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Epidemiologic Notes and Reports

Acute Pulmonary Hemorrhage/Hemosiderosis Among Infants — Cleveland, January 1993–November 1994

Hemosiderosis is an uncommon childhood disease characterized by spontaneous pulmonary hemorrhage often associated with iron deficiency anemia. During January 1993–November 1994, eight cases of acute pulmonary hemorrhage/hemosiderosis were diagnosed among infants at a children's referral hospital in Cleveland. In comparison, during 1983–1993, a total of three cases of pulmonary hemosiderosis were diagnosed among infants and children at this hospital. This report summarizes the preliminary results of the ongoing epidemiologic, clinical, and laboratory investigations by pediatric pulmonologists in Cleveland, the Ohio Department of Health, the City of Cleveland Department of Public Health, the Cuyahoga County Board of Health, and CDC.

In 1993, cases were diagnosed in January (one case) and October (one); in 1994, cases were diagnosed in March (one), June (one), July (two), September (one), and November (one). For each of the eight infants (mean age: 10.3 weeks; range: 4 weeks–16 weeks), onset of hemoptysis was associated with pallor and an abrupt cessation in crying; fever was not reported for any of the infants. Other reported symptoms on admission included limpness, lethargy, and grunting. At the time of initial evaluation at the hospital, seven infants required admission to the pediatric intensive-care unit because of hemoptysis and respiratory distress.

All eight infants were black, and seven were male. The median age of their mothers was 20 years (range: 15–29 years). Seven of the pregnancies and deliveries occurred without complications; one infant born at 27 weeks' gestation and weighing 2 lbs, 2 oz (950 g) had complications of severe prematurity. All infants lived within a 6-mile radius of the hospital. No infants were breast fed; before admission, all were fed cow's-milk–based formula.

Laboratory findings on admission included a normal white blood cell count (median=13.8 cells/mm^3) and features consistent with a normocytic, normochromic anemia characteristic of acute blood loss with a mean hematocrit of 27.1% (normal: 36.0%–47.0%) and a mean hemoglobin of 9.1 g/dL (normal: 10.0–15.0 g/dL). Red blood cell morphology was suggestive of a microangiopathic process: microscopic exam-

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ination indicated that five of the eight infants had mild to moderate (1+ to 2+) hemolysis characterized by the presence of microcytes, burr cells, spherocytes, and bizarre fragments. Based on guaiac testing, occult blood was present in the stool of three infants. Results of coagulation studies included normal prothrombin and partial thromboplastin time for all infants. Chest radiographs of all infants showed diffuse, bilateral infiltrates consistent with pulmonary hemorrhage. In six infants, the mean serum magnesium level was 2.1 mg/dL (normal: 1.4–1.9 mg/dL).

Cultures of blood, urine, and bronchoalveolar lavage from seven infants were negative for bacterial, mycotic, and viral pathogens. Cultures of bronchoalveolar lavage from one infant grew *Bacillus* sp. Hemosiderin-laden macrophages—indicating continued pulmonary hemorrhage—were detected in each of the seven infants who underwent bronchoscopy more than 2 weeks after the acute hemorrhage. No other source of bleeding (i.e., gastrointestinal or nasopharyngeal) was identified during endoscopic evaluation. Immunoglobulin G levels to cow's milk proteins were above normal (>20 U/mL) in five of seven infants.

Five infants required mechanical ventilation for an average of 5 days. All infants survived the first hospitalization and were discharged in stable condition without evidence of hemoptysis after a median length of stay of 10 days (range: 2–35 days). In five infants, acute hemoptysis necessitating readmission recurred within 1 day to 6 months of discharge. One death—attributed to severe hypoxic encephalopathy secondary to recurring pulmonary hemorrhage—occurred in a 9-week-old full-term infant.

Local surveillance measures and active case finding have not identified additional cases in the Cleveland area. A case-control study is under way to determine risk factors for acute pulmonary hemorrhage among infants.

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Editorial Note: The eight cases of acute pulmonary hemorrhage/hemosiderosis described in this report exceed the number expected at this hospital during a 2-year period. Massive acute pulmonary hemorrhage occurs rarely in infants; it usually is attributed to cardiac or vascular malformations, infectious processes, immune vasculitides, trauma, or known milk protein allergies. Cases for which the etiology is undetermined, such as these eight reported from Cleveland, traditionally have been classified as idiopathic pulmonary hemosiderosis (IPH) and account for less than 5% of all cases of pulmonary hemorrhage during infancy.

The pathologic mechanism for IPH in children is unknown. Recent histomorphologic techniques suggest that the initial histopathologic damage occurs at the alveolar epithelial surface (*1*). IPH has been associated with circulating antibodies to cow's milk protein; however, this association has not been consistently reproduced (*1,2*). In addition, some reports have described familial occurrences of pulmonary hemosiderosis, suggesting a possible genetic vulnerability to a toxicant (*3,4*).

To identify additional cases of acute pulmonary hemorrhage/hemosiderosis, CDC has established the following provisional surveillance case definition: hemoptysis in an infant aged <1 year not attributed to cardiac or vascular malformations, infectious

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processes, or trauma. A case report form is available from CDC. Physicians should report possible cases through state health departments to CDC's Air Pollution and Respiratory Health Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health; Internet: rae1@cehdeh1.em.cdc.gov; telephone (404) 488-7320; or fax (404) 488-7335.

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Epidemiologic Notes and Reports

Injuries Among Construction Workers During the Raising of Wood-Framed Walls — Colorado and California

In Colorado, traumatic spinal cord injuries that produce documentable motor, sensory, bowel, and/or bladder impairments must be reported to the state or local health department. Persons with such injuries are interviewed by staff of the Colorado Department of Public Health and Environment (CDPHE) Spinal Cord Injury Early Notification System (ENS)*; injuries that occur in workplaces are investigated by staff of the CDPHE Sentinel Event Notification System for Occupational Risk (SENSOR) program†. This report describes the investigation of a construction-related spinal cord injury reported to the CDPHE SENSOR program on February 8, 1993, and summarizes information about a similar case in California.

On February 1, 1993, the construction worker sustained a spinal cord injury—which resulted in permanent paraplegia—while attempting to raise a preconstructed wood-framed wall of a single-family house. A crew of three workers was using a standard procedure that consisted of laying the wall on the ground and "walking it up" to a vertical orientation. The wall was approximately 18 feet wide and 25 feet high at the center peak. During the procedure, two workers were positioned at the outer edges of the wall and one in the center. As the workers were raising the wall, they realized it was too heavy for them to control, possibly because it had become wet from snow that had accumulated on it during the previous evening. While the crew was attempting to lower the wall back to a horizontal orientation, the weight of the wall shifted; the crew lost control of the wall, and it fell to the ground. The worker in the center could

*Colorado is one of 21 states with spinal cord injury registries. Colorado's registry, the ENS, begun in January 1986, is a collaborative project between the Rocky Mountain Regional Spinal Injury System and the CDPHE and is funded through a National Institute on Disability, Rehabilitation, and Research grant and a cooperative agreement with CDC.

†During 1987–1992, CDC funded SENSOR projects in 10 states to develop state-based capacity for recognizing, reporting, investigating, and preventing selected occupational disorders. These 10 states and four additional states received renewed SENSOR funding in 1992.

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not escape the falling wall and was trapped under it, sustaining a fracture dislocation of the seventh thoracic vertebra and spinal cord injury.

During the investigation of this injury, Colorado SENSOR staff determined that the building technique used in this incident is common in the construction industry and that many companies employ similar practices for raising prefabricated walls. Colorado SENSOR staff learned of a similar incident that had occurred in California and resulted in a permanently disabling spinal cord injury. In that incident, an unspecified number of workers were raising a 19 x 17½-foot rain-soaked wood-framed wall with an attached chimney chase. As the workers attempted to lift the wall, the base slipped forward, causing the wall to fall back toward the workers. Although most of the workers were able to clear the area before the wall collapsed, three were pinned beneath the wall as it fell. One of the three sustained fracture dislocations of the T12 and L1 vertebrae, spinal cord injury, and subsequent permanent paralysis.

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Editorial Note: The estimated annual incidence of acute traumatic spinal cord injury in the United States ranges from 28 to 50 injuries per million persons (*1*)[§]. During 1988 (the most recent year for which national published data are available), the estimated prevalence of spinal cord injuries that resulted in paraplegia and quadriplegia was approximately 177,000 (*2*). Most injuries (61%) occurred in persons aged 16–30 years (*3*). During 1988, the estimated total cost of spinal cord injuries in the United States was $5.6 billion: $3.4 billion in direct costs (i.e., hospitalization and other medical care, home modifications, equipment, and pharmaceuticals) and $2.2 billion in indirect costs (i.e., the value of productivity lost to society) (*2*).

During January 1989–December 1992, the average annual rate for spinal cord injury in Colorado ranged from 34 to 43 cases per 1 million population (mean: 37) (*4*). Of the 506 spinal cord injury cases reported in Colorado during this period, 51 (10%) occurred on the job (*4*), including 14 (27%) among workers in the construction industry.

The California Occupational Safety and Health Standards Board has promulgated regulations for the raising of wood-framed walls at construction sites. The regulation requires that temporary restraints (e.g., cleats on the foundation or floor, or straps on the wall bottom plate) be used when raising wood-framed walls measuring 10 or more feet to prevent inadvertent sliding or uplift of the bottom plate; anchor bolts cannot be used to brace such walls. Compliance with the procedures outlined in this standard—if it had been in effect—may have prevented the incidents in both California and Colorado.

Securing the base of a wall being raised manually is an important measure for reducing some risks associated with raising wood-framed walls. Other measures include 1) establishing industry guidelines that classify size categories of walls according to linear feet of wood in the wall, specify the personnel or equipment required for raising each category of wall, and provide an upper limit beyond which cranes or

[§]The range in estimated incidence rates reflects differences in case definitions. Some studies, for example, include hospital admissions only, which exclude acute fatal injuries.

Construction Work Injuries — Continued

boom trucks must be used to raise the wall; 2) using pulley systems or hydraulic jacks to raise walls; 3) developing a bracing system to arrest the fall of a wall; and 4) establishing and enforcing company and industry policies that prohibit raising of wet wood-framed walls unless additional employees or other raising techniques are used.

To further characterize incidents similar to those described in this report and to assist in developing prevention measures, information about other injuries that have resulted from raising wood-framed walls in construction operations should be reported to Acting Chief, Injury Surveillance Section, Surveillance and Field Investigation Branch, Division of Safety Research, National Institute for Occupational Safety and Health; telephone (304) 285-5916.

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International Notes

Progress Toward the Global Elimination of Neonatal Tetanus, 1989–1993

Neonatal tetanus (NT) is a leading cause of neonatal mortality in many parts of the world. During the 1980s, NT accounted for half of all neonatal deaths and one fourth of all infant mortality in some countries (*1*). In addition, in 1993, an estimated 515,000 neonatal deaths were caused by NT* (*2*) for a global mortality rate of 4.1 per 1000 live births. In 1989, the World Health Organization (WHO) adopted a resolution to eliminate NT worldwide (*3*), and in 1990, the World Summit for Children issued a declaration for global elimination of NT by the end of 1995 (*4*). In 1993, WHO's goal was defined as the elimination of NT as a public health problem by reducing its incidence to less than one case per 1000 live births for each health district (*2*) (baseline: in 1988, a total of 32,454 NT cases were reported to WHO and an estimated 787,000 NT deaths occurred; the global NT mortality rate was 6.5 cases per 1000 live births [*5*])†. To achieve and maintain NT elimination, 80% or more of infants need to be protected at birth through vaccination of their mothers with at least two doses of tetanus toxoid (TT2+) or through clean delivery and cord-care practices (*2*). In addition, effective surveillance

*Estimates of NT deaths are derived from national mortality data, NT mortality rates from NT surveys, or in the absence of surveys, by assuming that rates are similar for countries with similar socioeconomic conditions and from tetanus toxoid coverage levels.

†Because the case-fatality rate for NT is high (100% in some countries), WHO estimates only the number of deaths for NT, not number of cases.

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systems must be developed to detect NT cases and enable timely investigation of them. This report, which is based on data from WHO, presents reported coverage with TT2+ in developing countries[§] only and reported number of NT cases and estimated number of NT deaths in all countries, and summarizes progress toward the global elimination of NT during 1989–1993 (WHO, unpublished data, 1994).

Global. From 1989 to 1993, vaccination coverage with TT2+ among pregnant women increased from 27% to 45% (Figure 1). During the same period, the number of NT cases reported to WHO decreased from 29,494 in 1989 to 14,232 in 1993. However, only 2%–5% of all NT cases were reported (*2*). Of the estimated 515,000 deaths worldwide, approximately 80% occurred in 12 countries (Table 1). Most deaths (34.2%) occurred in the Southeast Asian Region (Table 2). Overall, an estimated 724,300 deaths attributable to NT were prevented[¶] in 1993 by vaccination with tetanus toxoid. Of the 156 countries reporting NT incidence to WHO in 1993, a total of 79 (51%) reported zero cases. In 1993, a total of 66% of live births occurred in areas with NT surveillance, compared with 39% in 1985 and 73% in 1989.

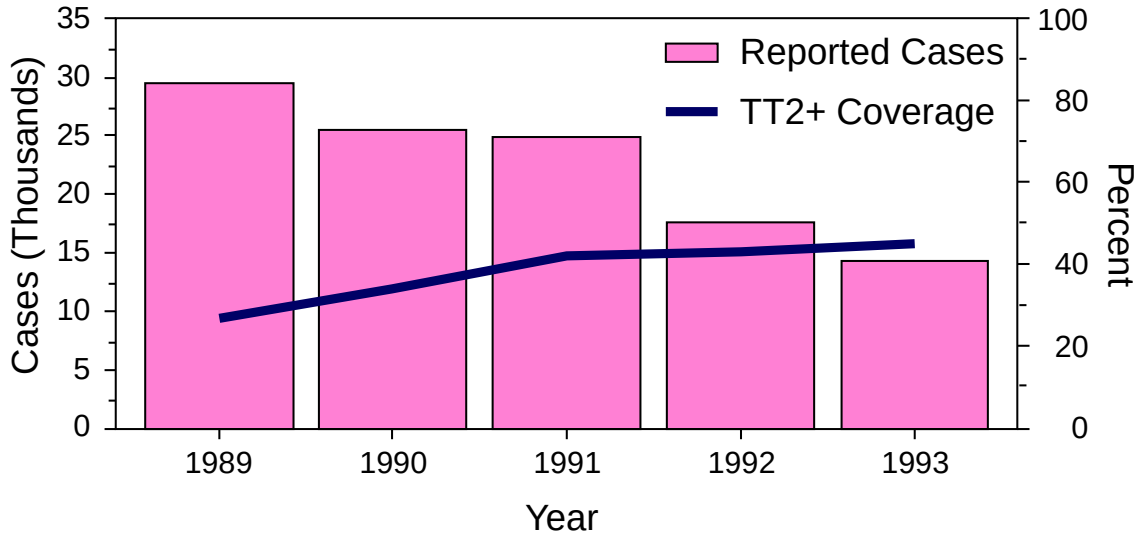
African Region. Coverage with TT2+ increased from 25% in 1989 to 40% in 1993. In 1993, a total of 3461 cases (24% of the global total) were reported, compared with 7299 cases in 1989. Of the 47 countries in the region, 36 (77%) reported NT incidence to WHO for 1993; of these, four reported zero cases.

Region of the Americas. From 1989 through 1993, TT2+ coverage increased from 29% to 40% in the Region of the Americas, where major efforts were undertaken to

[§]Countries are categorized as developing based on criteria developed by the United Nations and used by WHO for analytic purposes only.

[¶]The number of NT deaths prevented was calculated for each country using the number of live births, NT mortality rate, and tetanus toxoid coverage and efficacy.

FIGURE 1. Number of reported neonatal tetanus cases and reported vaccination coverage with two or more doses of tetanus toxoid (TT2+)* among pregnant women, by year — worldwide, 1989–1993



*In developing countries only.

Source: Global Program for Vaccines and Immunization, World Health Organization, 1994.

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vaccinate women of childbearing age in high-risk areas. Reported cases decreased from 1430 in 1989 to 708 (5% of the global total) in 1993; Brazil reported 216 cases (31% of the regional total for 1993). Of the 47 countries in the region, 40 (85%) reported NT incidence to WHO for 1993; of these, 25 reported zero cases.

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TABLE 1. Number of reported cases of neonatal tetanus (NT), estimated number of NT deaths* and NT deaths that were prevented†, and percentage of pregnant women who had received two or more doses of tetanus toxoid (TT2+) among the 12 countries that represent 80% of NT deaths worldwide, 1993

Country	No. reported cases	Estimated no. deaths	Estimated no. prevented deaths	TT2+ coverage (%) among pregnant women
India	4,339	101,000	289,700	78
China	NA§	98,000	1,900	2
Pakistan	1,685	44,000	34,000	46
Nigeria	1,984	39,000	17,700	33
Bangladesh	720	30,000	144,700	73
Indonesia	566	28,000	49,200	67
Ethiopia	NA	23,000	3,300	13
Zaire	90	13,000	4,900	29
Nepal	20	10,000	1,300	12
Somalia	NA	10,000	500	5
Sudan	71	9,000	800	9
Ghana	8	6,000	900	14

*Estimates of NT deaths are derived from national mortality data, NT mortality rates from NT surveys, or in the absence of surveys, by assuming that rates are similar for countries with similar socioeconomic conditions and from tetanus toxoid coverage levels.
†The number of prevented NT deaths was calculated for each country using number of live births, NT mortality rate, and tetanus toxoid coverage and efficacy.
§Not available.

Source: Global Program for Vaccines and Immunization, World Health Organization, 1994.

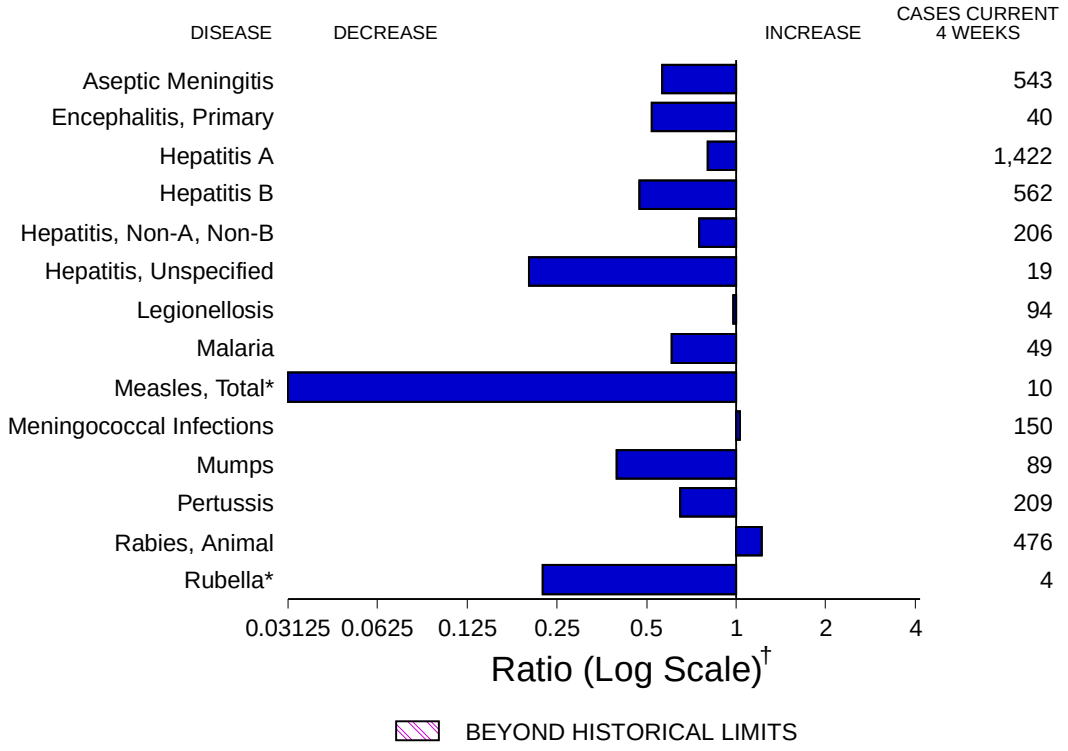
TABLE 2. Estimated number of deaths* attributable to neonatal tetanus (NT), by region — worldwide, 1993

Region	Estimated no. deaths	(%)†
Southeast Asian	176,000	(34.2%)
African	145,000	(28.2%)
Western Pacific§	110,000	(21.4%)
Eastern Mediterranean	80,700	(15.7%)
Region of the Americas	2,000	(0.4%)
European¶	1,300	(0.3%)
Total	**515,000**	**(100.0%)**

*Estimates of NT deaths are derived from national mortality data, NT mortality rates from NT surveys, or in the absence of surveys, by assuming that rates are similar for countries with similar socioeconomic conditions and from tetanus toxoid coverage levels.
†Percentages do not total 100 because of rounding.
§Includes China, which began administering tetanus toxoid in selected areas in 1992.
¶In this region, only Turkey routinely reports tetanus toxoid coverage to WHO.

Source: Global Program for Vaccines and Immunization, World Health Organization, 1994.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending December 3, 1994, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total), and rubella reflect dramatic fluctuations in the historical baseline. (Ratio (log scale) for week 48 measles (total) and rubella are 0.03125 and 0.22388 respectively).

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

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending December 3, 1994 (48th Week)

	Cum. 1994		Cum. 1994
AIDS*	72,888	Measles: imported	183
Anthrax	-	indigenous	691
Botulism: Foodborne	58	Plague	14
Infant	73	Poliomyelitis, Paralytic§	1
Other	7	Psittacosis	38
Brucellosis	82	Rabies, human	2
Cholera	31	Syphilis, primary & secondary	18,751
Congenital rubella syndrome	6	Syphilis, congenital, age < 1 year¶	1,123
Diphtheria	1	Tetanus	34
Encephalitis, post-infectious	98	Toxic shock syndrome	167
Gonorrhea	362,700	Trichinosis	32
Haemophilus influenzae (invasive disease)†	1,042	Tuberculosis	20,245
Hansen Disease	109	Tularemia	81
Leptospirosis	34	Typhoid fever	384
Lyme Disease	10,624	Typhus fever, tickborne (RMSF)	422

*Updated monthly to the Division of HIV/AIDS, National Center for Infectious Diseases; last update November 29, 1994.
†Of 992 cases of known age, 280 (28%) were reported among children less than 5 years of age.
§This case was vaccine-associated. The remaining 6 suspected cases with onset in 1994 have not yet been confirmed.
¶Total reported to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, through second quarter 1994.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending December 3, 1994, and December 4, 1993 (48th Week)

Reporting Area	AIDS*	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	72,888	7,456	612	98	362,700	367,646	20,982	10,482	3,933	382	1,447	10,624
NEW ENGLAND	2,589	291	19	4	7,634	7,248	273	303	121	15	75	2,507
Maine	79	31	5	-	85	74	24	11	-	-	5	27
N.H.	60	32	-	2	102	65	15	21	8	-	-	30
Vt.	34	36	3	-	34	23	12	-	-	-	-	13
Mass.	1,309	82	9	1	3,012	2,914	101	174	93	13	59	241
R.I.	241	110	2	1	443	397	25	8	20	2	11	469
Conn.	866	-	-	-	3,958	3,775	96	89	-	-	-	1,727
MID. ATLANTIC	21,304	871	56	18	40,135	43,704	1,526	1,349	419	8	238	6,653
Upstate N.Y.	2,006	426	32	3	9,782	9,796	506	364	211	4	58	4,125
N.Y. City	12,177	135	7	5	13,984	11,403	607	344	4	-	10	28
N.J.	4,655	-	-	-	4,530	5,557	248	324	170	-	38	1,245
Pa.	2,466	310	17	10	11,839	16,948	165	317	34	4	132	1,255
E.N. CENTRAL	5,883	1,420	152	22	70,062	77,501	2,225	1,036	287	12	429	130
Ohio	1,095	364	54	4	20,225	20,819	998	154	23	-	191	74
Ind.	589	194	11	1	8,484	7,970	346	171	10	-	104	14
Ill.	2,896	358	50	5	17,879	26,030	428	216	61	5	30	11
Mich.	960	497	33	12	16,942	16,561	295	373	190	7	75	31
Wis.	343	7	4	-	6,532	6,121	158	122	3	-	29	-
W.N. CENTRAL	1,502	406	32	8	20,590	20,120	1,058	589	102	12	88	256
Minn.	375	25	4	-	3,325	2,262	221	59	21	1	2	165
Iowa	96	112	1	1	1,442	1,508	58	25	13	11	30	16
Mo.	671	150	7	4	11,147	12,206	523	446	39	-	35	61
N. Dak.	22	12	4	-	18	51	5	-	-	-	4	-
S. Dak.	15	2	4	-	190	243	35	2	-	-	1	-
Nebr.	84	36	5	3	1,060	484	118	28	14	-	10	2
Kans.	239	69	7	-	3,408	3,366	98	29	15	-	6	12
S. ATLANTIC	17,469	1,445	142	28	102,190	92,211	1,353	2,114	595	50	331	819
Del.	247	37	1	-	1,841	1,417	17	5	1	-	26	78
Md.	2,526	233	21	4	16,730	15,117	192	378	31	16	87	362
D.C.	1,325	53	-	1	6,572	5,000	26	54	1	-	10	9
Va.	1,089	301	30	6	12,417	10,799	175	124	25	10	12	127
W. Va.	76	37	49	-	758	606	21	44	41	-	4	26
N.C.	1,152	217	40	1	26,330	23,213	139	259	53	-	27	77
S.C.	1,088	30	-	-	12,171	9,800	39	32	10	-	16	7
Ga.	2,071	49	1	-	3,328	4,660	33	531	184	-	99	106
Fla.	7,895	488	-	16	22,043	21,599	711	687	249	24	50	27
E.S. CENTRAL	1,942	488	37	3	42,824	42,131	608	1,086	842	2	70	42
Ky.	296	165	15	1	4,793	4,632	152	69	30	-	9	23
Tenn.	693	116	12	-	14,005	13,166	275	936	793	1	43	13
Ala.	554	157	7	1	13,604	14,796	110	81	19	1	13	6
Miss.	399	50	3	1	10,422	9,537	71	-	-	-	5	-
W.S. CENTRAL	6,982	823	48	2	43,917	41,357	3,045	1,423	565	71	42	123
Ark.	255	47	-	-	6,095	7,030	182	24	7	2	9	8
La.	1,146	32	7	-	11,092	11,139	140	154	167	1	13	2
Okla.	244	-	-	-	3,259	4,339	356	297	326	3	11	73
Tex.	5,337	744	41	2	23,471	18,849	2,367	948	65	65	9	40
MOUNTAIN	2,107	333	12	4	9,019	10,555	4,057	593	423	57	96	19
Mont.	26	8	-	-	84	84	23	22	13	-	16	-
Idaho	56	6	-	-	81	163	351	71	67	1	2	3
Wyo.	18	4	2	2	82	75	29	23	164	-	6	5
Colo.	763	132	3	-	2,973	3,524	554	94	69	16	20	-
N. Mex.	198	18	-	-	1,002	890	1,048	202	46	11	4	8
Ariz.	559	69	1	1	2,977	3,671	1,265	50	16	11	17	-
Utah	131	53	2	1	231	400	558	76	30	5	7	2
Nev.	356	43	4	-	1,589	1,748	229	55	18	13	24	1
PACIFIC	13,110	1,379	114	9	26,329	32,819	6,837	1,989	579	155	78	75
Wash.	856	-	-	-	2,679	3,432	324	69	68	2	8	-
Oreg.	550	-	-	-	570	1,090	708	79	17	1	-	-
Calif.	11,481	1,234	111	8	21,686	27,155	5,550	1,804	489	149	66	75
Alaska	40	18	3	-	808	578	199	11	-	-	-	-
Hawaii	183	127	-	1	586	564	56	26	5	3	4	-
Guam	1	22	-	-	197	95	44	6	1	12	3	-
P.R.	2,159	38	1	3	425	463	83	349	162	11	-	-
V.I.	49	-	-	-	41	90	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	31	40	8	-	-	-	-	-
C.N.M.I.	-	-	-	-	45	77	7	1	-	-	-	-

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

*Updated monthly to the Division of HIV/AIDS, National Center for Infectious Diseases; last update November 29, 1994.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending December 3, 1994, and December 4, 1993 (48th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	1994	Cum. 1994	Cum. 1993
UNITED STATES	960	-	691	-	183	302	2,417	23	1,300	60	3,221	5,828	2	216	177
NEW ENGLAND	76	-	14	-	14	63	130	5	25	42	402	726	2	131	2
Maine	6	-	1	-	4	1	21	-	3	-	18	18	-	-	1
N.H.	3	-	1	-	-	2	6	-	4	-	75	154	-	-	-
Vt.	3	-	2	-	1	31	4	-	-	-	41	91	-	-	-
Mass.	33	-	2	-	6	18	57	-	3	38	223	377	1	125	1
R.I.	9	-	4	-	3	2	-	-	3	-	6	11	-	3	-
Conn.	22	-	4	-	-	9	42	5	12	4	39	75	1	3	-
MID. ATLANTIC	198	-	173	-	33	36	245	2	106	5	586	894	-	11	59
Upstate N.Y.	52	-	13	-	14	8	90	-	32	4	225	318	-	8	17
N.Y. City	70	-	11	-	3	18	11	-	13	-	157	85	-	1	22
N.J.	46	-	144	-	12	10	53	-	6	-	11	81	-	2	15
Pa.	30	-	5	-	4	-	91	2	55	1	193	410	-	-	5
E.N. CENTRAL	96	-	58	-	44	31	384	2	230	1	393	1,468	-	11	8
Ohio	15	-	15	-	2	9	108	1	69	-	146	426	-	-	1
Ind.	14	-	-	-	1	1	74	-	7	-	61	155	-	-	3
Ill.	39	-	17	-	39	9	113	-	95	-	88	417	-	3	1
Mich.	26	-	23	-	2	6	55	1	45	1	48	113	-	8	2
Wis.	2	-	3	-	-	6	34	-	14	-	50	357	-	-	1
W.N. CENTRAL	45	-	126	-	44	3	171	1	65	4	200	531	-	2	1
Minn.	14	-	-	-	-	-	18	-	5	-	87	309	-	-	-
Iowa	5	-	6	-	1	-	19	-	16	2	21	37	-	-	-
Mo.	13	-	118	-	42	1	87	1	38	-	44	138	-	2	1
N. Dak.	1	-	-	-	-	-	1	-	5	-	4	5	-	-	-
S. Dak.	-	-	-	-	-	-	9	-	-	2	22	8	-	-	-
Nebr.	5	-	1	-	1	-	13	-	1	-	9	14	-	-	-
Kans.	7	-	1	-	-	2	24	-	-	-	13	20	-	-	-
S. ATLANTIC	219	-	59	-	8	29	409	5	194	4	294	590	-	11	7
Del.	3	-	-	-	-	-	5	-	-	-	3	10	-	-	-
Md.	99	-	2	-	2	4	40	2	65	-	74	129	-	-	3
D.C.	14	-	-	-	-	-	6	-	-	2	10	14	-	-	-
Va.	36	-	1	-	2	4	66	1	42	-	36	59	-	-	-
W. Va.	-	-	36	-	-	-	12	-	3	1	5	8	-	-	-
N.C.	11	-	2	-	1	1	51	-	36	-	79	151	-	-	-
S.C.	5	-	-	-	-	-	31	-	8	1	14	70	-	-	-
Ga.	26	-	3	-	-	-	68	-	9	-	27	53	-	2	-
Fla.	25	-	15	-	3	20	130	2	31	-	46	96	-	9	4
E.S. CENTRAL	32	-	28	-	-	1	144	2	28	-	122	272	-	-	1
Ky.	12	-	-	-	-	-	36	-	-	-	59	36	-	-	1
Tenn.	10	-	28	-	-	-	35	-	9	-	22	166	-	-	-
Ala.	9	-	-	-	-	1	73	2	12	-	34	60	-	-	-
Miss.	1	-	-	-	-	-	-	-	7	-	7	10	-	-	-
W.S. CENTRAL	42	-	11	-	8	10	306	4	247	-	185	155	-	13	18
Ark.	3	-	-	-	1	-	43	-	5	-	27	12	-	-	-
La.	9	-	-	-	1	1	37	-	31	-	10	13	-	-	1
Okla.	7	-	-	-	-	-	33	-	23	-	27	78	-	4	1
Tex.	23	-	11	-	6	9	193	4	188	-	121	52	-	9	16
MOUNTAIN	34	-	150	-	17	7	161	1	147	4	402	418	-	5	11
Mont.	-	-	-	-	-	-	6	-	-	-	9	11	-	-	-
Idaho	2	-	1	-	-	-	17	-	10	3	80	98	-	-	2
Wyo.	1	-	-	-	-	-	9	-	3	-	-	1	-	-	-
Colo.	15	-	16	-	3	3	35	-	3	-	124	174	-	-	2
N. Mex.	3	-	-	-	-	-	15	N	N	1	32	39	-	-	-
Ariz.	7	-	2	-	1	3	48	1	91	-	130	54	-	-	2
Utah	4	-	131	-	2	-	19	-	24	-	24	36	-	4	4
Nev.	2	-	-	-	11	1	12	-	15	-	3	5	-	1	1
PACIFIC	218	-	72	-	15	122	467	1	258	-	637	774	-	32	70
Wash.	12	-	-	-	-	-	30	1	8	-	32	74	-	-	-
Oreg.	13	U	-	U	2	4	94	N	N	U	38	102	U	3	-
Calif.	177	-	56	-	9	96	334	-	228	-	545	584	-	24	41
Alaska	2	-	16	-	-	2	3	-	4	-	1	5	-	1	1
Hawaii	14	-	-	-	4	20	6	-	18	-	21	9	-	4	28
Guam	4	U	211	U	-	12	1	U	6	U	2	-	U	1	-
P.R.	3	-	13	-	-	354	15	-	2	1	2	10	-	-	-
V.I.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	1	U	2	2	U	-	-
C.N.M.I.	1	U	26	U	-	28	-	U	2	U	-	1	U	-	-

*For measles only, imported cases include 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 December 3, 1994, and December 4, 1993 (48th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	18,751	24,389	167	20,245	20,846	81	384	422	6,884
NEW ENGLAND	206	334	4	468	479	1	21	15	1,769
Maine	4	7	1	27	25	-	-	-	-
N.H.	4	25	-	15	17	-	-	-	195
Vt.	-	1	1	8	5	-	-	-	137
Mass.	87	117	2	243	262	1	17	7	686
R.I.	15	15	-	44	52	-	1	-	44
Conn.	96	169	-	131	118	-	3	8	707
MID. ATLANTIC	1,293	2,245	27	4,087	4,485	1	106	18	1,759
Upstate N.Y.	160	237	14	473	643	1	12	6	1,264
N.Y. City	555	1,116	-	2,398	2,502	-	70	1	-
N.J.	217	288	-	740	762	-	18	4	261
Pa.	361	604	13	476	578	-	6	7	234
E.N. CENTRAL	2,582	3,915	32	1,966	2,156	8	71	45	64
Ohio	1,039	1,101	7	309	290	1	7	28	4
Ind.	237	345	2	178	208	2	7	5	13
Ill.	738	1,464	11	1,002	1,136	3	44	10	19
Mich.	278	533	12	424	434	1	6	2	13
Wis.	290	472	-	53	88	1	7	-	15
W.N. CENTRAL	1,081	1,519	26	516	460	37	1	38	205
Minn.	48	56	1	121	62	1	-	-	17
Iowa	65	64	8	56	53	-	-	1	83
Mo.	904	1,273	7	223	227	23	1	19	26
N. Dak.	-	4	1	8	7	1	-	-	12
S. Dak.	1	2	-	24	14	2	-	13	33
Nebr.	11	10	4	17	23	3	-	1	-
Kans.	52	110	5	67	74	7	-	4	34
S. ATLANTIC	5,024	6,080	8	3,644	4,168	2	46	202	1,843
Del.	25	90	-	40	47	-	1	-	41
Md.	290	341	-	312	360	1	13	23	489
D.C.	199	308	-	105	148	-	1	-	2
Va.	750	623	1	292	402	-	8	19	401
W. Va.	9	12	-	73	70	-	-	2	73
N.C.	1,536	1,758	1	461	499	-	-	81	159
S.C.	745	869	-	340	359	-	-	18	169
Ga.	764	1,014	1	612	708	1	2	55	348
Fla.	706	1,065	5	1,409	1,575	-	21	4	161
E.S. CENTRAL	3,641	3,797	6	1,307	1,511	2	3	43	211
Ky.	203	322	2	295	338	2	1	9	23
Tenn.	958	1,084	3	401	479	-	2	28	71
Ala.	603	793	1	400	462	-	-	2	117
Miss.	1,877	1,598	-	211	232	-	-	4	-
W.S. CENTRAL	4,057	5,101	2	2,929	2,427	17	15	47	640
Ark.	431	530	-	254	159	16	-	8	25
La.	1,577	2,399	-	349	276	-	3	-	69
Okla.	111	261	2	232	154	1	3	32	38
Tex.	1,938	1,911	-	2,094	1,838	-	9	7	508
MOUNTAIN	217	229	10	464	512	9	11	14	134
Mont.	4	1	-	9	13	3	-	4	21
Idaho	1	-	3	11	12	-	-	-	3
Wyo.	2	8	-	8	6	-	-	2	19
Colo.	114	74	5	21	79	1	3	4	15
N. Mex.	19	24	-	65	59	1	1	2	8
Ariz.	39	94	-	209	222	-	2	1	45
Utah	8	11	2	41	30	2	2	-	13
Nev.	30	17	-	100	91	2	3	1	10
PACIFIC	650	1,169	52	4,864	4,648	4	110	-	259
Wash.	32	55	3	241	246	-	4	-	-
Oreg.	21	39	-	90	-	2	5	-	12
Calif.	590	1,061	45	4,239	4,114	1	96	-	217
Alaska	4	8	-	60	53	1	-	-	30
Hawaii	3	6	4	234	235	-	5	-	-
Guam	10	3	-	170	65	-	1	-	-
P.R.	278	468	-	159	213	-	-	-	59
V.I.	28	39	-	-	2	-	-	-	-
Amer. Samoa	1	-	-	4	4	-	1	-	-
C.N.M.I.	2	7	-	33	40	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending December 3, 1994 (48th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	698	458	131	69	21	19	55
Boston, Mass.	204	123	43	19	11	8	15
Bridgeport, Conn.	63	46	9	4	2	2	3
Cambridge, Mass.	26	19	4	3	-	-	3
Fall River, Mass.	15	12	1	2	-	-	-
Hartford, Conn.	60	31	15	12	-	2	1
Lowell, Mass.	23	23	-	-	-	-	2
Lynn, Mass.	20	15	3	2	-	-	1
New Bedford, Mass.	25	19	2	3	-	1	2
New Haven, Conn.	42	24	10	4	2	2	2
Providence, R.I.	55	36	12	3	3	1	7
Somerville, Mass.	8	7	1	-	-	-	-
Springfield, Mass.	45	33	6	4	-	2	2
Waterbury, Conn.	29	19	6	4	-	-	-
Worcester, Mass.	83	51	19	9	3	1	17
MID. ATLANTIC	2,610	1,736	492	273	53	56	140
Albany, N.Y.	51	36	8	2	2	3	3
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	92	87	2	2	-	1	23
Camden, N.J.	36	24	6	3	2	1	3
Elizabeth, N.J.	25	15	5	4	1	-	3
Erie, Pa.§	62	47	12	1	1	1	3
Jersey City, N.J.	41	21	13	5	1	1	-
New York City, N.Y.	1,444	947	271	172	25	29	48
Newark, N.J.	75	29	25	15	2	4	10
Paterson, N.J.	40	23	9	4	1	3	3
Philadelphia, Pa.	295	171	75	34	10	5	21
Pittsburgh, Pa.§	67	51	11	3	1	1	1
Reading, Pa.	18	16	1	1	-	-	2
Rochester, N.Y.	179	133	22	15	4	5	10
Schenectady, N.Y.	25	17	6	2	-	-	1
Scranton, Pa.§	35	27	6	1	-	1	3
Syracuse, N.Y.	73	54	11	5	3	-	3
Trenton, N.J.	31	22	6	3	-	-	3
Utica, N.Y.	21	16	3	1	-	1	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,331	1,472	455	230	114	60	131
Akron, Ohio	90	56	23	6	1	4	-
Canton, Ohio	39	32	4	3	-	-	3
Chicago, Ill.	420	190	79	73	68	10	9
Cincinnati, Ohio	116	77	24	7	1	7	17
Cleveland, Ohio	148	85	31	16	8	8	3
Columbus, Ohio	190	126	41	16	5	2	14
Dayton, Ohio	150	108	31	8	2	1	6
Detroit, Mich.	297	175	67	39	8	8	9
Evansville, Ind.	32	22	8	2	-	-	-
Fort Wayne, Ind.	59	46	8	4	1	-	3
Gary, Ind.	23	13	3	2	5	-	-
Grand Rapids, Mich.	106	82	13	7	1	3	15
Indianapolis, Ind.	227	150	44	17	5	11	12
Madison, Wis.	65	46	10	7	1	1	8
Milwaukee, Wis.	U	U	U	U	U	U	U
Peoria, Ill.	51	35	10	3	2	1	9
Rockford, Ill.	89	59	18	9	3	-	6
South Bend, Ind.	61	50	4	3	2	2	7
Toledo, Ohio	88	62	20	3	1	2	9
Youngstown, Ohio	80	58	17	5	-	-	1
W.N. CENTRAL	958	668	135	74	32	28	59
Des Moines, Iowa	91	66	17	4	-	3	1
Duluth, Minn.	22	18	3	-	1	-	1
Kansas City, Kans.	49	25	9	8	5	1	-
Kansas City, Mo.	89	51	14	1	2	2	8
Lincoln, Nebr.	40	27	3	3	4	3	5
Minneapolis, Minn.	303	227	43	19	5	9	20
Omaha, Nebr.	69	48	10	8	2	1	5
St. Louis, Mo.	159	107	23	16	7	6	14
St. Paul, Minn.	74	56	9	6	1	2	5
Wichita, Kans.	62	43	4	9	5	1	-
S. ATLANTIC	1,461	904	293	197	39	27	81
Atlanta, Ga.	138	79	32	23	3	1	6
Baltimore, Md.	264	155	50	40	9	10	17
Charlotte, N.C.	134	85	28	18	2	1	7
Jacksonville, Fla.	149	100	31	17	1	-	14
Miami, Fla.	92	53	19	16	1	3	-
Norfolk, Va.	67	49	11	2	2	3	7
Richmond, Va.	113	75	28	6	3	-	6
Savannah, Ga.	47	31	10	6	-	-	5
St. Petersburg, Fla.	62	43	8	7	4	-	4
Tampa, Fla.	187	130	29	13	11	4	14
Washington, D.C.	196	96	45	47	3	5	-
Wilmington, Del.	12	8	2	2	-	-	1
E.S. CENTRAL	689	458	131	60	23	17	45
Birmingham, Ala.	114	78	22	9	1	4	2
Chattanooga, Tenn.	94	67	14	7	4	2	5
Knoxville, Tenn.	49	30	12	6	1	-	5
Lexington, Ky.	64	45	13	5	1	-	8
Memphis, Tenn.	108	69	21	10	5	3	6
Mobile, Ala.	35	23	6	3	2	1	1
Montgomery, Ala.	61	48	7	4	2	-	4
Nashville, Tenn.	164	98	36	16	7	7	14
W.S. CENTRAL	1,618	1,018	318	159	74	49	88
Austin, Tex.	79	44	20	8	5	2	3
Baton Rouge, La.	55	37	16	1	1	-	3
Corpus Christi, Tex.	56	37	9	4	3	3	-
Dallas, Tex.	237	149	47	27	7	7	5
El Paso, Tex.	67	54	8	2	1	2	7
Ft. Worth, Tex.	106	66	24	11	2	3	5
Houston, Tex.	447	272	92	56	14	13	39
Little Rock, Ark.	79	51	18	3	2	5	3
New Orleans, La.	100	45	9	15	24	7	-
San Antonio, Tex.	213	140	47	14	7	5	17
Shreveport, La.	59	39	11	7	1	1	3
Tulsa, Okla.	120	84	17	11	7	1	3
MOUNTAIN	967	681	153	80	31	22	68
Albuquerque, N.M.	126	84	19	13	7	3	5
Colo. Springs, Colo.	45	30	10	3	1	1	3
Denver, Colo.	140	92	25	11	7	5	14
Las Vegas, Nev.	212	154	41	12	3	2	13
Ogden, Utah	29	28	-	1	-	-	1
Phoenix, Ariz.	181	126	25	19	3	8	16
Pueblo, Colo.	U	U	U	U	U	U	U
Salt Lake City, Utah	104	71	12	15	4	2	10
Tucson, Ariz.	130	96	21	6	6	1	6
PACIFIC	1,867	1,273	292	182	55	35	164
Berkeley, Calif.	22	16	2	2	-	2	2
Fresno, Calif.	120	74	21	14	5	6	16
Glendale, Calif.	19	14	3	2	-	-	1
Honolulu, Hawaii	55	33	11	5	5	1	10
Long Beach, Calif.	102	71	15	7	3	6	18
Los Angeles, Calif.	508	326	81	67	22	-	22
Pasadena, Calif.	42	34	5	2	-	1	4
Portland, Oreg.	169	127	20	16	3	3	4
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	U	U	U	U	U	U	U
San Francisco, Calif.	199	126	27	24	2	2	28
San Jose, Calif.	231	164	38	17	7	5	27
Santa Cruz, Calif.	39	30	6	3	-	-	7
Seattle, Wash.	169	119	25	14	5	6	7
Spokane, Wash.	63	47	11	3	-	2	5
Tacoma, Wash.	129	92	27	6	3	1	13
TOTAL	13,199¶	8,668	2,400	1,324	442	313	831

*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.

U: Unavailable.

Neonatal Tetanus — Continued

Eastern Mediterranean Region. Coverage with TT2+ increased from 31% in 1989 to 50% in 1993. The number of reported cases decreased from 6314 in 1989 to 3350 (24% of the global total) in 1993. Of the 23 countries in the region, 21 (91%) reported NT incidence to WHO for 1993; of these, 10 reported zero cases.

European Region. In 1993, TT2+ coverage levels of 16% were reported in the European Region, where only Turkey routinely reports tetanus toxoid coverage to WHO. During 1989–1992, 63–67 cases were reported annually. In 1993, a total of 48 NT cases were reported in the region—46 from Turkey. Of the 50 countries in the region, 30 (60%) reported NT incidence to WHO for 1993; of these, 27 reported zero cases.

Southeast Asian Region. In 1993, TT2+ coverage was reported to be 74%. The number of reported cases decreased from 14,102 (48% of the global total) in 1989 to 5809 (40% of the global total) in 1993. Three countries accounted for 97% of all NT cases reported in the region: India (4339 [75%] cases), Bangladesh (720 [12%]), and Indonesia (566 [10%]). Of the 11 countries in the region, 10 (91%) reported NT incidence to WHO for 1993; of these, two reported zero cases.

Western Pacific Region. In 1993, TT2+ coverage was 13% in the Western Pacific Region (including China, which began administering tetanus toxoid in selected areas in 1992). The number of cases reported to WHO increased from 282 in 1989 to 856 (6% of the global total) in 1993. Two countries reported 79% of the total cases for the region: Vietnam (333 cases) and the Philippines (343 cases). Of the 35 countries in the region, 18 (51%) reported NT incidence to WHO for 1993; of these, 11 reported zero cases.

Reported by: Expanded Program on Immunization, Global Program for Vaccines and Immunization, World Health Organization, Geneva. International Health Program Office; National Immunization Program, CDC.

Editorial Note: NT results from the effect of a neurotoxin elaborated by the anaerobic organism *Clostridium tetani* (*6*). Infection occurs when the umbilical cord becomes contaminated as a result of unclean childbirth or cord-care practices. Access to clean birth practices is ultimately the long-term goal for prevention; however, most infants in developing countries continue to be born at home under unsanitary conditions. Although global tetanus toxoid coverage levels nearly doubled to 45% during 1989–1993 in countries that administer the vaccine, reported coverage levels are underestimated because annual estimates do not include doses administered during previous years. In addition, many women do not maintain vaccination records, making verification of vaccination status difficult (*7*). WHO now recommends that women receive and maintain life-long vaccination records and that tetanus toxoid coverage be monitored nationally by determining the proportion of children protected at birth when they seek their first diphtheria and tetanus toxoids and pertussis vaccine dose.

The findings in this report are subject to at least two limitations. First, because NT cases are grossly underreported, NT incidence is underestimated. Second, the numbers of NT deaths and prevented deaths are based on projections from national data (which often are estimated) or data extrapolated from other countries.

As of August 1, 1994, the estimated NT case rate was less than one per 1000 live births nationwide (i.e., not by district) in 83 countries. In addition, in 57 countries, the estimated rate of NT was one to five cases per 1000 nationwide, while in 25 countries the estimated rate was higher than five cases per 1000. Although progress has been made toward eliminating NT as a public health problem, present resources and com-

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mitments must be increased and activities greatly accelerated if the 1995 goal is to be achieved by all countries (*8*). In 1993, the Global Advisory Group of WHO's Expanded Program on Immunization identified four constraints to NT elimination (*2*): 1) insufficient funds to purchase tetanus toxoid in selected high-risk countries; 2) lack of adequate health-care infrastructure in many countries, resulting in limited tetanus toxoid vaccination activities and poor access to clean birth practices; 3) civil unrest in some high-risk countries; and 4) high levels of NT underreporting.

To reach the global elimination goal for NT, efforts must be accelerated, especially in the 12 countries from which 80% of NT cases were reported in 1993 and in countries where the incidence rate is higher than five per 1000 live births. Each country must identify areas where the incidence rate is higher than one per 1000 live births, coverage levels are low, or there is limited access to clean deliveries or trained birth attendants. These high-risk areas must be targeted for intensified vaccination efforts, including the use of mass vaccination campaigns. In addition, surveillance activities in all areas must be strengthened. Finally, because NT is not a communicable disease, and *C. tetani* cannot be eradicated from the environment, ensuring long-term elimination of NT will require the development of adequate health-care delivery systems to reach those at greatest risk—infants of poor women residing in rural areas in developing countries.

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Health Objectives for the Nation

Prevalence of Selected Risk Factors for Chronic Disease by Education Level in Racial/Ethnic Populations — United States, 1991–1992

One of the three broad national health objectives for the year 2000 is to reduce health disparities within the U.S. population (*1*). Disparities in risks for chronic diseases are particularly prominent among racial/ethnic minorities (blacks, American

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Indians/ Alaskan Natives, Asians/Pacific Islanders, and Hispanics). This report summarizes findings from the 1991 and 1992 Behavioral Risk Factor Surveillance System (BRFSS) that characterize the distribution of three major risk factors for chronic disease—current cigarette smoking, sedentary lifestyle, and overweight—across racial/ethnic groups and by level of education within the racial/ethnic groups.

Data were analyzed for 180,255 adults who participated in the 1991 or the 1992 BRFSS, a state-based, random-digit–dialed telephone survey that collects self-reported data from a representative sample of civilian, noninstitutionalized persons aged ≥18 years. Data from 1991 and 1992 were combined to increase precision of the prevalence estimates for minority populations. In 1991, monthly BRFSS surveys were conducted in the District of Columbia and all states except Kansas, Nevada, and Wyoming, and in 1992 in the District of Columbia and all states except Arkansas and Wyoming. Race/ethnicity and other demographic characteristics were self-reported. Current cigarette smoking was defined as ever having smoked 100 cigarettes and currently smoking regularly. Sedentary lifestyle was defined as reported participation in fewer than three 20-minute sessions of leisure-time physical activity per week; physical activity as part of usual job activities was not included. Self-reported data on height and weight were used to calculate body mass index (BMI) (weight in kilograms divided by height in meters squared). Overweight was defined as BMI ≥27.8 for men and ≥27.3 for women (*1*). Years of education were grouped as <12 years, 12 years, or >12 years.

For both women and men, the percentage of respondents reporting current cigarette smoking was highest among American Indians/Alaskan Natives and lowest among Asians/Pacific Islanders (Tables 1 and 2). Among women, a sedentary lifestyle was reported most frequently by blacks (68%) and least frequently by whites (56%). Among men, the prevalence of a sedentary lifestyle was highest for both blacks (63%)

TABLE 1. Weighted prevalences of selected risk factors for women, by race and ethnicity — Behavioral Risk Factor Surveillance System, United States, 1991–1992*

	White (n=90,369)		Black (n=10,465)		American Indian/ Alaskan Native (n=989)		Asian/ Pacific Islander (n=2,332)		Hispanic† (n=4,063)	
Risk factor	**%**	**(95% CI§)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Current cigarette smoking¶	21.6	(±0.4)	19.4	(±1.1)	28.7	(±4.9)	9.7	(±2.1)	14.5	(±1.5)
Sedentary lifestyle**	56.4	(±0.5)	67.7	(±1.3)	64.1	(±5.2)	64.7	(±3.4)	61.9	(±2.3)
Overweight††	21.7	(±0.4)	37.7	(±1.3)	30.3	(±4.9)	10.1	(±2.0)	26.5	(±2.1)
Education level										
<12 yrs	14.8	(±0.4)	23.6	(±1.2)	25.0	(±5.0)	7.3	(±1.5)	33.7	(±2.3)
12 yrs	36.3	(±0.5)	35.2	(±1.3)	36.9	(±5.6)	21.9	(±3.0)	31.1	(±2.2)
>12 yrs	48.7	(±0.5)	40.8	(±1.4)	38.0	(±5.4)	70.0	(±3.3)	34.9	(±2.2)

*Data were weighted and aggregated. Full descriptions of the weighting procedures and sample sizes for the states are given in Appendix F of *Chronic Disease in Minority Populations* (*2*).
†Persons of Hispanic origin may be of any race.
§Confidence interval.
¶Reported ever having smoked 100 cigarettes and currently smoking regularly.
**Reported participation in fewer than three 20-minute sessions of leisure-time physical activity per week; physical activity as part of usual job activities was not included.
††Self-reported data on height and weight were used to calculate body mass index (BMI) (weight in kilograms divided by height in meters squared). Overweight was defined as BMI ≥27.3 for women.

Chronic Disease — Continued

TABLE 2. Weighted prevalences of selected risk factors for men, by race and ethnicity — Behavioral Risk Factor Surveillance System, United States, 1991–1992*

	White (n=67,444)		Black (n=5,913)		American Indian/ Alaskan Native (n=822)		Asian/ Pacific Islander (n=1,921)		Hispanic† (n=2,929)	
Risk factor	**%**	**(95% CI§)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Current cigarette smoking¶	24.5	(±0.5)	27.4	(±1.6)	39.9	(±5.9)	19.4	(±3.1)	22.0	(±2.2)
Sedentary lifestyle**	56.2	(±0.6)	62.8	(±1.7)	50.8	(±6.0)	56.6	(±3.8)	61.5	(±2.7)
Overweight††	25.8	(±0.5)	21.4	(±1.6)	33.8	(±5.8)	10.8	(±2.2)	23.8	(±2.3)
Education level										
<12 yrs	14.4	(±0.4)	23.3	(±1.5)	25.1	(±5.4)	7.6	(±2.2)	33.9	(±2.7)
12 yrs	32.2	(±0.5)	36.8	(±1.7)	35.1	(±5.7)	16.0	(±2.7)	28.8	(±2.5)
>12 yrs	53.3	(±0.6)	39.7	(±1.7)	39.7	(±5.8)	75.7	(±3.3)	37.1	(±2.6)

*Data were weighted and aggregated. Full descriptions of the weighting procedures and sample sizes for the states are given in Appendix F of *Chronic Disease in Minority Populations* (*2*).
†Persons of Hispanic origin may be of any race.
§Confidence interval.
¶Reported ever having smoked 100 cigarettes and currently smoking regularly.
**Reported participation in fewer than three 20-minute sessions of leisure-time physical activity per week; physical activity as part of usual job activities was not included.
††Self-reported data on height and weight were used to calculate body mass index (BMI) (weight in kilograms divided by height in meters squared). Overweight was defined as BMI ≥27.8 for men.

and Hispanics (62%) and lowest for American Indians/Alaskan Natives (51%). The prevalence of overweight among women was highest for blacks (38%) and lowest for Asians/Pacific Islanders (10%). Among men, the prevalence of overweight was highest for American Indians/Alaskan Natives (34%) and lowest for Asians/Pacific Islanders (11%). Education levels by sex varied widely across the five racial/ethnic groups.

When results for the racial/ethnic groups were stratified by level of education, the prevalence of risk factors generally varied inversely with level of education within all five population groups (Table 3); however, prevalence of cigarette smoking among women was less consistent with this pattern. In addition, when respondents with <12 years of education were compared with respondents with >12 years of education, most differences in prevalence estimates were statistically significant. Despite the aggregation of data for the 2-year period, confidence intervals for prevalence estimates among these groups were wide because of the small sample sizes for American Indians/Alaskan Natives (1811) and for Asians/Pacific Islanders (4253).

Reported by: Office of Surveillance and Analysis, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Although the general inverse association between years of education and important risk factors—including current cigarette smoking, sedentary lifestyle, and overweight—has been clearly established (*3–5*), data characterizing such associations among U.S. racial/ethnic minorities are limited. The BRFSS findings in this report document substantial differences in the prevalence of risk factors among racial/ethnic groups and indicate that using culturally appropriate and culturally based messages in public health programs may be important in decreasing these risk factors in the highest risk groups. For example, a pilot study on effective weight-loss strategies for black

Chronic Disease — Continued

TABLE 3. Weighted prevalences of selected risk factors, by race, ethnicity, sex, and education level — Behavioral Risk Factor Surveillance System, United States, 1991–1992*

Sex/ Risk factor/ Education level	White		Black		American Indian/ Alaskan Native		Asian/ Pacific Islander		Hispanic†	
	%	(95% CI§)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Women										
Current cigarette smoking¶										
Education level										
<12 yrs	25.3	(±1.1)	19.7	(±2.1)	27.0	(± 9.7)	17.6	(± 8.0)	13.6	(±2.4)
12 yrs	26.0	(±0.7)	22.0	(±2.1)	28.4	(± 8.0)	17.8	(± 5.3)	16.2	(±2.8)
>12 yrs	17.2	(±0.5)	17.1	(±1.6)	30.0	(± 8.0)	6.4	(± 2.3)	13.3	(±2.7)
Sedentary lifestyle**										
Education level										
<12 yrs	72.0	(±1.2)	78.2	(±2.3)	76.6	(± 9.3)	68.5	(±10.0)	73.6	(±3.6)
12 yrs	60.3	(±0.8)	70.0	(±2.2)	70.5	(± 8.1)	70.0	(± 6.5)	58.2	(±4.1)
>12 yrs	48.8	(±0.7)	59.5	(±2.1)	49.9	(± 8.6)	62.4	(± 4.3)	53.4	(±3.8)
Overweight††										
Education level										
<12 yrs	31.6	(±1.2)	50.9	(±2.8)	42.9	(±11.3)	21.6	(± 8.7)	34.7	(±4.0)
12 yrs	23.8	(±0.7)	39.3	(±2.4)	25.8	(± 7.7)	12.1	(± 4.1)	25.6	(±3.5)
>12 yrs	17.1	(±0.5)	28.9	(±1.9)	28.1	(± 7.3)	8.3	(± 2.4)	19.5	(±3.1)
Men										
Current cigarette smoking										
Education level										
<12 yrs	34.1	(±1.4)	31.2	(±3.3)	40.7	(±12.4)	34.4	(±15.2)	25.4	(±4.1)
12 yrs	30.9	(±0.9)	29.7	(±2.7)	45.3	(±10.2)	27.6	(± 8.6)	24.0	(±4.2)
>12 yrs	18.1	(±0.6)	23.4	(±2.4)	34.9	(± 8.8)	16.3	(± 3.2)	17.4	(±3.1)
Sedentary lifestyle										
Education level										
<12 yrs	69.4	(±1.4)	77.4	(±3.0)	58.8	(±12.9)	47.0	(±14.5)	71.8	(±4.6)
12 yrs	62.2	(±1.0)	62.8	(±2.9)	53.3	(±10.2)	62.6	(± 8.8)	61.4	(±4.9)
>12 yrs	49.1	(±0.8)	54.1	(±2.7)	43.3	(± 9.2)	55.9	(± 4.4)	51.9	(±4.2)
Overweight										
Education level										
<12 yrs	27.9	(±1.4)	28.4	(±3.2)	41.2	(±13.0)	—§§		25.6	(±4.3)
12 yrs	27.0	(±0.9)	29.5	(±2.6)	38.2	(± 9.7)	16.5	(± 5.4)	26.5	(±4.4)
>12 yrs	23.1	(±0.6)	27.7	(±2.5)	25.6	(± 8.3)	9.6	(± 2.5)	20.3	(±3.3)

*Data were weighted and aggregated. Full descriptions of the weighting procedures and sample sizes for the states are given in Appendix F of *Chronic Disease in Minority Populations* (*2*).

†Persons of Hispanic origin may be of any race.

§Confidence interval.

¶Reported ever having smoked 100 cigarettes and currently smoking regularly.

**Reported participation in fewer than three 20-minute sessions of leisure-time physical activity per week; physical activity as part of usual job activities was not included.

††Self-reported data on height and weight were used to calculate body mass index (BMI) (weight in kilograms divided by height in meters squared). Overweight was defined as BMI ≥27.8 for men and ≥27.3 for women.

§§Estimate is not given because there were fewer than 50 respondents.

Chronic Disease — Continued

women had trained black women as group leaders and used ethnic foods and educational materials reviewed by black advisors to ensure that they were culturally appropriate (*6*). Further evaluation of culturally appropriate interventions is needed to determine whether they are more effective than interventions that have no cultural adaptations.

The findings in this report are subject to at least two limitations. First, because BRFSS is a telephone survey and 5% of households are without telephones, the findings cannot be generalized to the total respective population groups. In addition, telephone ownership varies substantially across racial/ethnic groups: the Bureau of the Census reported that, by race and ethnicity of the householder, in 1990 telephones were in the homes of 98% of Asians/Pacific Islanders, 96% of whites, 88% of Hispanics, 87% of blacks, and 77% of American Indians/Alaskan Natives (*7*). Second, prevalence estimates of chronic disease risk factors are based on self-reported data and may be subject to reporting bias.

Because poverty is associated with poor health status and poverty is distributed unequally among racial/ethnic groups, education levels and other socioeconomic factors must be considered when examining racial/ethnic group-specific differences in health status and determining intervention strategies. Within the racial/ethnic groups analyzed in this report, the prevalences of current cigarette smoking, sedentary lifestyle, and overweight generally were highest among those with <12 years of education. Although education level is an imperfect proxy measure for socioeconomic status (SES), it is often the only SES marker available from routine surveillance data. Therefore, education level is an important factor in the design of risk-reduction programs to help targeted audiences better understand health messages (*8,9*). In addition, despite the lower prevalence of telephone ownership among racial/ethnic groups, telephone-based intervention strategies may assist in communicating risk-reduction programs to persons in households with telephones who would not routinely attend risk-reduction programs (*10*).

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Notice to Readers

Chronic Disease in Minority Populations **Report Published**

CDC has published *Chronic Disease in Minority Populations*, a national surveillance report on chronic disease indicators in blacks, American Indians/Alaska Natives, Asians/Pacific Islanders, and Hispanics (*1*). The report is organized by racial/ethnic group and includes sex-specific data on demographics, life expectancy, mortality, morbidity, health-related quality of life, selected behavioral risk factors, and preventive health practices. Copies are available from CDC's Office of Surveillance and Analysis, National Center for Chronic Disease Prevention and Health Promotion, Mailstop K-30, 4770 Buford Highway, NE, Atlanta, GA 30341-3724; telephone (404) 488-5284.

Reference

1. CDC. Chronic disease in minority populations. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, 1994.

Notice to Readers

Publication of *Reported Tuberculosis in the United States, 1993*

CDC has released *Reported Tuberculosis in the United States, 1993* (*1*). The report includes the final tabulations of data for tuberculosis (TB) cases verified and counted by state and local health departments in 1993 and includes updated data submitted to CDC through September 30, 1994. As a result, some tabulations in this report vary slightly from the information reported previously in *MMWR* (*2*). This publication also contains data from the expanded TB surveillance system, which was initiated in January 1993.

Copies of *Reported Tuberculosis in the United States, 1993* (item number 00-6481) are available from CDC's National Center for Prevention Services, Information Services, Mailstop E-06, 1600 Clifton Road, NE, Atlanta, GA 30333; or from the National Center for Prevention Services Voice Information System, telephone (404) 639-1819.

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1. CDC. Reported tuberculosis in the United States, 1993. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, 1994.
2. CDC. Expanded tuberculosis surveillance and tuberculosis morbidity—United States, 1993. MMWR 1994;43:361–5.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

The data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. Inquiries about the *MMWR* Series, including material to be considered for publication, should be directed to: Editor, *MMWR* Series, Mailstop C-08, Centers for Disease Control and Prevention, Atlanta, GA 30333; telephone (404) 332-4555.

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