CDC
CENTERS FOR DISEASE CONTROL

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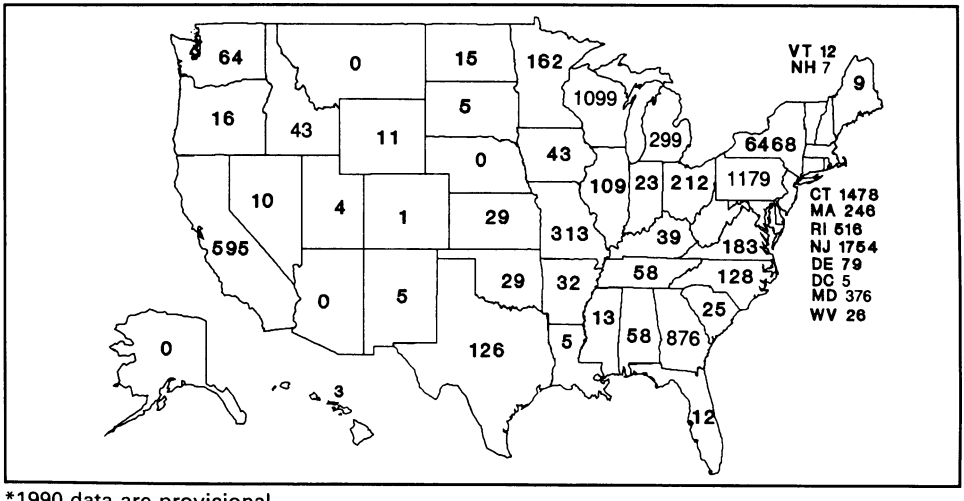
MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Lyme Disease Surveillance — United States, 1989–1990

Surveillance for Lyme disease (LD) was initiated by CDC in 1982 (*1*), and in January 1991, LD became nationally reportable (*2*). Forty-six states reported cases in 1989 and 1990 (Figure 1), but the occurrence in nature of the causative bacterium, *Borrelia burgdorferi*, has not been documented in all of these states. From 1982 through 1989, the annual reported number of cases of LD increased 18-fold (from 497 to 8803, respectively) and from 1986 through 1989, nearly doubled each year (Figure 2). The provisional total of 7997 cases for 1990 suggests a plateau in this trend of rapid annual increase. This report summarizes surveillance of LD during 1990 in Connecticut, Georgia, Michigan, Missouri, New Jersey, and Wisconsin.

FIGURE 1. Reported Lyme disease cases — United States, 1989–1990*



*1990 data are provisional.

Lyme Disease — Continued

Connecticut

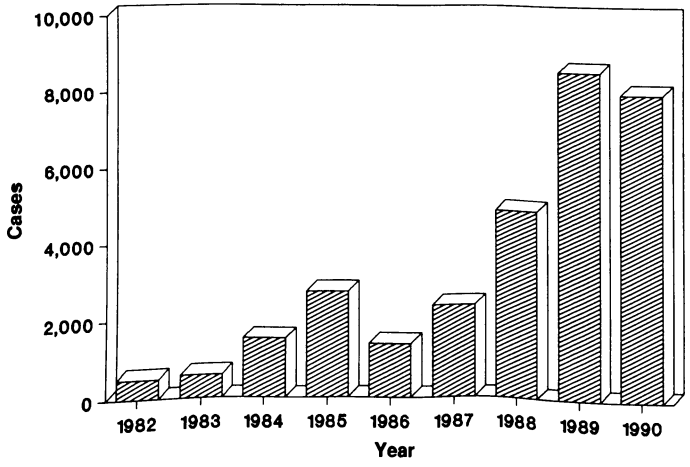
In 1990, the Connecticut Department of Health Services (CDHS) reported 704 cases (22 per 100,000 population) of LD based on the new national surveillance case definition adopted by the Council of State and Territorial Epidemiologists (CSTE) in 1990 (see box) (*2*). This total represented a 9% decrease from the 1989 total of 774 cases, but that total was based on the previous CDC case definition in use in 1989 (*3*). The total number of case reports received by CDHS (i.e., including those reports that did not meet the case definition in use), however, increased slightly (4%) from 1269 in 1989 to 1318 in 1990.

One criterion of the new national surveillance case definition is that the characteristic skin lesion of LD, erythema migrans (EM), must be ≥5 cm in diameter. In 1990, CDHS assessed the impact of this criterion on LD reporting in Connecticut by requesting physicians to record the EM diameter on the CDHS case report form (telephone follow-up was done when information was not provided). Of the 1318 LD total case reports received by CDHS in 1990, 597 (45%) were based on reports of EM alone. Of these 597 reports, the EM diameter was ≥5 cm for 388 (65%), <5 cm for 35 (6%), and unspecified for 174 (29%). Telephone follow-up for the 174 unspecified reports indicated the EM diameter was ≥5 cm for 82 (47%), <5 cm for 35 (20%), and remained unspecified for 57 (33%). If information on EM diameter had not been collected, the surveillance total for 1990 based on the official case definition would have been 831, including the 597 cases with EM alone and 234 cases with late manifestations and a supporting positive serologic test; instead, the CDHS assessment resulted in a 15% (127/831) reduction in cases.

Georgia

The Georgia Department of Human Resources (GDHR) recorded a total of 62 cases of LD from 1982 through 1988, compared with 715 cases in 1989 (*4*). In 1990, however, the total number of reported cases declined to 161. Potential explanations for these shifts are that 1) free serologic testing was offered through the state public health laboratory in 1989 but was discontinued in July 1990; 2) the cut-off for

FIGURE 2. Reported Lyme disease cases — United States, 1982–1990*



*1990 data are provisional.

Lyme Disease — Continued

serologic positivity used by the state public health laboratory (1:128 by immunofluorescent assay) was lower than that used by many laboratories in the country (1:256); 3) in 1989 GDHR and other institutions sponsored a series of state-wide educational seminars on LD, including two programs for physicians; and 4) the new national surveillance case definition was implemented in 1990 (*5*).

Michigan

In Michigan, the number of reported LD cases with onset in 1990 (134) declined 19% when compared with 1989 (165), although the same case definition was used in both years.

Missouri

During 1990, the Missouri Department of Health (MDOH) reported 205 cases of LD, a 90% increase from 1989 (108 cases). MDOH implemented the new national surveillance case definition (*2*) in 1990, but had used the previous CDC case definition in 1989 (*3*).

New Jersey

In 1990, the New Jersey State Department of Health (NJDOH) recorded a 58% increase in the number of confirmed cases of LD compared with 1989 (1074 cases and 680 cases, respectively), although the number of cases with EM increased modestly (680 and 716 cases, respectively). Potential explanations for these increases include: 1) use of a new generic case report form for communicable diseases that had been implemented by NJDOH in June 1990 to facilitate reporting by physicians; and 2) broadening of the case definition from only cases with documented EM to the new national surveillance case definition that includes persons with EM as well as persons with a positive serologic test result and rheumatologic, neurologic, or cardiac signs of LD.

LYME DISEASE*

Clinical Description

A systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The best clinical marker for the disease is the initial skin lesion, erythema migrans, that occurs among 60%–80% of patients.

Clinical Case Definition

- Erythema migrans (≥5 cm in diameter), or
- At least one late manifestation (i.e., musculoskeletal, nervous, or cardiovascular system involvement) and laboratory confirmation of infection.

Laboratory Criteria for Diagnosis

- Isolation of *Borrelia burgdorferi* from clinical specimen, or
- Demonstration of diagnostic levels of IgM and IgG antibodies to the spirochete in serum or cerebrospinal fluid, or
- Significant change in IgM or IgG antibody response to *B. burgdorferi* in paired acute- and convalescent-phase serum samples.

Case Classification

Confirmed: a case that meets one of the clinical case definitions above.

*Adapted from the 1990 Council of State and Territorial Epidemiologists surveillance case definition (*2*).

Lyme Disease — Continued

Wisconsin

In 1990, the Wisconsin Division of Health (WDOH) noted a 54% decrease in total LD case reports when compared with 1989 (909 and 1996, respectively), although the same case definition was used in both years. The number of confirmed cases also declined from 1989 to 1990 (762 and 337 cases, respectively). This is the first decrease in reported LD cases in Wisconsin since 1985. Potential explanations that may account for some of this change include: 1) a decrease in media coverage of LD; 2) a decreased prevalence of *Ixodes dammini*, the tick vector of *B. burgdorferi* in that region, based on anecdotal reports from entomologists to WDOH; and 3) success of educational efforts to prevent tick bites (*6*). In addition, from 1989 through 1990, use of commercial and reference laboratories for LD serology declined (*6*): in 1990, the Wisconsin State Laboratory of Hygiene tested 8309 specimens compared with 17,222 specimens in 1989. This decrease in laboratory use may reflect a true decrease in incidence, changing medical practices, or other factors; the effect on case reporting is unknown.

Reported by: ML Cartter, MD, JL Hadler, MD, State Epidemiologist, Connecticut State Dept of Health Svcs. JD Smith, JA Wilber, MD, State Epidemiologist, Georgia Dept of Human Resources. MG Stobierski, DVM, KR Wilcox, Jr, MD, State Epidemiologist, Michigan Dept of Public Health. HD Donnell, Jr, MD, State Epidemiologist, Missouri Dept of Health. C Genese, KC Spitalny, MD, State Epidemiologist, New Jersey State Dept of Health. JJ Kazmierczak, DVM, JP Davis, MD, State Epidemiologist, Div of Health, Wisconsin Dept of Health and Social Svcs. Bacterial Zoonoses Br, Div of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Different surveillance case definitions for LD have been used throughout the United States since 1982; each definition has incorporated a combination of elements of early and late manifestations of illness, a history of endemic exposure, and a positive serologic test result (*7,8*). On January 1, 1991, LD became nationally reportable in the United States. However, the new standardized surveillance case definition, which had been approved by CSTE (*2*), was used by some states in 1990.

The findings in this report suggest that the factors affecting trends in LD reporting are multiple and complex, and require further definition. For example, in Connecticut, a 1-year assessment that focused on reporting of EM resulted in a 15% decrease in cases that otherwise would have been included in the annual total. The findings in Georgia highlight how heightened physician awareness and laboratory-based surveillance for LD may affect reporting. In Missouri, case reports continued to increase despite the use of the new case definition, possibly reflecting increased awareness and reporting compliance and/or a true increase in incidence. Of note, however, is that *B. burgdorferi*, the etiologic agent of LD, has not been isolated from ticks, vertebrate hosts, or human case-patients in Georgia or Missouri. In New Jersey, use of the new case definition appeared to identify cases with late manifestations of illness. In Michigan and Wisconsin, case reports may have declined as a result of ecologic or other factors unrelated to a change in case criteria.

The new national surveillance case definition was developed to achieve greater specificity in case identification. This effort to exclude non-cases may have also excluded true cases from national totals. The impact of the new case definition can be further assessed after this definition has been implemented uniformly by all states and in use for at least 1 full year.

Lyme Disease — Continued

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International Notes

Shigella dysenteriae Type 1 — Guatemala, 1991

On March 14, 1991, physicians at a hospital in Guatemala City reported to the Institute of Nutrition of Central America and Panama (INCAP) that a 2-year-old boy living in an orphanage in Guatemala City had been hospitalized with dysentery; stool cultures yielded *Shigella dysenteriae* type 1. Another child from the orphanage had recently died from dysentery. During March 18–21, two other young children from the orphanage were diagnosed with *S. dysenteriae* type 1. On March 21, health officials in Rabinal, in the department of Baja Verapaz, reported more than 100 cases of dysentery to the Division of Epidemiology and Disease Control of the Ministry of Health (MOH). This report summarizes the investigation of these outbreaks.

Guatemala City

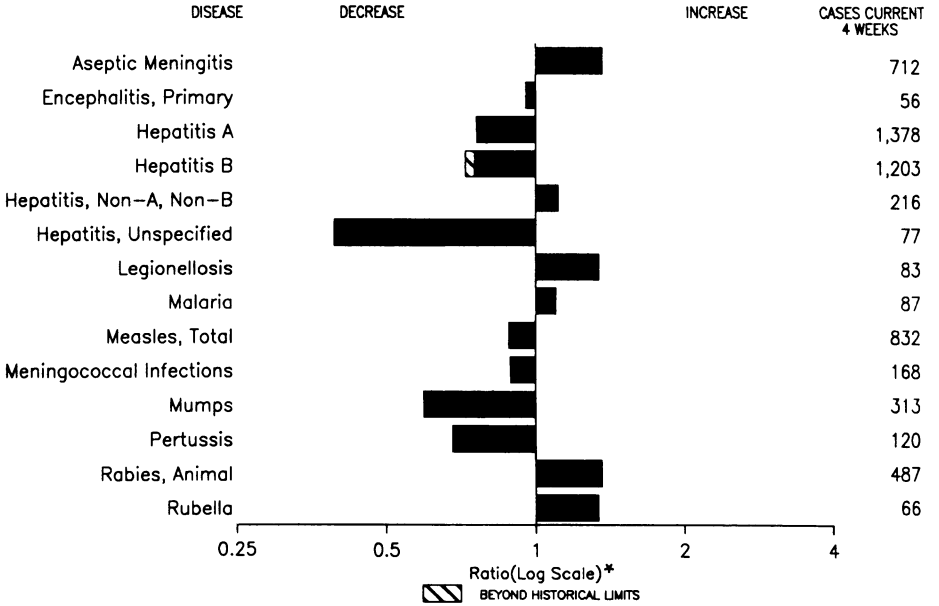
The orphanage houses approximately 150 children. No new children had been admitted to the orphanage in 1991, and no illness had been reported among staff members. The index patient was treated with trimethoprim-sulfamethoxazole; however, a stool culture yielded *S. dysenteriae* type 1 that was resistant to trimethoprim-sulfamethoxazole as well as to ampicillin, chloramphenicol, and tetracycline. Stool cultures from the two children who became ill after the index patient also yielded *S. dysenteriae* type 1 with the same resistance pattern as the initial isolate. Stool cultures from 39 children most likely to have had contact with the index patient were negative, except for one isolate of *S. flexneri* type 4. No additional cases of dysentery have been reported from the orphanage.

Rabinal, Baja Verapaz

On March 21, the MOH received a request from health officials in the department of Baja Verapaz (116 miles [186 km] north of Guatemala City) for drugs to treat suspected amebiasis; the health officials reported that more than 100 cases of dysentery had occurred in residents of Rabinal, a community of approximately 10,000 persons. To determine the cause of the outbreak, INCAP investigators traveled to Rabinal and collected stool specimens in Cary-Blair transport medium from 16 per-

(Continued on page 427)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending June 22, 1991, with historical data — United States



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

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending June 22, 1991 (25th Week)

	Cum. 1991		Cum. 1991
AIDS	19,131	Measles: imported	105
Anthrax	-	indigenous	6,695
Botulism: Foodborne	11	Plague	-
Infant	23	Poliomyelitis, Paralytic*	-
Other	4	Psittacosis	49
Brucellosis	27	Rabies, human	-
Cholera	14	Syphilis, primary & secondary	20,058
Congenital rubella syndrome	11	Syphilis, congenital, age < 1 year	12
Diphtheria	1	Tetanus	12
Encephalitis, post-infectious	39	Toxic shock syndrome	153
Gonorrhea	270,850	Trichinosis	10
Haemophilus influenzae (invasive disease)	1,697	Tuberculosis	10,171
Hansen Disease	65	Tularemia	47
Leptospirosis	33	Typhoid fever	144
Lyme Disease	2,542	Typhus fever, tickborne (RMSF)	143

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

TABLE II. Cases of selected notifiable diseases, United States, weeks ending June 22, 1991, and June 23, 1990 (25th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	19,131	2,791	298	39	270,850	323,246	11,844	7,897	1,431	645	550	2,542
NEW ENGLAND	897	158	13	1	6,796	8,594	283	403	49	24	39	98
Maine	31	8	3	-	70	107	12	14	2	-	-	-
N.H.	21	10	-	-	154	100	19	13	4	-	2	6
Vt.	9	53	1	-	23	29	14	4	4	-	2	1
Mass.	540	46	7	1	2,781	3,372	141	308	27	22	33	45
R.I.	37	34	-	-	570	521	52	14	10	2	2	34
Conn.	259	7	2	-	3,198	4,465	45	50	2	-	-	12
MID. ATLANTIC	5,165	324	25	10	32,152	45,806	1,028	705	145	13	158	1,854
Upstate N.Y.	688	166	12	6	5,979	6,669	484	291	91	7	49	1,219
N.Y. City	2,811	57	-	-	11,561	19,624	246	74	5	-	17	-
N.J.	1,113	-	-	-	5,201	7,637	141	169	27	-	20	283
Pa.	553	101	13	4	9,411	11,876	157	171	22	6	72	352
E.N. CENTRAL	1,255	467	86	6	50,843	60,430	1,423	954	236	30	103	98
Ohio	244	141	29	2	15,565	18,152	197	227	111	13	53	56
Ind.	110	55	11	1	5,303	5,191	208	119	1	1	10	5
Ill.	582	85	20	3	15,723	18,766	585	126	22	1	4	-
Mich.	219	171	23	-	11,497	14,238	175	304	64	15	26	37
Wis.	100	15	3	-	2,755	4,083	258	178	38	-	10	-
W.N. CENTRAL	520	177	10	4	13,236	16,637	1,240	355	160	12	27	97
Minn.	108	30	5	-	1,330	2,109	173	35	11	2	4	6
Iowa	40	37	-	2	932	1,206	32	21	6	3	7	6
Mo.	292	72	3	2	8,117	9,760	327	246	139	4	10	82
N. Dak.	4	1	-	-	22	65	26	3	2	1	-	-
S. Dak.	1	4	2	-	162	108	483	2	-	-	3	-
Nebr.	32	10	-	-	875	853	152	20	1	-	3	-
Kans.	43	23	-	-	1,798	2,536	47	28	1	2	-	3
S. ATLANTIC	4,418	684	57	13	81,386	91,971	842	1,680	207	130	93	147
Del.	35	10	1	-	1,117	1,459	6	26	4	2	2	16
Md.	442	57	9	-	8,281	9,619	158	223	36	13	19	61
D.C.	269	18	-	-	4,757	6,137	46	70	1	1	-	-
Va.	354	110	15	3	8,249	8,444	96	106	17	89	7	34
W. Va.	25	3	1	-	565	636	11	31	1	6	-	5
N.C.	220	70	20	-	15,102	15,363	89	273	83	-	12	18
S.C.	163	18	-	-	5,823	7,584	25	360	16	3	17	2
Ga.	595	75	6	2	20,605	20,377	93	235	19	-	9	6
Fla.	2,315	323	5	8	16,887	22,352	318	356	30	16	27	5
E.S. CENTRAL	476	176	17	-	25,409	25,493	118	660	168	3	30	56
Ky.	78	46	3	-	2,711	3,133	17	84	5	2	12	20
Tenn.	148	26	9	-	9,465	7,702	71	497	153	-	9	27
Ala.	156	76	5	-	6,614	8,279	26	74	9	1	8	9
Miss.	94	28	-	-	6,619	6,379	4	5	1	-	1	-
W.S. CENTRAL	1,940	312	29	2	31,259	34,386	1,664	968	45	103	21	35
Ark.	94	32	3	-	3,509	4,181	166	57	1	4	5	12
La.	321	45	7	1	7,823	6,525	75	144	4	4	5	-
Okla.	91	1	3	-	3,174	3,039	160	111	19	8	5	21
Tex.	1,434	234	16	1	16,753	20,641	1,263	656	21	87	6	2
MOUNTAIN	504	80	11	1	5,589	6,763	1,992	507	80	93	40	5
Mont.	14	2	1	-	54	88	56	37	3	5	1	-
Idaho	9	-	-	-	73	59	46	40	-	-	3	-
Wyo.	6	-	-	-	54	93	75	5	-	-	-	3
Colo.	192	28	2	1	1,428	1,790	277	75	30	15	7	-
N. Mex.	47	10	-	-	539	591	552	117	7	26	1	-
Ariz.	90	21	8	-	2,201	2,634	647	101	12	38	15	-
Utah	51	8	-	-	154	193	149	28	11	9	4	-
Nev.	95	11	-	-	1,086	1,315	190	104	17	-	9	2
PACIFIC	3,956	413	50	2	24,180	33,166	3,254	1,665	341	237	39	152
Wash.	232	-	5	-	2,073	3,022	301	236	82	12	1	-
Oreg.	94	-	-	-	968	1,216	189	158	65	6	1	-
Calif.	3,542	372	43	2	20,446	28,023	2,669	1,228	180	218	35	152
Alaska	9	15	2	-	380	585	76	17	12	1	-	-
Hawaii	79	26	-	-	313	320	19	26	2	-	2	-
Guam	1	-	-	-	-	129	-	-	-	-	-	-
P.R.	853	142	-	1	326	432	54	237	91	29	-	-
V.I.	4	-	-	-	249	214	-	4	-	-	-	-
Amer. Samoa	-	-	-	-	-	48	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	100	-	-	-	-	-	-

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

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 22, 1991, and June 23, 1990 (25th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
UNITED STATES	484	153	6,695	4	105	13,612	1,180	70	2,455	37	977	1,542	301	405	582
NEW ENGLAND	33	-	34	-	10	236	81	-	20	4	169	188	-	2	5
Maine	1	-	-	-	-	29	6	-	-	2	44	6	-	-	-
N.H.	2	-	-	-	-	8	7	-	3	-	12	12	-	1	1
Vt.	1	-	5	-	-	1	10	-	2	-	3	6	-	-	-
Mass.	17	-	9	-	8	17	44	-	-	1	98	154	-	1	-
R.I.	7	-	2	-	-	30	-	-	3	-	-	-	-	-	1
Conn.	5	-	18	-	2	151	14	-	12	1	12	10	-	-	3
MID. ATLANTIC	70	76	3,605	-	6	936	125	2	186	1	88	308	29	981	2
Upstate N.Y.	17	11	261	-	4	293	70	-	71	1	61	243	27	960	1
N.Y. City	24	50	1,425	-	-	149	7	-	-	-	-	-	-	-	-
N.J.	23	-	430	-	1	165	23	-	53	-	1	18	-	-	-
Pa.	6	15	1,489	-	1	329	25	2	62	-	26	47	2	21	1
E.N. CENTRAL	42	-	65	-	7	3,261	177	3	234	2	166	386	-	162	29
Ohio	9	-	-	-	1	439	60	-	51	2	68	80	-	147	1
Ind.	2	-	-	-	1	386	8	-	6	-	37	60	-	1	-
Ill.	15	-	24	-	-	1,246	51	-	90	-	25	129	-	3	17
Mich.	14	-	39	-	-	443	39	2	73	-	23	36	-	11	9
Wis.	2	-	2	-	5	747	19	1	14	-	13	81	-	-	2
W.N. CENTRAL	19	-	24	-	2	663	68	3	68	4	62	48	-	15	6
Minn.	6	-	6	-	2	232	13	-	6	1	19	7	-	6	1
Iowa	3	-	15	-	-	24	7	-	14	1	7	6	-	5	4
Mo.	4	-	-	-	-	76	26	-	20	2	23	29	-	4	-
N. Dak.	1	-	-	-	-	-	1	-	-	-	1	1	-	-	1
S. Dak.	-	-	-	-	-	23	2	-	-	-	1	1	-	-	-
Nebr.	-	-	-	-	-	103	4	-	4	-	5	1	-	-	-
Kans.	5	-	3	-	-	205	15	3	24	-	6	3	-	-	-
S. ATLANTIC	93	3	395	-	15	850	213	34	900	17	88	133	-	10	13
Del.	1	-	21	-	-	11	1	-	6	-	-	3	-	-	-
Md.	28	1	164	-	-	172	22	8	179	1	15	34	-	6	1
D.C.	5	-	-	-	-	17	6	-	20	-	-	14	-	1	1
Va.	16	2	21	-	3	68	22	4	38	-	10	13	-	-	1
W. Va.	1	-	-	-	-	6	10	1	16	-	6	9	-	-	-
N.C.	3	-	29	-	2	19	44	13	171	1	15	29	-	-	-
S.C.	6	-	12	-	-	4	23	1	298	9	9	5	-	-	-
Ga.	11	-	10	-	4	71	43	7	26	5	21	13	-	-	-
Fla.	22	-	138	-	6	482	42	-	146	1	12	13	-	3	10
E.S. CENTRAL	8	1	6	-	-	91	85	-	138	3	30	68	-	83	1
Ky.	2	-	-	-	-	16	31	-	-	-	-	-	-	-	-
Tenn.	3	1	6	-	-	32	26	-	113	1	14	28	-	83	1
Ala.	3	-	-	-	-	17	27	-	7	2	16	35	-	-	-
Miss.	-	-	-	-	-	26	1	-	18	-	-	5	-	-	-
W.S. CENTRAL	28	-	26	-	12	2,994	84	7	269	1	22	30	-	1	2
Ark.	3	-	-	-	5	40	15	1	38	-	2	2	-	1	1
La.	7	-	-	-	-	10	21	-	18	1	9	10	-	-	-
Okla.	1	-	-	-	-	143	12	-	6	-	11	18	-	-	1
Tex.	17	-	26	-	7	2,801	36	6	207	-	-	-	-	-	-
MOUNTAIN	19	37	686	-	15	618	49	11	232	-	122	146	-	4	85
Mont.	1	-	-	-	-	1	7	-	-	-	-	23	-	-	13
Idaho	1	25	238	-	2	21	7	-	6	-	20	26	-	2	45
Wyo.	-	-	-	-	-	11	1	-	3	-	3	-	-	-	-
Colo.	5	-	1	-	4	91	10	9	88	-	61	54	-	-	3
N. Mex.	4	2	112	-	5	90	6	N	N	-	15	7	-	-	-
Ariz.	6	-	274	-	-	185	13	2	113	-	8	26	-	-	22
Utah	1	10	45	-	4	47	-	-	12	-	13	6	-	-	1
Nev.	1	-	16	-	-	172	5	-	10	-	2	4	-	2	1
PACIFIC	172	36	1,854	4	38	3,963	298	10	408	5	230	235	1	147	439
Wash.	13	-	1	-	3	226	37	2	88	2	62	56	-	-	-
Oreg.	4	8	33	4§	23	186	39	N	N	-	31	21	-	1	5
Calif.	151	26	1,816	-	9	3,464	215	8	301	1	103	139	1	144	426
Alaska	-	-	-	-	1	80	6	-	7	-	5	-	-	-	-
Hawaii	4	2	4	-	2	7	1	-	12	2	29	19	-	2	8
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	-
P.R.	1	14	80	-	1	914	15	-	8	2	16	5	-	1	-
V.I.	-	U	-	U	-	21	-	U	5	U	-	-	U	-	-
Amer. Samoa	-	U	-	U	-	99	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.
N: Not notifiable U: Unavailable †International §Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 22, 1991, and June 23, 1990 (25th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	20,058	23,473	153	10,171	10,576	47	144	143	2,799
NEW ENGLAND	536	886	7	266	244	-	12	4	12
Maine	-	5	3	9	-	-	1	-	-
N.H.	12	39	1	-	3	-	-	-	1
Vt.	1	1	-	3	7	-	-	-	-
Mass.	255	334	3	141	130	-	10	3	-
R.I.	24	7	-	27	35	-	-	-	-
Conn.	244	500	-	86	69	-	1	1	11
MID. ATLANTIC	3,391	5,164	25	2,352	2,555	-	27	-	900
Upstate N.Y.	103	395	11	177	230	-	6	-	324
N.Y. City	1,598	2,229	1	1,437	1,538	-	13	-	-
N.J.	715	822	-	419	429	-	6	-	401
Pa.	975	1,718	13	319	358	-	2	-	175
E.N. CENTRAL	2,254	1,493	27	1,033	962	2	13	11	51
Ohio	300	246	17	139	154	-	2	7	7
Ind.	66	23	-	72	85	-	-	4	2
Ill.	1,117	563	4	565	488	-	3	-	10
Mich.	552	467	6	211	194	2	7	-	8
Wis.	219	194	-	46	41	-	1	-	24
W.N. CENTRAL	338	216	30	254	268	14	2	6	411
Minn.	38	48	7	46	48	-	2	-	147
Iowa	30	29	6	33	31	-	-	-	83
Mo.	227	105	8	114	127	12	-	3	6
N. Dak.	-	1	-	3	12	-	-	-	47
S. Dak.	1	1	1	20	9	1	-	-	97
Nebr.	7	6	1	9	14	-	-	-	8
Kans.	35	26	7	29	27	1	-	3	23
S. ATLANTIC	6,063	7,544	13	1,841	1,934	4	29	59	682
Del.	77	95	1	16	24	-	-	-	79
Md.	497	568	-	176	149	-	6	9	251
D.C.	385	458	-	104	73	-	1	-	5
Va.	507	418	3	158	159	-	8	5	138
W. Va.	17	7	-	39	35	-	1	1	30
N.C.	913	876	7	228	256	1	-	20	-
S.C.	718	449	-	199	248	1	-	15	52
Ga.	1,479	1,897	-	336	295	1	4	8	110
Fla.	1,470	2,776	2	585	695	1	9	1	17
E.S. CENTRAL	2,227	1,873	8	768	800	5	1	24	81
Ky.	37	33	4	148	201	2	1	6	22
Tenn.	791	681	4	266	203	3	-	13	18
Ala.	788	615	-	197	248	-	-	5	41
Miss.	611	544	-	157	148	-	-	-	-
W.S. CENTRAL	3,623	3,755	4	1,171	1,279	16	6	36	371
Ark.	323	279	2	97	131	12	-	6	20
La.	1,190	1,135	-	94	186	-	1	-	4
Okla.	87	112	2	70	92	4	-	30	111
Tex.	2,023	2,229	-	910	870	-	5	-	236
MOUNTAIN	273	435	18	262	210	5	5	2	85
Mont.	2	-	-	3	10	4	-	2	16
Idaho	3	6	-	4	5	-	-	-	1
Wyo.	3	1	-	2	3	1	-	-	48
Colo.	40	28	3	6	6	-	1	-	-
N. Mex.	14	20	5	30	43	-	-	-	1
Ariz.	183	311	4	153	105	-	3	-	16
Utah	4	4	6	25	12	-	-	-	-
Nev.	24	65	-	39	26	-	1	-	3
PACIFIC	1,353	2,107	21	2,224	2,324	1	49	1	206
Wash.	76	230	2	142	129	1	2	-	1
Oreg.	37	70	-	50	59	-	2	1	1
Calif.	1,233	1,786	19	1,910	2,015	-	44	-	200
Alaska	3	7	-	29	23	-	-	-	3
Hawaii	4	14	-	93	98	-	1	-	1
Guam	-	1	-	-	22	-	-	-	-
P.R.	230	187	-	94	51	-	6	-	20
V.I.	61	1	-	1	4	-	-	-	-
Amer. Samoa	-	-	-	-	11	-	-	-	-
C.N.M.I.	-	1	-	-	23	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending June 22, 1991 (25th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	577	388	103	56	13	17	37
Boston, Mass.	167	94	41	18	8	6	12
Bridgeport, Conn.	45	30	7	4	-	4	1
Cambridge, Mass.	27	21	2	4	-	-	3
Fall River, Mass.	29	25	3	1	-	-	1
Hartford, Conn.	50	27	10	8	1	4	2
Lowell, Mass.	26	22	2	2	-	-	-
Lynn, Mass.	11	7	2	2	-	-	-
New Bedford, Mass.	16	15	1	-	-	-	-
New Haven, Conn.	40	25	9	4	2	-	4
Providence, R.I.	42	28	8	5	1	-	2
Somerville, Mass.	3	3	-	-	-	-	-
Springfield, Mass.	36	24	5	5	-	2	1
Waterbury, Conn.	31	22	7	2	-	-	3
Worcester, Mass.	54	45	6	1	1	1	8
MID. ATLANTIC	2,664	1,729	499	310	71	55	131
Albany, N.Y.	46	34	6	3	1	2	4
Allentown, Pa.	33	29	1	3	-	-	1
Buffalo, N.Y.	100	73	15	5	3	4	3
Camden, N.J.	44	26	7	5	3	3	1
Elizabeth, N.J.	26	18	5	3	-	-	3
Erie, Pa.†	38	26	9	1	1	1	2
Jersey City, N.J.	66	43	12	9	-	2	1
New York City, N.Y.	1,495	930	288	213	37	27	56
Newark, N.J.	64	29	16	14	1	4	7
Paterson, N.J.	27	17	4	5	1	-	1
Philadelphia, Pa.	330	217	58	30	18	7	23
Pittsburgh, Pa.†	45	31	10	4	-	-	3
Reading, Pa.	43	32	9	1	1	-	4
Rochester, N.Y.	107	83	16	4	2	2	9
Schenectady, N.Y.	18	15	2	1	-	-	1
Scranton, Pa.†	27	21	5	1	-	-	4
Syracuse, N.Y.	75	55	17	-	-	3	3
Trenton, N.J.	29	18	6	4	1	-	1
Utica, N.Y.	28	17	8	1	2	-	2
Yonkers, N.Y.	23	15	5	3	-	-	2
E.N. CENTRAL	2,157	1,301	432	229	113	82	102
Akron, Ohio	57	41	9	3	3	1	5
Canton, Ohio	38	31	5	2	-	-	5
Chicago, Ill.	458	166	86	105	68	33	9
Cincinnati, Ohio	126	88	22	4	3	9	15
Cleveland, Ohio	157	104	34	13	2	4	-
Columbus, Ohio	161	102	35	14	5	5	2
Dayton, Ohio	122	76	31	11	4	-	6
Detroit, Mich.	232	131	58	27	8	8	8
Evansville, Ind.	54	36	12	3	2	1	1
Fort Wayne, Ind.	65	48	11	2	3	1	5
Gary, Ind.	14	7	2	5	-	-	-
Grand Rapids, Mich.	64	41	15	5	1	2	7
Indianapolis, Ind.	179	121	34	15	3	6	14
Madison, Wis.	26	20	4	1	1	-	-
Milwaukee, Wis.	124	89	22	8	2	3	7
Peoria, Ill.	44	29	10	1	3	1	2
Rockford, Ill.	45	30	10	1	1	3	2
South Bend, Ind.	45	30	8	4	1	2	5
Toledo, Ohio	93	68	19	2	2	2	8
Youngstown, Ohio	53	43	5	3	1	1	1
W.N. CENTRAL	800	553	154	43	20	30	30
Des Moines, Iowa	75	56	14	1	2	2	3
Duluth, Minn.	27	18	3	2	-	4	-
Kansas City, Kans.	31	20	6	1	1	3	1
Kansas City, Mo.	124	79	29	9	3	4	4
Lincoln, Nebr.	23	18	5	-	-	-	1
Minneapolis, Minn.	204	142	40	15	4	3	11
Omaha, Nebr.	69	42	20	2	1	4	2
St. Louis, Mo.	126	85	20	8	7	6	1
St. Paul, Minn.	69	54	8	2	2	3	5
S. ATLANTIC	1,116	648	248	146	41	30	54
Atlanta, Ga.	145	72	33	28	7	5	4
Baltimore, Md.	275	156	73	34	6	6	21
Charlotte, N.C.	83	49	18	14	2	-	2
Jacksonville, Fla.	115	68	25	15	3	4	4
Miami, Fla.	113	56	30	14	8	4	-
Norfolk, Va.	58	34	10	8	2	4	5
Richmond, Va.	79	44	18	10	4	3	4
Savannah, Ga.	51	36	9	4	2	-	4
St. Petersburg, Fla.	59	46	4	4	4	-	1
Tampa, Fla.	124	78	25	15	2	4	9
Washington, D.C.§	U	U	U	U	U	U	U
Wilmington, Del.	14	9	3	-	1	-	-
E.S. CENTRAL	852	556	168	70	34	24	57
Birmingham, Ala.	112	68	19	7	7	11	3
Chattanooga, Tenn.	71	50	13	7	1	-	3
Knoxville, Tenn.	147	92	30	18	3	4	13
Louisville, Ky.	98	68	25	4	-	1	15
Memphis, Tenn.	133	90	22	11	8	2	10
Mobile, Ala.	154	101	30	11	9	3	5
Montgomery, Ala.	50	32	12	4	1	1	1
Nashville, Tenn.	87	55	17	8	5	2	7
W.S. CENTRAL	1,388	855	281	155	52	45	80
Austin, Tex.	63	35	18	8	1	1	3
Baton Rouge, La.	34	23	5	4	-	2	1
Corpus Christi, Tex.	66	37	14	8	4	3	1
Dallas, Tex.	210	128	47	21	6	8	4
El Paso, Tex.	66	42	15	4	2	3	3
Ft. Worth, Tex.	80	48	15	6	4	7	8
Houston, Tex.	384	223	69	60	18	14	29
Little Rock, Ark.	80	49	19	8	4	-	4
New Orleans, La.	34	23	4	7	-	-	-
San Antonio, Tex.	211	136	47	15	9	4	8
Shreveport, La.	52	42	6	3	1	-	7
Tulsa, Okla.	108	69	22	11	3	3	12
MOUNTAIN	708	445	139	69	38	17	49
Albuquerque, N.M.	96	59	19	14	1	3	3
Colo. Springs, Colo.	38	22	5	6	4	1	5
Denver, Colo.	127	83	21	12	8	3	17
Las Vegas, Nev.	113	63	35	10	5	-	8
Ogden, Utah	15	11	3	1	-	-	1
Phoenix, Ariz.	158	107	25	12	6	8	3
Pueblo, Colo.	25	16	6	3	-	-	1
Salt Lake City, Utah	44	18	13	5	7	1	5
Tucson, Ariz.	92	66	12	6	7	1	6
PACIFIC	1,726	1,140	314	161	59	50	113
Berkeley, Calif.	15	9	3	-	-	3	-
Fresno, Calif.	50	30	14	3	2	1	10
Glendale, Calif.	17	11	5	-	1	-	-
Honolulu, Hawaii	77	50	16	9	2	-	5
Long Beach, Calif.	82	59	10	8	3	2	3
Los Angeles, Calif.	441	279	76	49	24	11	18
Oakland, Calif.§	U	U	U	U	U	U	U
Pasadena, Calif.	36	26	7	2	-	1	4
Portland, Oreg.	126	87	19	8	6	6	4
Sacramento, Calif.	156	98	34	13	5	6	12
San Diego, Calif.	154	98	30	16	5	5	17
San Francisco, Calif.	138	82	27	23	3	3	3
San Jose, Calif.	163	111	34	10	2	6	15
Seattle, Wash.	150	103	22	18	3	4	6
Spokane, Wash.	63	52	6	2	1	2	9
Tacoma, Wash.	58	45	11	-	2	-	7
TOTAL	11,988††	7,615	2,338	1,239	441	350	653

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

**Pneumonia and influenza.

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

††Total includes unknown ages.

§Report for this week is unavailable (U).

Shigella dysenteriae — *Continued*

sons with dysentery. Eleven samples yielded *S. dysenteriae* type 1, resistant to chloramphenicol and tetracycline. Based on these results, ill persons were treated with trimethoprim-sulfamethoxazole.

On April 2 and 10, investigators from INCAP and the MOH again visited Rabinal. Surveys done by personnel of the local health post showed that at least 540 persons had developed dysentery since early March; two infants had died. Stool samples were obtained from 46 patients with dysentery; 12 grew *S. dysenteriae* type 1. For 10 patients, strains were indistinguishable from those obtained in March. Strains from two patients were resistant to ampicillin, chloramphenicol, tetracycline, and trimethoprim-sulfamethoxazole. One of these resistant strains was from a boy who had taken trimethoprim-sulfamethoxazole prophylaxis for respiratory illness in mid-March. By the end of April, local personnel reported that the number of new cases of dysentery was declining.

Reported by: JR Cruz, F Cano, L Rodriguez, Program on Infection, Nutrition and Immunology, Div of Nutrition and Health, Institute of Nutrition of Central America and Panama; CA Rios, Hospital for Infectious Diseases, Guatemala City; P Guerra, Z Leonardo, Baja Verapaz Health Area, Ministry of Health. Enteric Diseases Br, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Pandemic *S. dysenteriae* type 1 (the Shiga bacillus) affected Central America from 1969 through 1972. In Guatemala, there were more than 112,000 cases and at least 10,000 deaths (*1,2*). The outbreak spread quickly, with high attack rates in all age groups and the highest incidence and mortality rates in young children (*2,3*). The case-fatality rate estimated from village surveys was 7.4% (*2*). Many cases were misdiagnosed as amebiasis, and treatment with antiamebic drugs contributed to the high mortality (*2,3*). Treatment was further complicated by resistance of the epidemic strain of *S. dysenteriae* type 1 to sulfathiazole, chloramphenicol, and tetracycline, drugs commonly used at that time to treat dysentery (*4*).

Since 1972, no major outbreaks of dysentery caused by the Shiga bacillus have occurred in Central America. However, in 1988, the number of these infections reported in the United States increased fivefold over the annual mean from the preceding decade, and most ill persons had recently visited the Yucatán peninsula in Mexico (*5*). The antimicrobial resistance pattern and plasmid profile were similar to those of the 1969–1972 pandemic strain (*4,5*). In 1989, the number of imported cases decreased in the United States, and outbreaks of documented Shiga infection have not been reported from Mexico.

Appropriate antimicrobial therapy decreases the severity and duration of dysentery caused by *Shigella* (*6*). Nalidixic acid is effective therapy for strains resistant to other antimicrobials; the newer quinolones are also effective, but are costly and have not been approved for use in children (*6*). Moreover, *Shigella* can rapidly acquire resistance, and are likely to do so in settings in which antimicrobials are commonly used and shigellosis is endemic (*7*). The recent cases in Guatemala underscore the need for continued surveillance for enteric pathogens, especially those associated with dysentery. Once *Shigella* are identified, determination of the antimicrobial resistance pattern and the modes of transmission are important in designing control measures. As during the 1969–1972 pandemic, the recent cases in Rabinal were initially misdiagnosed as amebiasis, a misdiagnosis that may be common in some locations (*8*). Prompt culturing facilitated the correct diagnosis and appropriate therapy.

Shigella dysenteriae — *Continued*

The appearance of the Shiga bacillus in two locations separated by more than 100 km suggests this pathogen may be present in other areas of Guatemala. The detection of trimethoprim-sulfamethoxazole–resistant strains early in the outbreak highlights the need for continued monitoring of resistance. The MOH and INCAP have requested that any clusters of bloody diarrhea among persons in Guatemala be reported. Training in techniques to identify *S. dysenteriae* type 1 has been incorporated into the courses for workers from regional laboratories; these courses were initiated in response to the current cholera epidemic.

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Perspectives in Disease Prevention and Health Promotion

Violence Education in Family Practice Residency Programs — United States, 1989

In the United States, violence is a well-documented public health problem (*1–3*), and physicians have been urged to help reduce the impact of this problem (*4*). To assess efforts to educate family practice physicians about violence, in 1989, an investigator in a family practice residency program conducted a national survey of all family practice residency directors. The survey assessed the beliefs of residency directors regarding specific types of violence and the role of family practice residency programs in educating physicians about this problem. This report summarizes results of the survey (*5*).

In August 1989, a questionnaire approved by the Society of Teachers of Family Medicine was mailed to directors of the 382 family practice residency programs in the United States and Puerto Rico; 290 (76%) responded. Nonrespondents and respondents were similar by type of program structure and by location of the residency (*5*).

Violence Education — Continued

Most residency directors indicated that education about violence was not a formal part of the curricula (169 [59%], none or limited; 106 [36%], some; and 15 [5%], substantial). Programs with substantive content were most common in the East South Central region (eight [67%]) and least prevalent in the Mountain region (two [15%]). Eighty (28%) respondents indicated plans to incorporate violence education in the curricula; most (61 [76%]) of these planned to add conferences, lectures, or behavioral science seminars.

Most program directors believed that education regarding violence was not addressed in their residencies (nine [3%], none; and 189 [65%], limited). However, most programs were addressing physical abuse of children (270 [93%]), sexual abuse of children (249 [86%]), and rape (241 [83%]). Program directors believed the most prevalent specific types of violence in society include violence associated with substance abuse (157 [54%]), child physical abuse (133 [46%]), and child sexual abuse (125 [43%]). In addition, program directors considered child physical abuse (131 [45%]), violence and substance abuse (122 [42%]), and child sexual abuse (116 [40%]) as priority topics for education of physicians.

Adapted from: Family Medicine *1991;23:194–7, as reported by MK Hendricks-Matthews, PhD, Family Practice Residency Program, Barberton Citizens Hospital, Barberton, Ohio. Program Development and Implementation Br, Div of Injury Control, National Center for Environmental Health and Injury Control, CDC.*

Editorial Note: Because of the pervasive social, psychological, and physical impact of violence in the United States (*6,7*), many physicians provide care for patients who are victims, perpetrators, and/or witnesses of violent crimes. As a consequence of their exposure to violent crimes, many of these persons incur emotional and physical sequelae. Without addressing the underlying cause of these symptoms (i.e., the violence), symptoms may be prolonged (*8*), causing these patients to return to medical settings because of the need for treatment of chronic problems. Although family physicians are uniquely positioned to assist in reducing these effects of violence, the findings in this report and others (*9*) indicate that instruction about particular types of violence is generally limited and reflects the extent to which residency directors consider specific topics to be important. Thus, family practice residency directors must consider violence to be an important problem before educational opportunities are provided for residents.

The results of this survey of residency directors are subject to at least two limitations. First, directors were not asked to describe specific approaches used to teach about particular types of violence, nor to specify the amount of instructional time allotted for specific topics. Thus, these findings may have overestimated the prevalence of violence education in family practice residency programs. Second, the conventional division of residency programs based on program structure type (e.g., community-based and medical school-based), rather than on geographic parameters (e.g., rural/urban or suburban/inner city), may have indicated greater differences among programs.

Legislators and law enforcement officials have primary responsibility for prevention and control of violence; however, physicians are often the principal source of treatment for victims and perpetrators of violence. Therefore, if not properly trained, physicians may be limited in their abilities to recognize and screen patients who have health problems related to exposure to violence (e.g., as victims, perpetrators, or witnesses). The results of this survey may be useful for planning future curricula for physician training about violence prevention.

Violence Education — Continued

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Notice to Readers

NIOSH Current Intelligence Bulletin 54: Environmental Tobacco Smoke in the Workplace; Lung Cancer and Other Health Effects

CDC's National Institute for Occupational Safety and Health (NIOSH) has released *NIOSH Current Intelligence Bulletin 54: Environmental Tobacco Smoke in the Workplace; Lung Cancer and Other Health Effects* (*1*).* Current Intelligence Bulletins (CIBs) provide new data or update existing information about chemical substances, physical agents, or safety hazards found in the workplace.

CIB 54 presents information about the potential risk for cancer to workers exposed to environmental tobacco smoke (ETS). Since 1964, when the Surgeon General issued the first report on smoking and health, research on the toxicity and carcinogenicity of tobacco smoke has demonstrated that the health risk from inhaling tobacco smoke is not limited to smokers, but also includes nonsmokers who inhale ETS. ETS contains many of the toxic agents and carcinogens that are present in mainstream smoke, but in diluted form. Recent epidemiologic studies support and reinforce earlier published reviews by the Surgeon General and the National Research Council that demonstrate that exposure to ETS can cause lung cancer. These reviews estimated the relative risk of lung cancer to be approximately 1.3 for a nonsmoker living with a smoker compared with a nonsmoker living with a nonsmoker. In addition, recent evidence also suggests a possible association between exposure to ETS and an increased risk for heart disease in nonsmokers.

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

Environmental Tobacco Smoke — Continued

Although these data were not gathered in an occupational setting, ETS meets the criteria of the Occupational Safety and Health Administration (OSHA) for classification as a potential occupational carcinogen.† NIOSH therefore considers ETS to be a potential occupational carcinogen and recommends that exposures be reduced to the lowest feasible concentration. The risk for developing cancer should be decreased by minimizing exposure to ETS. Employers should minimize occupational exposure to ETS by using all available preventive measures.

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

Reference

1. NIOSH. Current intelligence bulletin #54: environmental tobacco smoke in the workplace; lung cancer and other health effects. Cincinnati, Ohio: US Department of Health and Human Services, Public Health Service, CDC, 1991; DHHS publication no. (NIOSH)91-108.

†29 CFR 1990.

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

The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. Accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials, as well as matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Mailstop C-08, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

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