calculate standard errors for the prevalence estimates (*3*).

Respondents were asked if they had ever been told by a doctor that they had diabetes. The prevalence of self-reported diabetes ranged from 1.6% among persons aged 18–34 years to 12.5% among persons aged 65–74 years (Table 1). The age-adjusted prevalence among women was 22% higher than that among men; 91% higher among blacks than among whites; 61% higher among Hispanics than among whites; and 43% higher among other races than among whites. The prevalence of age-adjusted diabetes varied threefold among participating states, from 2.8% (95% confidence interval [CI] = 2.1–3.4) in Montana to 8.7% (95% CI = 7.6–9.9) in the District of Columbia (Table 2). The median level of age-adjusted prevalence of diabetes among the states was 5.0%. With the exception of Hawaii, states with the highest prevalence were east of the Mississippi River (Figure 1).

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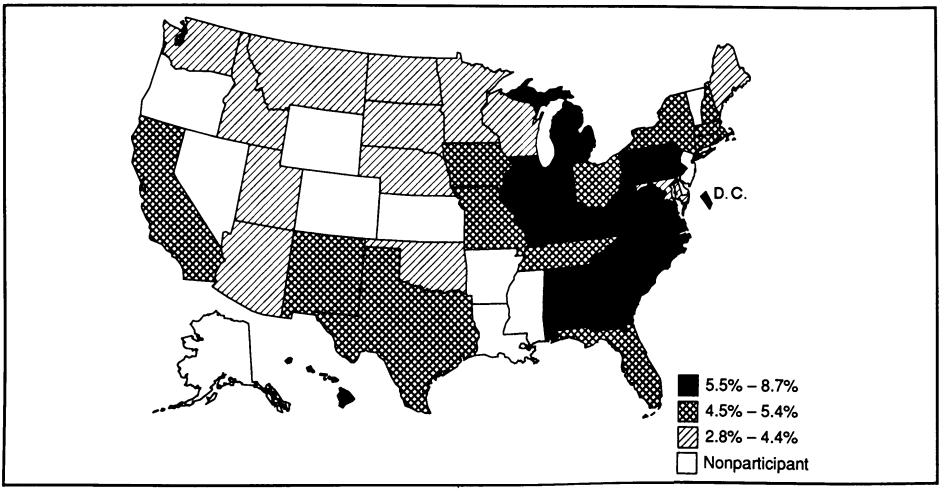
TABLE 1. Prevalence of self-reported diabetes in 38* states and the District of Columbia, by demographic category — Behavioral Risk Factor Surveillance System, 1988 and 1989

Category	Prevalence (%)	95% CI†
Age (yrs)		
18–34	1.6	1.4– 1.7
35–54	4.0	3.7– 4.3
55–64	10.3	9.6–11.2
65–74	12.5	11.6–13.3
≥75	11.9	10.6–13.1
Sex		
Men	4.6	4.3– 4.9
Women	5.6	5.4– 5.9
Race/Ethnicity		
White	4.6	4.4– 4.8
Black	8.8	7.9– 9.7
Hispanic	7.4	6.0– 8.8
Other	6.6	4.9– 8.4
Total	**5.1**	**4.9– 5.3**

*Thirty-six states participated in 1988; 38 states participated in 1989.
†Confidence interval.

FIGURE 1. Age-adjusted prevalence of self-reported diabetes, by state — United States, 1988 and 1989*†



*Data from CDC's Behavioral Risk Factor Surveillance System.
†Prevalence may not match that in Table 2 because of rounding.

DM Prevalence — Continued

TABLE 2. Age-adjusted prevalence of self-reported diabetes mellitus, by state — selected states, 1988 and 1989*

State	No. persons surveyed	Rank	Prevalence (%)	95% CI†
Alabama	3,304	4	(6.2)	5.3–7.1
Arizona	2,651	33	(3.9)	3.1–4.6
California	4,838	15	(5.2)	4.4–6.0
Connecticut	2,521	26	(4.5)	3.7–5.4
District of Columbia	2,630	1	(8.7)	7.6–9.9
Florida	3,160	22	(4.8)	4.0–5.5
Georgia	3,101	7	(5.9)	4.6–7.2
Hawaii	3,715	3	(6.4)	5.5–7.4
Idaho	3,535	30	(4.0)	3.4–4.7
Illinois	3,557	11	(5.6)	4.8–6.4
Indiana	4,320	10	(5.9)	5.1–6.6
Iowa	2,066	23	(4.7)	3.8–5.7
Kentucky§	3,589	13	(5.5)	4.8–6.3
Maine	2,524	29	(4.2)	3.4–5.1
Maryland	2,809	37	(3.6)	2.9–4.3
Massachusetts	2,641	17	(5.1)	4.1–6.0
Michigan	3,685	2	(7.1)	6.1–8.1
Minnesota	6,832	38	(3.2)	2.7–3.6
Missouri	2,844	19	(5.0)	4.1–5.8
Montana	2,367	39	(2.8)	2.1–3.4
Nebraska	2,798	32	(3.9)	3.2–4.6
New Hampshire	2,552	24	(4.6)	3.7–5.5
New Mexico	2,312	21	(4.8)	3.8–5.8
New York	2,491	16	(5.1)	4.2–6.0
North Carolina	3,475	12	(5.6)	4.7–6.4
North Dakota	3,237	28	(4.3)	3.6–5.0
Ohio§	2,892	14	(5.5)	4.6–6.4
Oklahoma	2,148	36	(3.6)	2.8–4.3
Pennsylvania¶	1,811	8	(5.9)	4.7–7.1
Rhode Island	3,546	25	(4.6)	3.9–5.3
South Carolina	3,687	5	(6.1)	5.2–7.0
South Dakota	2,368	35	(3.8)	3.0–4.6
Tennessee	4,779	18	(5.0)	4.4–5.7
Texas	2,657	20	(5.0)	4.0–5.9
Utah	3,214	34	(3.8)	3.1–4.5
Virginia¶	1,427	9	(5.9)	4.5–7.2
Washington	2,751	27	(4.4)	3.6–5.2
West Virginia	3,440	6	(6.1)	5.3–6.8
Wisconsin	2,544	31	(4.0)	3.2–4.8
Total	**120,818**		**(5.1)**	**4.9–5.3**
Median			**(5.0)**	

*Data from CDC's Behavioral Risk Factor Surveillance System.
†Confidence interval.
§Prevalence may not match that in Figure 1 because of rounding.
¶Results based on data from 1989 only.

DM Prevalence — Continued

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Editorial Note: For 1988 and 1989, the BRFSS data indicate that age-adjusted prevalence of self-reported diabetes varied substantially by state. Although state-specific differences in diabetes incidence and/or mortality may account for the variability in disease prevalence, data are not available at the state level to examine these associations.

These prevalence estimates are based on self-reports of diabetes. Results of the second National Health and Nutrition Examination Survey, conducted in 1976–1980, indicated that the prevalence of diabetes, when based on an oral glucose tolerance test, is approximately double the prevalence estimate based on self-reports of diabetes (*4*). If the degree of underdiagnosis and/or underreporting of diabetes is constant across states, the differences in BRFSS prevalence estimates among states should be accurate.

The overall age-standardized prevalence of 5.1% for self-reported diabetes from the 1988 and 1989 BRFSS is higher than the overall prevalence of 3.7% reported in the 1987 National Health Interview Survey (NHIS). This difference may reflect, in part, differences in survey methodology. The BRFSS asks for information about each respondent only and is an aggregation of state probability samples; the NHIS is a survey of a national probability sample of households that asks respondents to provide information about health conditions of each household member.

Diabetes-control programs in 27 state and territorial health departments are designed to reduce the morbidity associated with diabetic complications by rapidly translating diabetes research into medical-care practices. The programs focus on four diabetic complications: diabetic eye disease, cardiovascular disease, lower-extremity amputations, and adverse pregnancy outcomes. Although the BRFSS can be used to monitor diabetes prevalence, data for monitoring trends in diabetic complications are generally not available at the state level. To address this need, the Division of Diabetes Translation (DDT) in CDC's Center for Chronic Disease Prevention and Health Promotion has entered into cooperative agreements with state health agencies in Colorado, Minnesota, and North Carolina to explore methods for developing state-based surveillance systems for diabetes and its complications.

The DDT has recently provided "synthetic" state-specific estimates of the disease burden (e.g., hospitalizations for lower-extremity amputations) from diabetes (*5*). For each state, tabulations include the estimated number of persons with diabetes, deaths caused by diabetes, and hospitalizations and deaths for diabetes-related conditions (e.g., cardiovascular disease, ketoacidosis, lower-extremity amputation, end-stage renal disease, and blindness). Copies of *Diabetes Fact Sheets 1990* are available from the DDT, Mailstop F48, Center for Chronic Disease Prevention and Health Promotion, CDC, 1600 Clifton Road, NE, Atlanta, GA 30333.

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Prevalence and Incidence of Diabetes Mellitus — United States, 1980–1987

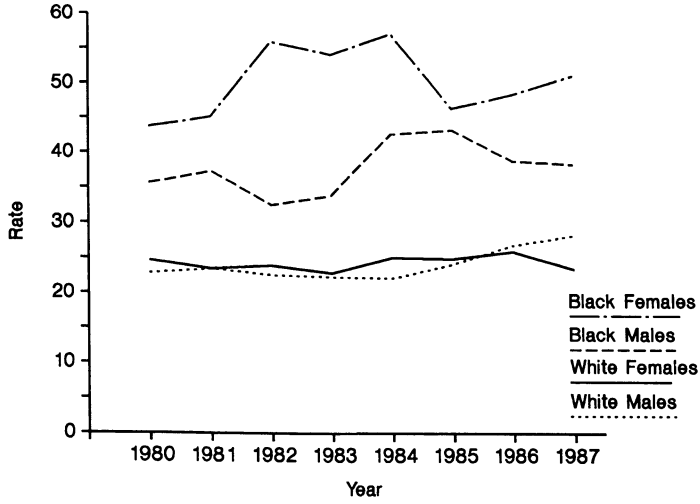
From 1980 through 1987, the number of persons in the United States who self-reported* having diabetes mellitus (DM) increased by more than 17%—from an estimated 5.8 million to an estimated 6.8 million persons. These estimates of DM were derived from data from the National Health Interview Survey (NHIS), an annual household survey of approximately 120,000 U.S. residents. This report summarizes data on DM incidence and prevalence from the NHIS for 1980–1987.

From 1980 through 1987, the number of white males with DM increased by 33% (from 2.1 million to 2.8 million). The number of white females with DM remained about the same (2.7 million). During this period, the number of black males with DM increased by 16% (from 350,000 to 406,000), and black females, 24% (from 538,000 to 669,000). A doubling of cases among persons aged ≥75 years (from 71,000 to 146,000) contributed to the large increase among black females.

From 1980 through 1987, the annual prevalence of DM (age-standardized to the 1980 U.S. resident population) increased 9%, from 25.4 to 27.6 per 1000 U.S. residents. Each year, prevalence was higher for blacks than for whites (Figure 1). In

*Participants were asked, "During the past 12 months, did anyone in the family have diabetes?"

FIGURE 1. Age-standardized prevalence* of diabetes mellitus, by race, sex, and year — United States, 1980–1987†



*Per 1000 persons.
†Data from CDC's National Health Interview Survey for 1980–1987.

Diabetes Mellitus — Continued

1987, prevalence for black females was more than twice that for white females (50.9 compared with 23.4 per 1000 persons); for black males, the prevalence was about one third higher than for white males.

Diabetes incidence was calculated by counting only persons who reported having been told during the 12 months preceding the survey that they have diabetes. Three-year moving averages† were used to improve precision of the incidence estimates. The annual number of incident cases increased from 541,000 in 1980 to 731,000 in 1987. For females, the number of cases increased from 327,000 to 445,000; for white females, however, the annual number decreased from 279,000 to 264,000. Similarly, the number of incident cases for males increased from 215,000 to 286,000; for white males, the number decreased from 203,000 to 192,000. Incidence was not calculated separately for other races because of small sample sizes.

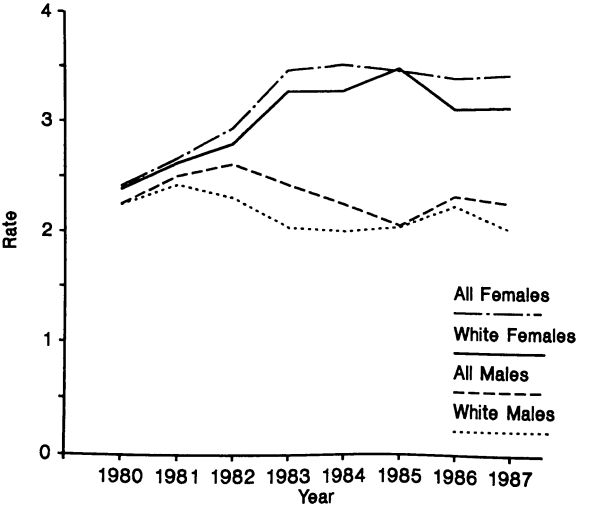
The overall age-standardized incidence per 1000 persons was 2.4 in 1980, 3.0 in 1983, and 2.9 in 1987. Incidence was consistently higher for females than for males (Figure 2). For females, annual incidence per 1000 residents steadily increased, from 2.4 in 1980 to 3.4 in 1987; for women aged ≥65 years, the annual incidence increased from 6.3 to 10.6 during the same period. In most years, the rate for white females was lower than that for all females. For all males, the rate was relatively stable (an average of 2.3 per 1000 persons per year); for white males, however, the rate declined from 2.3 in 1980 to 2.0 in 1987.

Reported by: Div of Diabetes Translation, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Persons with DM are at increased risk for lower-extremity amputations, cardiovascular disease, diabetic eye disease, and end-stage renal disease (*1*).

†Incorporates data from the previous and the following year to calculate the value for a given year.

FIGURE 2. Age-standardized incidence* of diabetes mellitus, by race, sex, and year — United States, 1980–1987†



*Per 1000 persons.

†Data from CDC's National Health Interview Survey for 1980–1987.

Diabetes Mellitus — Continued

For 1987, the annual health-care costs (direct costs from medical care and lost productivity) associated with diabetes were an estimated $20.4 billion (*2*). Based on the increase in the number of persons with DM, the substantial economic and health-care burden associated with DM is expected to increase.

The estimates in this report are based only on self-reported diabetes; they do not include persons with either undiagnosed DM or impaired glucose tolerance, all of whom are at increased risk for macrovascular complications (e.g., coronary heart disease) (*3*). Since approximately half of all prevalent cases may have been undiagnosed (*4*), the total number of persons with DM in 1987 may have been almost 14 million. As the population grows and the proportion of elderly persons increases (*5*), the number of persons with DM can be expected to increase.

Minority groups (e.g., blacks, Hispanics, and Native Americans) are at increased risk for DM and its complications (*6*). For both males and females, the incidence of DM for all races combined was higher than that for whites; thus, the higher rate for all races combined reflects the higher incidence of DM among races other than white, who constitute about 15% of the U.S. population. Although race-specific estimates of disease incidence assist in surveillance, planning, and evaluation, national data usually do not provide adequate designation of persons of Hispanic or Native American descent. Furthermore, the sample sizes in most national surveys are too small to provide stable estimates for minority groups.

The year 2000 national health objectives target overall DM prevalence at $\leq$25 per 1000 persons and incidence at $\leq$2.5 per 1000 persons (*7*). For blacks, the year 2000 objective for DM prevalence is 32 per 1000 persons. Achieving these objectives will require development and implementation of strategies for the primary prevention of noninsulin-dependent DM (NIDDM), the predominant form of the disease. About half of NIDDM cases are thought to result from obesity. Although measures to reduce overweight and prevent obesity, particularly among high-risk groups, may prevent or delay the onset of NIDDM, this strategy has not been proven by clinical trials. The targeted 15% decrease in DM incidence from the 1987 baseline level assumes that obesity-control efforts will be directed toward persons at high risk for DM (*7*).

To monitor progress toward meeting these objectives, as well as those for diabetic complications, CDC has established an ongoing national diabetes surveillance system (*8*) based on data from the NHIS, the National Hospital Discharge Survey, the Health Care Financing Administration, and state vital statistics. These data provide national estimates of the prevalence and incidence of DM and of the rates of diabetic complications. Copies of *Diabetes Surveillance, 1980–1987*, which presents these estimates, are available from the Division of Diabetes Translation, Mailstop F48, Center for Chronic Disease Prevention and Health Promotion, CDC, 1600 Clifton Road, NE, Atlanta, GA 30333.

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Diabetes Mellitus — Continued

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Progress in Chronic Disease Prevention

Preventing Blindness From Diabetic Eye Disease — Texas

Diabetic eye disease (DED)* is a leading cause of new cases of blindness in the United States among persons aged 20–74 years (*1*). Because timely detection and treatment can substantially reduce the incidence of blindness caused by DED (*2,3*), the identification of persons at high risk for DED is important to ensure that they receive annual eye evaluations, education, and, if appropriate, follow-up care and treatment. This report describes a program to prevent blindness from DED in two areas of southern Texas.

In 1986, the Texas Diabetes Control Program (TDCP) implemented DED screening projects as part of comprehensive diabetes-control activities in the Harris County Hospital District (Houston) and the Laredo-Webb County Health Department. Clients of these projects received medical care through local health departments or community health-care centers; many had no access to routine eye care.

From October 1986 through September 1988, the two programs screened 2741 persons with diabetes for DED. Priority for screening was given to persons with high-risk characteristics (e.g., persons with Type II diabetes, persons aged ≥18 years with Type I diabetes, and persons who had not had an eye examination in the preceding year). In the Harris County project, persons at high risk were screened by ophthalmologists and specially trained primary-care physicians at eight community health centers. In the Laredo-Webb County project, persons at high risk were referred to two local ophthalmologists for screening.

Of the 2741 persons screened for DED, 87% were members of minority groups (47% Hispanic; 39% black; and 2% Native American, Alaskan Native, Asian, or Pacific Islander). Eighty-six percent were ≥45 years of age, and 72% were female. Of those screened, 146 (5.3%) were recommended for immediate treatment of DED (Table 1). Ten patients had two different treatable conditions (total treatable conditions: 156). Identified conditions requiring immediate treatment were retinopathy (2.2% of total screened), glaucoma (1.9%), and cataracts (1.6%) (Table 1). Hispanics and blacks had the highest prevalence of eye disease requiring immediate treatment. Women had slightly higher rates than men; ≥90% of the patients recommended for immediate treatment were aged ≥45 years.

The TDCP tracked persons recommended for immediate treatment and assisted them in obtaining private and public third-party reimbursement. Three months after

*Diseases with an etiology of diabetes, including diabetic retinopathy, cataracts, and glaucoma.

Diabetic Eye Disease — Continued

the screening period, 108 (74%) of those recommended for immediate treatment had initiated therapy, and 16 (11%) had treatment scheduled. Barriers to treatment initiation among the remaining 22 persons included cost (eight persons), treatment refusal by client (five), loss of client to follow-up (two), physician postponement of treatment (one), and other/unknown (six).

Reported by: S Baker, PhD, Dept of Community Medicine, Baylor Coll of Medicine, Houston; J Santos, Laredo-Webb County Dept of Health, Laredo; C Laramey, Chronic Disease Prevention Program, Texas Dept of Health. Div of Diabetes Translation, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Barriers to optimal care for preventing complications of diabetes include cost, availability, and accessibility of health care; inadequate knowledge among health-care practitioners about the existence and/or appropriate timing of effective therapies; and lack of awareness by patients of the need for and benefit of specific treatments, including self-care practices. This report describes efforts of the TDCP to reduce barriers to optimal eye care in targeted communities through patient and professional education and by coordination and enhancement of eye-care practices among local, state, and federal health agencies. These efforts have increased the accessibility of eye care to persons with diabetes at high risk for blindness.

In addition to Texas, diabetes-control programs (DCPs), which are supported by CDC, have been established in 25 other states and one territory. The primary mission of DCPs is to reduce the gap between optimal medical care and current care practices, particularly in medically underserved communities. Since September 1986, CDC has provided resources and technical assistance to DCPs to implement DED interventions specifically designed to improve current eye-care practices.

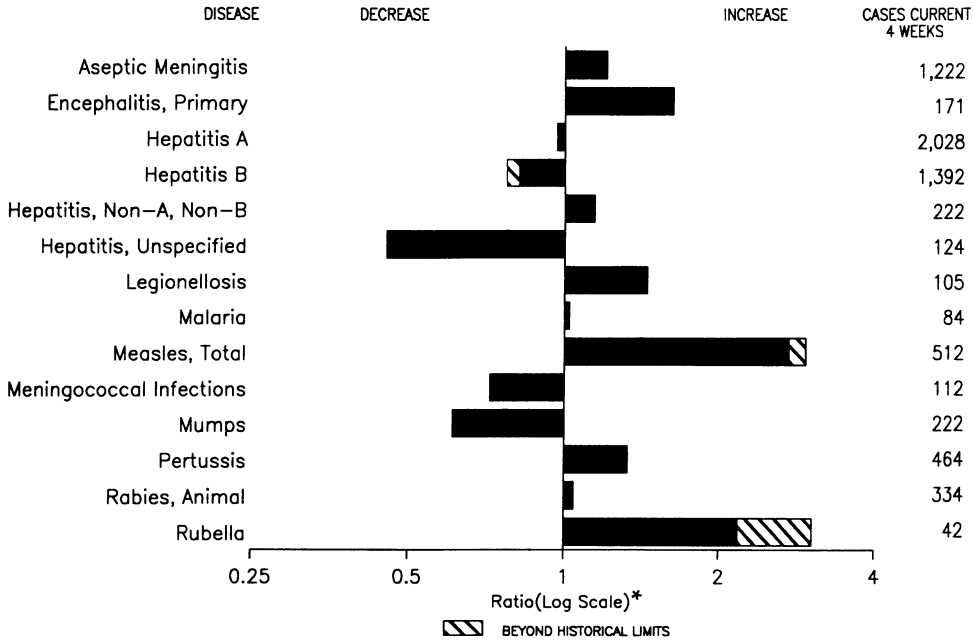
(Continued on page 819)

TABLE 1. Prevalence* of persons with diabetic eye disease recommended for immediate treatment, by type of eye disease and demographic characteristics — Texas Diabetes Control Program, October 1986–September 1988

Characteristic	Eye disease			
	Retinopathy	Glaucoma	Cataracts	Total†
Race/Ethnicity				
White	1.4	1.7	0.3	3.7
Black	1.3	2.8	1.5	5.5
Hispanic	3.0	1.3	2.0	5.6
Other	2.0	0.0	2.0	2.0
Sex				
Male	2.8	1.2	1.3	5.0
Female	1.9	2.2	1.7	5.4
Age (yrs)				
<30	0.0	0.0	0.0	0.0
30–44	1.6	0.3	0.3	1.9
45–64	2.6	1.9	1.7	5.7
≥65	1.9	2.7	1.9	6.3
Total	**2.2**	**1.9**	**1.6**	**5.3**

*Per 100 program participants.
†Includes an unlisted eye disease.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending November 10, 1990, with historical data — United States



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

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending November 10, 1990 (45th Week)

	Cum. 1990		Cum. 1990
AIDS	36,414	Plague	2
Anthrax	-	Poliomyelitis, Paralytic*	-
Botulism: Foodborne	18	Psittacosis	97
Infant	54	Rabies, human	1
Other	6	Syphilis: civilian	42,122
Brucellosis	71	military	209
Cholera	3	Syphilis, congenital, age < 1 year	685
Congenital rubella syndrome	3	Tetanus	52
Diphtheria	4	Toxic shock syndrome	255
Encephalitis, post-infectious	83	Trichinosis	23
Gonorrhea: civilian	574,399	Tuberculosis	20,037
military	7,483	Tularemia	122
Leprosy	180	Typhoid fever	442
Leptospirosis	47	Typhus fever, tickborne (RMSF)	612
Measles: imported	1,075		
indigenous	23,081		

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

TABLE II. Cases of specified notifiable diseases, United States, weeks ending November 10, 1990, and November 11, 1989 (45th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	36,414	9,474	939	83	574,399	607,979	24,935	17,381	2,229	1,465	1,125	180
NEW ENGLAND	1,271	356	24	-	15,941	17,879	546	920	84	63	65	10
Maine	52	17	3	-	175	233	10	24	4	1	5	-
N.H.	54	36	-	-	142	159	7	40	6	3	4	-
Vt.	14	35	2	-	46	60	5	42	6	-	6	-
Mass.	685	115	11	-	6,790	6,976	359	568	58	57	41	9
R.I.	79	112	1	-	1,054	1,287	49	41	-	2	9	1
Conn.	387	41	7	-	7,734	9,164	116	205	10	-	-	-
MID. ATLANTIC	10,669	888	44	7	76,243	86,631	3,319	2,214	203	87	341	20
Upstate N.Y.	1,329	481	36	1	12,662	14,543	1,032	614	73	25	129	1
N.Y. City	6,142	132	3	3	30,620	35,149	487	553	25	43	83	14
N.J.	2,132	-	1	-	12,724	13,010	411	524	39	-	48	4
Pa.	1,066	275	4	3	20,237	23,929	1,389	523	66	19	81	1
E.N. CENTRAL	2,554	2,803	247	14	110,694	113,853	1,999	2,011	366	82	286	2
Ohio	574	545	82	4	33,223	30,462	209	352	76	12	93	-
Ind.	238	300	6	8	9,952	8,424	161	350	18	15	45	-
Ill.	1,056	604	78	2	34,666	36,897	959	375	42	17	15	1
Mich.	483	1,000	66	-	26,090	28,768	340	564	35	38	90	1
Wis.	203	354	15	-	6,763	9,302	330	370	195	-	43	-
W.N. CENTRAL	909	498	105	2	29,763	28,692	1,524	759	120	30	64	1
Minn.	152	99	66	1	3,592	3,205	214	97	25	-	7	-
Iowa	43	102	7	-	2,032	2,449	249	50	12	4	4	-
Mo.	536	188	7	1	18,091	17,493	427	478	56	20	30	-
N. Dak.	2	19	3	-	76	125	20	5	2	1	1	-
S. Dak.	6	9	4	-	254	242	311	7	4	-	2	-
Nebr.	50	39	7	-	1,610	1,360	98	31	4	-	12	1
Kans.	120	42	11	-	4,108	3,818	205	91	17	5	8	-
S. ATLANTIC	7,761	1,690	266	28	162,662	162,534	2,827	3,453	293	215	164	6
Del.	83	43	5	-	2,787	2,814	100	86	8	2	11	-
Md.	863	240	23	1	20,719	19,530	918	485	51	14	54	3
D.C.	590	9	-	-	11,549	9,359	15	39	4	-	2	-
Va.	650	306	48	1	15,672	14,163	275	223	38	147	13	-
W. Va.	58	51	57	-	1,155	1,268	19	75	4	9	4	-
N.C.	496	207	37	-	24,388	24,563	605	938	113	-	28	1
S.C.	311	21	1	-	13,010	14,525	40	550	15	9	23	-
Ga.	1,092	283	5	1	35,104	31,616	327	434	11	7	19	-
Fla.	3,618	530	90	25	38,278	44,696	528	623	49	27	10	2
E.S. CENTRAL	909	645	60	2	50,421	48,787	352	1,364	191	8	54	-
Ky.	162	177	25	-	5,082	4,768	83	460	54	6	22	-
Tenn.	300	125	26	2	15,784	16,454	170	735	117	-	19	-
Ala.	194	235	9	-	17,104	15,554	97	150	17	1	13	-
Miss.	253	108	-	-	12,451	12,011	2	19	3	1	-	-
W.S. CENTRAL	3,833	744	53	7	62,136	63,449	2,956	1,905	105	278	47	35
Ark.	181	24	5	-	7,461	7,378	475	74	11	23	9	-
La.	634	84	10	-	11,376	13,670	182	298	5	7	13	1
Okla.	170	77	3	6	5,331	5,493	516	148	26	25	16	-
Tex.	2,848	559	35	1	37,968	36,908	1,783	1,385	63	223	9	34
MOUNTAIN	957	359	23	2	11,601	12,793	4,001	1,272	193	118	43	3
Mont.	11	6	-	-	187	165	158	63	7	4	5	-
Idaho	23	8	-	-	127	153	82	75	8	-	3	-
Wyo.	2	7	1	-	131	93	56	15	5	1	2	-
Colo.	309	91	5	-	3,133	2,760	284	164	45	43	9	-
N. Mex.	88	20	1	-	1,068	1,144	829	172	12	10	3	-
Ariz.	274	157	9	-	4,456	5,241	1,787	424	67	43	11	2
Utah	95	27	3	-	330	402	520	90	27	7	3	-
Nev.	155	43	4	2	2,169	2,835	285	269	22	10	7	1
PACIFIC	7,551	1,491	117	21	54,938	73,361	7,411	3,483	674	584	61	103
Wash.	524	-	6	1	4,430	5,850	1,203	520	110	31	13	6
Oreg.	276	-	-	-	2,233	2,707	735	361	51	8	-	-
Calif.	6,598	1,294	103	19	46,936	63,520	5,223	2,480	496	533	46	74
Alaska	24	107	7	-	921	826	180	55	7	5	-	-
Hawaii	129	90	1	1	418	458	70	67	10	7	2	23
Guam	2	2	-	-	197	145	12	4	-	11	-	1
P.R.	1,529	62	7	-	653	951	151	525	11	26	-	6
V.I.	11	-	-	-	357	613	1	11	-	-	-	-
Amer. Samoa	-	1	-	31	63	53	34	-	-	-	-	10
C.N.M.I.	-	-	-	-	157	80	10	9	-	15	-	4

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

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending November 10, 1990, and November 11, 1989 (45th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	1990	Cum. 1990	Cum. 1989
UNITED STATES	1,034	47	23,081	1	1,075	14,401	2,075	57	4,491	79	3,637	3,327	3	1,042	347
NEW ENGLAND	86	-	265	-	26	343	166	-	41	16	378	339	-	8	6
Maine	2	-	28	-	2	1	14	-	-	2	18	25	-	1	-
N.H.	4	-	-	-	9	15	13	-	10	2	57	16	-	1	4
Vt.	7	-	-	-	1	3	13	-	2	-	7	6	-	-	1
Mass.	47	-	23	-	7	68	76	-	12	12	265	263	-	2	1
R.I.	8	-	27	-	3	41	13	-	5	-	7	11	-	1	-
Conn.	18	-	187	-	4	215	37	-	12	-	24	18	-	3	-
MID. ATLANTIC	224	4	1,305	-	157	991	327	11	318	22	494	268	-	11	36
Upstate N.Y.	45	-	204	-	112	152	122	1	126	1	311	109	-	10	14
N.Y. City	80	-	437	-	21	121	46	-	-	-	-	11	-	-	15
N.J.	74	-	284	-	15	454	66	-	89	-	21	34	-	-	7
Pa.	25	4	380	-	9	264	93	10	103	21	162	114	-	1	-
E.N. CENTRAL	60	-	3,368	-	143	5,157	273	3	477	14	865	487	-	162	29
Ohio	9	-	551	-	3	1,551	83	-	91	12	228	68	-	131	3
Ind.	3	-	417	-	1	103	29	-	20	-	124	31	-	-	-
Ill.	22	-	1,309	-	10	2,777	75	-	168	-	298	162	-	19	22
Mich.	17	-	348	-	125	334	64	3	151	1	81	43	-	9	1
Wis.	9	-	743	-	4	392	22	-	47	1	134	183	-	3	3
W.N. CENTRAL	19	1	890	-	17	749	67	1	146	1	206	214	-	48	6
Minn.	6	1	424	-	6	24	14	-	15	-	51	59	-	42	-
Iowa	2	-	25	-	1	13	1	-	21	-	18	15	-	4	1
Mo.	10	-	99	-	1	459	28	-	56	1	106	124	-	-	4
N. Dak.	-	-	-	-	-	-	2	-	-	-	2	3	-	1	-
S. Dak.	-	-	15	-	8	-	2	-	-	-	1	2	-	-	-
Nebr.	-	-	97	-	1	113	5	1	8	-	7	7	-	1	-
Kans.	1	-	230	-	-	140	15	-	46	-	21	4	-	-	1
S. ATLANTIC	207	-	927	-	375	715	370	15	1,847	4	298	337	-	20	10
Del.	6	-	8	-	3	40	3	-	6	-	8	1	-	-	-
Md.	56	-	194	-	18	102	42	11	1,049	1	61	73	-	2	2
D.C.	10	-	16	-	7	40	11	-	36	-	14	2	-	1	-
Va.	50	-	84	-	2	22	50	1	102	-	24	33	-	1	-
W. Va.	2	-	6	-	-	53	15	-	44	-	29	32	-	-	-
N.C.	15	-	15	-	15	190	58	-	294	-	71	69	-	-	1
S.C.	3	-	4	-	-	15	25	1	62	-	5	-	-	-	-
Ga.	16	-	99	-	259	18	63	-	89	3	38	48	-	1	-
Fla.	49	-	501	-	71	235	103	2	165	-	48	79	-	15	7
E.S. CENTRAL	20	-	194	-	4	239	125	2	96	4	152	201	-	4	5
Ky.	2	-	41	-	1	44	37	-	-	-	-	1	-	1	-
Tenn.	9	-	104	-	-	145	54	-	52	4	76	116	-	3	4
Ala.	9	-	23	-	2	50	30	1	17	-	68	73	-	-	1
Miss.	-	-	26	-	1	-	4	1	27	-	8	11	-	-	-
W.S. CENTRAL	63	20	4,201	1	95	3,287	146	9	655	1	185	363	-	66	50
Ark.	4	-	18	-	31	22	18	1	139	-	21	29	-	3	-
La.	6	-	10	-	-	85	33	2	111	1	32	26	-	-	5
Okla.	9	-	174	-	-	110	17	1	102	-	52	58	-	1	1
Tex.	44	20	3,999	1§	64	3,070	78	5	303	-	80	250	-	62	44
MOUNTAIN	24	19	861	-	100	416	71	2	329	1	289	630	1	110	36
Mont.	1	-	-	-	1	13	11	-	1	-	35	39	1	15	1
Idaho	5	-	16	-	10	7	6	-	143	-	45	72	-	49	32
Wyo.	1	-	-	-	15	-	-	-	2	-	-	-	-	-	2
Colo.	3	-	91	-	47	97	22	1	25	1	103	86	-	4	-
N. Mex.	4	-	81	-	12	31	12	N	N	-	18	32	-	-	-
Ariz.	9	-	300	-	12	145	6	1	130	-	53	380	-	32	-
Utah	-	19	146	-	-	114	7	-	10	-	31	20	-	2	-
Nev.	1	-	227	-	3	9	7	-	18	-	4	1	-	8	1
PACIFIC	331	3	11,070	-	158	2,504	530	14	582	16	770	488	2	613	169
Wash.	25	-	202	-	69	54	66	3	52	1	199	182	-	-	-
Oreg.	15	-	169	-	44	62	58	N	N	-	91	18	-	74	4
Calif.	285	-	10,588	-	39	2,358	390	11	501	14	381	262	2	523	143
Alaska	2	-	78	-	2	1	11	-	4	-	7	1	-	-	-
Hawaii	4	3	33	-	4	32	5	-	25	1	92	25	-	16	22
Guam	3	U	-	U	1	4	2	1	5	U	1	1	U	-	-
P.R.	3	8	1,665	-	-	560	13	-	8	-	12	4	-	-	8
V.I.	-	U	21	U	3	4	-	U	12	U	-	-	U	-	-
Amer. Samoa	35	U	501	U	-	-	-	U	37	U	-	-	U	-	-
C.N.M.I.	-	10	14	U	-	-	-	U	8	U	4	-	U	-	-

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

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

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending November 10, 1990, and November 11, 1989 (45th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	42,122	38,017	255	20,037	18,401	122	442	612	3,785
NEW ENGLAND	1,469	1,489	23	487	547	3	30	19	6
Maine	7	13	7	18	25	-	-	-	-
N.H.	41	13	1	3	24	-	-	1	3
Vt.	2	1	1	8	8	-	-	-	-
Mass.	606	438	12	249	300	3	29	16	-
R.I.	20	28	1	62	55	-	-	-	-
Conn.	793	996	1	147	135	-	1	2	3
MID. ATLANTIC	8,053	8,030	28	4,785	3,806	2	98	30	942
Upstate N.Y.	786	813	11	327	298	1	18	15	173
N.Y. City	3,774	3,858	5	2,986	2,193	-	54	2	-
N.J.	1,326	1,232	-	821	715	1	22	8	327
Pa.	2,167	2,127	12	651	600	-	4	5	442
E.N. CENTRAL	3,097	1,680	55	1,960	1,868	2	30	44	157
Ohio	468	150	19	346	322	1	6	33	11
Ind.	92	54	1	191	183	1	1	2	14
Ill.	1,300	745	8	977	866	-	14	2	27
Mich.	930	583	27	374	387	-	8	7	49
Wis.	307	148	-	72	110	-	1	-	56
W.N. CENTRAL	447	285	30	528	480	41	5	53	584
Minn.	81	51	5	104	97	-	-	-	216
Iowa	69	31	8	55	44	-	1	2	17
Mo.	238	148	8	267	227	31	3	35	28
N. Dak.	1	3	-	18	14	-	-	-	84
S. Dak.	2	1	-	13	26	4	-	2	191
Nebr.	14	23	3	15	18	3	-	1	4
Kans.	42	28	6	56	54	3	1	13	44
S. ATLANTIC	13,411	13,330	16	3,687	3,857	5	71	268	1,029
Del.	164	188	1	33	38	-	-	1	26
Md.	1,046	722	1	304	336	-	32	18	392
D.C.	981	697	1	140	148	-	-	2	-
Va.	790	499	3	328	314	2	7	22	182
W. Va.	15	15	-	66	64	-	1	1	36
N.C.	1,503	964	4	509	494	2	4	163	8
S.C.	928	728	2	413	437	1	1	41	120
Ga.	3,404	3,273	1	609	618	-	4	18	185
Fla.	4,580	6,244	3	1,285	1,408	-	22	2	80
E.S. CENTRAL	3,959	2,619	14	1,454	1,415	8	4	75	162
Ky.	95	51	3	326	345	2	1	11	46
Tenn.	1,667	1,134	8	417	421	6	1	54	27
Ala.	1,199	797	3	427	401	-	2	10	86
Miss.	998	637	-	284	248	-	-	-	3
W.S. CENTRAL	7,337	5,324	12	2,399	2,234	40	17	99	411
Ark.	498	329	-	291	246	31	-	21	32
La.	2,293	1,353	1	251	292	-	1	3	31
Okla.	215	108	8	180	191	8	2	69	120
Tex.	4,331	3,534	3	1,677	1,505	1	14	6	228
MOUNTAIN	758	579	29	469	453	17	20	13	205
Mont.	-	1	-	22	16	-	-	4	45
Idaho	6	1	2	12	24	-	-	1	7
Wyo.	2	6	2	5	-	5	-	1	48
Colo.	44	60	7	27	41	5	-	2	23
N. Mex.	40	26	3	94	81	4	-	1	12
Ariz.	540	287	9	216	215	-	18	1	35
Utah	17	15	5	37	37	3	-	3	16
Nev.	109	183	1	56	39	-	2	-	19
PACIFIC	3,591	4,681	48	4,268	3,741	4	167	11	289
Wash.	282	405	4	240	200	2	21	2	-
Oreg.	122	209	2	114	120	-	4	1	1
Calif.	3,161	4,048	41	3,701	3,211	-	132	3	266
Alaska	16	6	-	50	51	2	-	-	22
Hawaii	10	13	1	163	159	-	10	5	-
Guam	2	4	-	39	75	-	-	-	-
P.R.	296	472	-	102	257	-	2	-	40
V.I.	12	8	-	4	4	-	-	-	-
Amer. Samoa	-	-	-	12	7	-	1	-	-
C.N.M.I.	3	8	-	43	23	-	4	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending November 10, 1990 (45th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	698	493	117	61	17	10	57
Boston, Mass.	181	112	36	18	6	9	23
Bridgeport, Conn.	65	41	14	9	-	1	8
Cambridge, Mass.	22	16	5	1	-	-	1
Fall River, Mass.	35	24	5	4	2	-	-
Hartford, Conn.	51	36	8	5	2	-	1
Lowell, Mass.	28	22	3	1	2	-	1
Lynn, Mass.	16	14	1	1	-	-	1
New Bedford, Mass.	35	28	5	1	1	-	1
New Haven, Conn.	56	44	6	4	2	-	2
Providence, R.I.	58	41	11	6	-	-	5
Somerville, Mass.	5	4	1	-	-	-	-
Springfield, Mass.	46	36	7	3	-	-	2
Waterbury, Conn.	43	37	2	3	1	-	11
Worcester, Mass.	57	38	13	5	1	-	1
MID. ATLANTIC	2,463	1,560	488	289	66	60	115
Albany, N.Y.	50	40	5	1	2	2	2
Allentown, Pa.	16	13	2	1	-	-	1
Buffalo, N.Y.	100	53	21	18	4	4	3
Camden, N.J.	42	19	11	5	3	4	-
Elizabeth, N.J.	24	17	5	2	-	-	-
Erie, Pa.†	39	30	7	2	-	-	7
Jersey City, N.J.	58	41	6	6	2	3	2
N.Y. City, N.Y.§	1,336	840	256	179	35	26	52
Newark, N.J.	49	18	19	9	2	1	7
Paterson, N.J.	39	22	6	6	4	1	2
Philadelphia, Pa.	304	178	76	32	10	8	15
Pittsburgh, Pa.†	55	34	11	5	-	5	3
Reading, Pa.	36	31	5	-	-	-	6
Rochester, N.Y.	110	86	15	7	1	1	6
Schenectady, N.Y.	32	23	5	3	1	-	2
Scranton, Pa.†	27	21	5	1	-	-	2
Syracuse, N.Y.	69	48	10	5	2	4	3
Trenton, N.J.	29	12	11	6	-	-	-
Utica, N.Y.	16	11	4	1	-	-	1
Yonkers, N.Y.	32	23	8	-	-	1	1
E.N. CENTRAL	2,241	1,480	460	167	55	79	100
Akron, Ohio	65	42	14	5	3	1	-
Canton, Ohio	38	31	5	1	1	-	4
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	106	70	23	6	2	5	8
Cleveland, Ohio	148	86	33	14	6	9	3
Columbus, Ohio	170	115	36	14	-	5	8
Dayton, Ohio	101	66	27	6	-	2	8
Detroit, Mich.	267	162	48	31	13	13	11
Evansville, Ind.	49	33	13	2	1	-	-
Fort Wayne, Ind.	60	41	10	4	3	2	3
Gary, Ind.	20	10	4	5	1	-	2
Grand Rapids, Mich.	40	32	5	2	-	1	6
Indianapolis, Ind.	125	71	38	10	3	3	8
Madison, Wis.§	41	30	7	3	-	1	2
Milwaukee, Wis.	137	103	18	5	3	8	6
Peoria, Ill.	46	28	12	2	3	1	2
Rockford, Ill.	54	34	14	1	3	2	4
South Bend, Ind.	42	34	6	2	-	-	1
Toledo, Ohio	99	72	15	7	3	2	5
Youngstown, Ohio	69	58	7	2	-	2	3
W.N. CENTRAL	765	562	103	50	24	26	35
Des Moines, Iowa	55	42	9	3	-	1	2
Duluth, Minn.	28	26	1	-	-	1	2
Kansas City, Kans.	21	18	2	-	-	1	-
Kansas City, Mo.	120	91	14	10	1	4	9
Lincoln, Nebr.	33	23	6	1	3	-	-
Minneapolis, Minn.	179	122	25	17	7	8	13
Omaha, Nebr.	70	49	12	4	4	1	1
St. Louis, Mo.	131	97	15	8	6	5	2
St. Paul, Minn.	68	49	9	4	1	5	6
Wichita, Kans.	60	45	10	3	2	-	-
S. ATLANTIC	1,304	846	248	139	44	25	64
Atlanta, Ga.	139	82	35	16	5	1	4
Baltimore, Md.	174	115	27	23	7	2	15
Charlotte, N.C.	64	37	18	7	-	2	-
Jacksonville, Fla.	116	73	29	7	3	4	9
Miami, Fla.	109	48	35	18	3	5	-
Norfolk, Va.	55	34	8	9	2	2	3
Richmond, Va.	91	54	19	11	6	1	4
Savannah, Ga.	42	28	8	2	2	2	3
St. Petersburg, Fla.	72	63	5	2	1	1	6
Tampa, Fla.	104	81	8	7	5	1	5
Washington, D.C.	300	198	53	35	10	4	15
Wilmington, Del.	38	33	3	2	-	-	-
E.S. CENTRAL	703	457	141	53	20	32	43
Birmingham, Ala.	96	62	15	5	-	14	-
Chattanooga, Tenn.	63	38	11	6	5	3	6
Knoxville, Tenn.	78	44	21	7	2	4	9
Louisville, Ky.	74	53	12	3	3	3	3
Memphis, Tenn.	154	102	36	10	6	-	9
Mobile, Ala.	61	39	14	6	-	2	4
Montgomery, Ala.	48	40	6	2	-	-	4
Nashville, Tenn.	129	79	26	14	4	6	8
W.S. CENTRAL	1,850	1,143	418	176	60	52	63
Austin, Tex.	63	47	8	5	2	1	5
Baton Rouge, La.	59	37	17	4	1	-	3
Corpus Christi, Tex.	37	22	9	3	-	3	1
Dallas, Tex.	170	87	49	20	6	8	6
El Paso, Tex.	62	40	16	4	1	-	-
Fort Worth, Tex	87	49	25	5	6	2	4
Houston, Tex.§	734	436	169	89	24	16	18
Little Rock, Ark.	80	48	22	4	2	4	4
New Orleans, La.	158	96	30	20	5	7	-
San Antonio, Tex.	190	131	39	11	4	5	6
Shreveport, La.	99	71	15	5	5	3	7
Tulsa, Okla.	111	79	19	6	4	3	9
MOUNTAIN	677	418	146	61	27	25	43
Albuquerque, N. Mex.	83	56	15	7	4	1	3
Colo. Springs, Colo.	41	24	6	5	3	3	3
Denver, Colo.	72	41	20	4	2	5	5
Las Vegas, Nev.	141	77	38	18	5	3	12
Ogden, Utah	18	13	4	1	-	-	4
Phoenix, Ariz.	131	80	30	7	7	7	1
Pueblo, Colo.	24	17	3	3	-	1	2
Salt Lake City, Utah	46	18	14	6	3	5	5
Tucson, Ariz.	121	92	16	10	3	-	8
PACIFIC	1,922	1,226	350	222	60	60	120
Berkeley, Calif.	15	9	4	2	-	-	-
Fresno, Calif.	87	56	19	2	5	5	3
Glendale, Calif.§	22	18	3	1	-	-	2
Honolulu, Hawaii	76	51	15	9	-	1	12
Long Beach, Calif.§	77	52	14	8	2	1	12
Los Angeles Calif.§	494	298	95	64	23	10	16
Oakland, Calif.	70	39	13	11	4	3	2
Pasadena, Calif.	38	22	7	6	-	3	5
Portland, Oreg.	127	89	22	6	3	7	6
Sacramento, Calif.	166	116	27	13	4	6	14
San Diego, Calif.	110	66	22	12	5	5	20
San Francisco, Calif.	157	82	30	35	4	6	5
San Jose, Calif.	174	110	30	23	7	4	11
Seattle, Wash.	155	109	19	20	3	4	3
Spokane, Wash.	63	47	12	2	-	2	4
Tacoma, Wash.	91	62	18	8	-	3	5
TOTAL	12,623††	8,185	2,471	1,218	373	369	640

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

**Pneumonia and influenza.

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

††Total includes unknown ages.

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

Diabetic Eye Disease — Continued

References

1. Klein R, Klein BEK. Vision disorders in diabetes. In: National Institutes of Health. Diabetes in America: diabetes data compiled, 1984. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, 1985; NIH publication no. 85-1468.
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National Diabetes Month

November is National Diabetes Month. During this month, nationwide educational activities are planned to increase the public's awareness of this disease. For information, contact the American Diabetes Association, National Center, 1660 Duke St., Alexandria, VA 22314; telephone (800) ADA-DISC.

Topics in Minority Health

Yersinia enterocolitica Infections during the Holidays in Black Families — Georgia

During the 1988–89 winter holidays (i.e., Thanksgiving through New Year's Day), an outbreak of gastroenteritis caused by raw chitterlings (i.e., pork intestines, a traditional winter holiday food in some black families) contaminated with *Yersinia enterocolitica* 0:3 occurred among 15 children in metropolitan Atlanta (*1*). All the children were black, and 11 were enrolled in the Women, Infants, and Children (WIC) Program. Chitterlings had been prepared in 12 of 13 case households and five of 26 control households ($p<0.001$). The infecting organism was primarily transferred from the raw chitterlings to the children through contact with the hands of the foodhandlers. Of child-caretakers enrolled in the Fulton County (the county where most of the cases occurred) WIC Program, nearly half reported household preparation of chitterlings for a Thanksgiving, Christmas, or New Year's Day meal.

To increase community awareness about the potential risk for acquiring yersiniosis from raw chitterlings, particularly among WIC Program participants, a supplementary lesson plan was developed and incorporated from October 1989 to January 1990 into an existing Fulton County WIC Program group nutrition education program. The lesson included a lecture and discussion that informed mothers, grandmothers, and other child-caretakers about 1) the signs and symptoms of yersiniosis in children; 2) the transmission of *Y. enterocolitica* infections to children through direct and indirect contact with contaminated raw chitterlings; 3) the need for special care when handling raw chitterlings because of potential contamination with bacteria; and 4) the prevention of *Y. enterocolitica* infections. Means of preventing illness discussed with each group included 1) careful handwashing by persons cleaning chitterlings before touching a child or anything used by a child (e.g., a toy or bottle) and 2) not allowing children to touch raw chitterlings. All WIC Program enrollees who attended classes or

Yersinia enterocolitica *Infections — Continued*

obtained vouchers during the winter holidays were also given an educational flyer summarizing key points of the lesson plan; enrollees were encouraged to share the flyer with other household foodhandlers (Figure 1).

Reported by: MW Monroe, MS, PE McCray, MS, RJ Finton, MSPH, WR Elsea, MD, Fulton County Health Dept, Atlanta; JD Smith, Georgia Dept of Human Resources. Enteric Diseases Br, Div of Bacterial and Mycotic Diseases, Center for Infectious Diseases, CDC.

Editorial Note: *Y. enterocolitica* causes an enteric infection with fever, diarrhea, and abdominal pain. The recent emergence of *Y. enterocolitica* 0:3 infections in the United States appears to have been accompanied by the establishment of a widely distributed swine reservoir: chitterlings from many regions of the country harbor *Y. enterocolitica* 0:3 (*1*). Because chitterlings are a common traditional food in some black households, particularly during the winter holidays, they probably represent an important vehicle for transmitting infections to children.

Yersiniosis should be suspected in black infants and children with febrile diarrheal illnesses during the winter holidays. During the winter, hospitals with large black pediatric populations should consider routinely culturing all stool specimens on cefsulodin-irgasan-novobiocin (CIN) agar, a medium selective for *Yersinia* (*2*).

Cleaning raw chitterlings is a labor-intensive and time-consuming process that may expose household members to potentially infectious agents. Because the potential for transmission of the agent is strongest from foodhandlers to children, someone other than the foodhandler should care for the children while chitterlings are being prepared.

The efforts of the Fulton County Health Department indicate that educational messages can be incorporated into existing WIC educational programs; these messages can provide information to child-caretakers about transmission and prevention of *Y. enterocolitica* infections due to contaminated chitterlings. Information on the lesson plan and a copy of the educational flyer is available from the WIC Program Office, Fulton County Health Department; telephone (404) 730-1441.

References

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2. Farmer JJ III, Wells JG, Griffin PM, Wachsmuth IK. "*Enterobacteriacea* infections" in diagnostic procedures for bacterial infections. 7th ed. Washington, DC: American Public Health Association, 1987:285–96.

Yersinia enterocolitica *Infections – Continued*

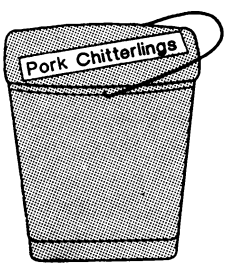
FIGURE 1. Educational flyer used by the Fulton County (Georgia) Health Department

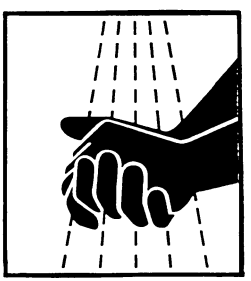
Cleaning chitterlings? Then your baby needs special care!

Germs in raw chitterlings can make your baby sick with diarrhea, fever, and cramps. You cannot see these germs, but when you clean chitterlings, these germs can get on your hands and kitchen utensils. When you touch your baby or prepare food for your baby, the germs on your hands can get on your baby or in your baby's food. This can make your baby sick. So your baby doesn't get sick when you clean chitterlings, we recommend that you:

* Scrub your hands and nails with soap and hot water before touching a baby or child.
* Scrub your hands and nails with soap and hot water before touching something you're going to give to a baby or child (like bottles, pacifiers, or toys).
* Do not let children touch raw pork chitterlings.

Cooked chitterlings are safe to eat! It is germs in raw chitterlings that can make your baby sick.





Perspectives in Disease Prevention and Health Promotion

Summary of the Agency for Toxic Substances and Disease Registry Report to Congress: *The Public Health Implications of Medical Waste*

The Medical Waste Tracking Act of 1988* requires the administrator of the Agency for Toxic Substances and Disease Registry (ATSDR) to prepare a report on the health effects of medical waste†.§ To comply with the act, ATSDR obtained data from professional associations, unions, and environmental, academic, and industrial groups (*1*). The information and comments were collected during an extensive review process that involved an internal ATSDR panel; a federal advisory panel comprising representatives from Public Health Service (PHS) agencies, the Environmental Protection Agency, and the Health Care Financing Administration; an external peer review panel; public comments; and review by PHS and the Department of Health and Human Services. The findings were presented to Congress in *The Public Health Implications of Medical Waste: A Report to Congress* (*2*). This report summarizes the conclusions and recommendations in the ATSDR report.

The report presented estimates of the number of persons injured by sharps¶ in medical waste, the number who may become infected with hepatitis B virus (HBV) and human immunodeficiency virus (HIV) as the result of medical waste-related sharp injuries, and the number who may develop hepatitis B and acquired immunodeficiency syndrome (AIDS) as the result of those injuries. (The number of other infections or infectious diseases related to medical waste could not be estimated because relevant data were not available.) These estimates are upper-limit theoretical estimates because the probability of infection is based on case studies of persons who came in contact with freshly drawn blood or other body fluids—an event more likely to occur during patient care than during medical-waste handling. In addition, some persons may be immune to HBV infection because of prior exposure or immunization (*3*). The estimates did not take into account the rapid decline of viable HIV outside a living host. Because data were not available to determine how many janitorial and laundry workers, laboratory workers, and building engineers are employed at nonhospital facilities that generate medical waste, estimates could not be derived for these workers in these settings.

Based on available estimates, a maximum of <1–4 AIDS cases per year (<0.003%–0.01% of 33,173 AIDS cases in the United States reported to CDC in 1989 [*4*]) occur in health-care workers as a result of contact with medical waste sharps (Table 1). An

*42 U.S.C. 6992 et seq.

†For the ATSDR report, medical waste is defined as cultures and stocks, pathologic wastes, blood and blood products, sharps, animal waste, selected isolation waste, and unused discarded sharps.

§Section 11009 of the act specifies that the report must include 1) a description of the potential for infection or injury from the segregation, handling, storage, treatment, or disposal of medical wastes; 2) an estimate of the number of persons injured or infected annually by sharps in medical waste, and the nature and seriousness of those injuries or infections; 3) an estimate of the number of persons infected annually by other means related to waste segregation, handling, storage, treatment, or disposal, and the nature and seriousness of those infections; and 4) for diseases possibly spread by medical waste, including acquired immunodeficiency syndrome and hepatitis B, an estimate of what percentage of the total number of cases nationally may be traceable to medical wastes.

¶Needles, scalpel blades, and other implements that could cause puncture wounds or other injuries.

Medical Waste – Continued

estimated 80–160 hepatitis B cases per year may occur as a result of contact with medical waste sharps (0.05%–0.1% of 150,000 hepatitis B cases annually in the United States [*5*]).

Other findings included:

- Persons without occupational exposure are not likely to be adversely affected by medical waste generated in the traditional health-care setting.
- Outside the health-care setting, the potential for HBV or HIV infection in the general population following medical waste-related injuries is not likely to be a public health concern; however, needlestick injuries may cause local or systemic secondary infections.
- Increased in-home health care and other sources of nonregulated medical waste increase the likelihood that the general public may come in contact with medical waste.
- The estimated numbers of medical waste-related HIV and HBV infections and cases are of public health concern for selected occupations involved with medical waste (e.g., janitorial and laundry workers, nurses, emergency medical personnel, and refuse workers).
- The approximately 1.2 million U.S. intravenous-drug users (IVDUs) (*6*)—who have high rates of HIV and HBV infection—are a major source of discarded sharps. Although the general public may be at risk for injury and infection following

TABLE 1. Estimated annual range of injuries, theoretical estimated annual number of hepatitis B virus (HBV) and HIV infections, and theoretical estimate of annual number of hepatitis B (HB) and AIDS cases in nonhospital and hospital employees as a result of medical waste-related injuries from sharps – United States, 1990

Employee group	Sharps injury range	HBV infections	HB cases	HIV infections	AIDS cases
Nonhospital					
Physicians*	500–1,700	1–3	<1–2	<1	<1
Registered nurses	17,800–32,500	36–65	18–33	<1	<1
Licensed practical nurses	10,200–15,400	20–31	10–15	<1	<1
Emergency medical personnel*†	12,000	24	12	<1	<1
Dentists*	100–300	<1	<1	<1	<1
Dental assistants*	2,600–3,900	5–8	3–4	<1	<1
Refuse workers*	500–7,300	1–15	<1–7	<1	<1
Hospital					
Physicians/Dentists/ Interns§	100–400	<1	<1	<1	<1
Registered nurses	9,800–17,900	20–36	10–18	<1–1	<1–1
Licensed practical nurses	2,800–4,300	6–9	3–4	<1	<1
Laboratory workers§	800–7,500	2–15	1–8	<1	<1
Janitorial/Laundry workers§	11,700–45,300	23–91	12–45	<1–3	<1–3
Hospital engineers†§	12,200	24	12	<1	<1

*Information for hospital employees in this group was not available.
†Only one annual injury rate was available to calculate the injury range and infections.
§Information for nonhospital employees in this group was not available.

Medical Waste – Continued

contact with these discarded sharps, the potential risk for HIV and HBV infection from IVDU-related waste cannot be estimated.

- The potential for infection resulting from contact with nonsharp medical waste is likely to be substantially less than that related to contact with medical waste sharps, since a portal of entry must exist before contact with nonsharp medical waste for infection or disease to occur.
- Medical waste can be effectively treated by chemical, physical, or biologic means (e.g., chemical decontamination, autoclaving, incineration, irradiation, and sanitary sewage treatment). Medical waste does not contain any greater quantity or different type of microbiologic agents than residential waste. In addition, properly operated sanitary landfills provide microbiologic environments hostile to most pathogenic agents. Therefore, untreated medical waste can be disposed of in sanitary landfills if procedures to prevent worker contact with this waste during handling and disposal operations are strictly followed.

Reported by: Medical Waste Group, Agency for Toxic Substances and Disease Registry.

Editorial Note: In general, medical waste generated in traditional health-care settings is not a health risk for the general public. However, general environmental degradation caused by medical waste poses public health and aesthetic concerns. Because of the special characteristics of medical waste as a solid waste, management systems must be developed for nonregulated medical waste; these systems must be environmentally safe and not jeopardize the public's health.

Of the 158 million tons of municipal solid waste created yearly nationwide, 0.3% is medical waste. The most effective way of reducing medical waste is to reduce the amount of waste created, on a small scale in homes and on a large scale in health-care operations. Simultaneously, the impetus to recycle, reuse, and reclaim products is essential to adequately manage medical waste and other solid wastes.

In 1988, 44 states had medical-waste regulations in place. Among those states, however, there were differences in the types of waste materials designated as medical waste and in their management and disposal. Some states (e.g., Washington) have conducted worker surveys to determine injury rates. Metropolitan areas such as New York City have conducted similar worker surveys of municipal trash collectors and medical waste trash collectors.

Copies of the ATSDR report can be obtained through the National Technical Information Service for $31, plus a $3 handling fee; telephone (703) 487-4650.

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Notices to Readers

National Minority Health Conference

The Agency for Toxic Substances and Disease Registry will sponsor, and CDC will cosponsor, the National Minority Health Conference, "Focus on Environmental Contamination," December 4–6, 1990, in Atlanta. Members of the scientific and environmental communities will address the impact of hazardous substances in the environment on minority populations.

The conference will focus on 1) demographics—special problems in determining exposure of minority populations to hazardous substances in the environment; 2) health perspectives—factors such as nutritional status, lifestyle, and socioeconomic influences that may cause exposure to hazardous substances to affect minority populations disproportionately; and 3) health communication and health education—effectiveness of public health messages for minority populations about preventing exposures to hazardous substances.

Registration information is available from the Conference Coordinator, Equity Associates, Inc., P.O. Box 296, Knoxville, TN 37901; telephone (615) 688-0999.

Electromagnetic Radiation Workshop

On January 30 and 31, 1991, CDC's National Institute for Occupational Safety and Health (NIOSH) will convene a Scientific Workshop in Cincinnati, Ohio, to develop a National Research Strategy on the Health Effects of Electromagnetic Radiation on Workers. The purpose of the workshop is to review current data and new findings regarding electromagnetic radiation that may have relevance for occupational exposures; identify knowledge gaps that might be filled by directed research; and recommend a national research agenda that, if implemented, would close the gaps and permit reliable recommendations for protecting workers. The workshop will emphasize electric and magnetic fields at frequencies up to 1000 Hz, excluding static fields, and carcinogenic, reproductive, and neurologic health effects. The number of attendees will be limited to 250.

Further information and registration forms are available from the Electromagnetic Radiation Workshop, Project Coordinator (R-2), NIOSH, CDC, 4676 Columbia Parkway, Cincinnati, OH 45226; telephone (513) 841-4321.

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: 1991-531-130/22034 Region IV

HHS Publication No. (CDC) 91-8017