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MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Worker Fatalities due to Excavation Cave-Ins

Worker fatalities due to excavation cave-ins in four states have recently been investigated by the National Institute for Occupational Safety and Health (NIOSH) as part of its Fatal Accident Circumstances and Epidemiology (FACE) project. Brief reports follow.

On February 25, 1985, a 22-year-old laborer in Georgia was manually digging a dry well and an 8-foot-deep trench for a drainage-pipe connection. One wall of the trench collapsed, covering him with 6 feet of soil. He was apparently dead at the scene. None of the walls in the excavated area were shored (braced) or sloped appropriately.

On March 24, 1985, a 45-year-old "lead man" on a construction crew in Arizona was shoveling loose dirt from the bottom of a 21-foot excavation. He was preparing it for the placement of a fabricated trench shield. As soil began falling from a side wall, the worker tried to leave the site, but the soil gave way, covering him. He died during surgery approximately 6 hours after the cave-in. The vertical walls of this excavation had not been shored.

On May 3, 1985, a 33-year-old field foreman on a construction site in Pennsylvania was standing in a vertical-walled excavation approximately 7 feet deep. One wall caved in, knocking him to the ground and burying him. Efforts to revive him at the scene were unsuccessful. The walls of the excavation had not been shored.

On August 8, 1985, a two-man crew in Ohio was using a backhoe* in an 11- to 12-foot-deep excavation to cut a lateral trench off an 8-inch sewer main. One of the crew, a 62-year-old laborer, was killed when the trench wall collapsed, covering him with 3 feet of soil. The sides of the trench had not been shored.

NIOSH investigators determined that neither the relevant Occupational Safety and Health Administration (OSHA) standards nor the NIOSH-recommended work practices for such excavations had been adhered to in any of these cases. The current OSHA standards† specify that:

1. The walls and faces of all excavations in which employees are exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground, or some other equivalent means.
2. Sides of trenches in unstable or soft material 5 feet or more in depth shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect employees working within them.
3. Excavations (including trenches) adjacent to backfilled areas or subjected to vibrations from railroads, highway traffic, or operation of machinery shall have additional shoring and bracing precautions taken.

*An excavation machine with a mechanical arm that operates back toward the worker.
†29 CFR 1926.651 and 1926.652.

Excavation Cave-Ins — Continued

NIOSH and the National Bureau of Standards (NBS) recommend that:

1. Shoring systems or sloping of the walls be used in all excavations 5-24 feet deep in *any* type of soil, except solid, stable rock.
2. Appropriate shoring, shielding, or sloping requirements for all excavations deeper than 24 feet (except those in unfractured rock) be determined by an engineer qualified to make these determinations.
3. All employers engaged in excavation activities familiarize themselves with the provisions of the NBS/NIOSH document, *Development of Draft Construction Safety Standards for Excavations* (*1*) and implement them as safe work practices in conjunction with compliance to the existing OSHA standards.

The investigations further determined that compliance with the relevant OSHA standards or adherence to the NIOSH-recommended work practices regarding excavations would have reduced the inherent risk in each of the four reported fatal incidents.

Reported by Injury Surveillance Br, Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

Editorial Note: Excavation cave-ins often cause serious and fatal injuries to U.S. workers. Analysis of workers' compensation claims for 1976-1981 (*2*) in the Supplementary Data System of the Bureau of Labor Statistics suggests that excavation cave-ins caused approximately 1,000 work-related injuries per year. Of these, approximately 140 resulted in permanent disability, and 75 were fatal. Thus, this type of incident is an important cause of occupational deaths, and accounts for nearly 1% of all work-related deaths reported annually in the United States.

To clarify prior OSHA regulations, NBS and NIOSH have developed recommendations establishing a requirement to provide protection in excavations 5 feet deep or greater, regardless of soil type. These recommendations also present a simplified soil-classification system for use in determining appropriate side-sloping requirements and for calculating the lateral soil pressures imposed on shoring systems.

The principal objective of investigations undertaken by NIOSH as part of its FACE project is to determine what factors allowed the fatality to occur and how such fatalities can be prevented. Whether an operation was in compliance with existing mandatory standards is only one of many variables that may have contributed to the fatality. Evidence of noncompliance in the four incidents described above suggests that employers are either (1) unaware of the existence of the OSHA standards or (2) misinterpreting the requirements of the standards. As an obvious first step in preventing such fatalities, all such operations should be done in full compliance with existing OSHA standards.

NIOSH urges safety and trade associations, underground-utility companies, and municipalities and other local governments responsible for underground-utility services, as well as state OSHA consultative services to bring these recommendations to the attention of employers engaged in excavations.

Suggestions, requests for additional information on safe work practices, or questions related to this announcement should be directed to Director, Division of Safety Research, National Institute for Occupational Safety and Health, 944 Chestnut Ridge Road, Morgantown, West Virginia 26505; telephone (304) 291-4595.

References

1. National Institute for Occupational Safety and Health/National Bureau of Standards. Development of draft construction safety standards for excavations, Vols. I and II. NBSIR 83-2693, DHHS (NIOSH) publication no. 83-103.
2. U.S. Department of Labor, Bureau of Labor Statistics. Supplementary data system. Unpublished injury and fatality data for 1976-1981.

International Notes

Dengue — the Americas, 1984

In 1984, dengue activity in the Americas remained at a relatively low level, with 43,435 cases reported from 20 countries (Table 1). Three dengue serotypes (DEN-1, DEN-2, and DEN-4) circulated in the region (Figure 1).

Mexico had the greatest activity, with 27,312 cases reported, and experienced its first cases of severe hemorrhagic disease with dengue-associated fatalities in 1984. Three serotypes were involved, DEN-1 and DEN-2 on the west coast and DEN-1 and DEN-4 in Yucatán. Dengue hemorrhagic fever (DHF) occurred in Puerto Vallarta, Jalisco, and in Merida, Yucatán. The outbreak in Yucatán included 5,390 reported cases and was caused by DEN-4. Nine patients had hemorrhagic disease, and four died. DEN-4 was isolated from one patient who died and from two of the other patients with hemorrhagic fever. Five others were confirmed by IgM-capture enzyme-linked immunosorbent assay and/or hemagglutination-inhibition and complement fixation tests, and one could not be confirmed.

In Central America, Belize, El Salvador, and Honduras each reported dengue activity. DEN-1 virus was isolated from cases during a small outbreak in Belize. In Honduras, both DEN-1 and DEN-2 virus transmission were confirmed, but disease occurrence was only sporadic.

TABLE 1. Reported dengue cases, by country — the Americas, 1984

Location	Date of last reported case	Total reported cases	Virus serotype
Aruba	December	12,000*	DEN-1
Barbados	December	63	
Belize	December	137	DEN-1
Colombia	December	Unknown	DEN-1, 4
Dominican Republic	June	260	DEN-1, 4
El Salvador	September	560	
Guyana	December	Sporadic	
Grenada	December	3	
Guadeloupe	December	339	
Haiti	September	328	DEN-1, 2
Honduras	December	378	DEN-1, 2
Jamaica	December	12	
Martinique	December	Sporadic	
Mexico	December	27,312	DEN-1, 2, 4
Puerto Rico	December	1,872	DEN-1, 2
St. Christopher-Nevis	December	1	
Trinidad & Tobago	December	31	DEN-1, 2, 4
United States	December	67†	DEN-1, 3
U.S. Virgin Islands	December	72	DEN-1
Venezuela	December	Unknown	DEN-1, 2
Total		**43,435**	**DEN-1, 2, 3, 4**

*Estimated.

†Imported cases only.

Dengue — Continued

In most of the Caribbean islands, the extent of dengue virus transmission was limited in 1984. DEN-1 and DEN-4 transmission was confirmed in the Dominican Republic, while Haiti had confirmed cases of both DEN-1 and DEN-2. Puerto Rico reported 1,872 clinical cases, but only six were confirmed. In Puerto Rico, DEN-1 and DEN-2 viruses were isolated for the first time since 1982 and 1978, respectively. Three cases of DEN-1 were confirmed in the U.S. Virgin Islands. A large outbreak of DEN-1 occurred in Aruba, the Netherlands Antilles, beginning in December 1984. Two fatal cases of hemorrhagic disease were reported, one of which was confirmed as DEN-1 by virus isolation. Low-level DEN-1, DEN-2, and DEN-4 transmission was confirmed in Trinidad. Other Caribbean islands reported sporadic transmission, but the virus serotypes are not known.

In South America, Colombia confirmed cases of DEN-1 and DEN-4, and Venezuela confirmed cases of DEN-1 and DEN-2. Neither country reported major epidemic activity in 1984.

(Continued on page 57)

TABLE I. Summary—cases specified notifiable diseases, United States

Disease	4th Week Ending			Cumulative, 4th Week Ending		
	Jan. 25, 1986	Jan. 26, 1985	Median 1981-1985	Jan. 25, 1986	Jan. 26, 1985	Median 1981-1985
Acquired Immunodeficiency Syndrome (AIDS)	201	80	N	859	357	N
Aseptic meningitis	95	69	92	299	275	337
Encephalitis: Primary (arthropod-borne & unspec.)	15	13	15	53	49	59
Post-infectious	3	3	1	3	9	7
Gonorrhea: Civilian	16,525	16,396	17,703	60,384	57,792	73,530
Military	339	211	404	965	1,070	1,990
Hepatitis: Type A	486	370	424	1,536	1,298	1,420
Type B	437	419	419	1,563	1,461	1,461
Non A, Non B	36	83	N	182	264	N
Unspecified	136	70	145	346	274	520
Legionellosis	9	30	N	34	56	N
Leprosy	11	1	2	27	10	10
Malaria	11	20	13	42	40	46
Measles: Total*	16	8	8	54	33	34
Indigenous	16	1	N	51	16	N
Imported	-	7	N	3	17	N
Meningococcal infections: Total	51	55	67	196	168	222
Civilian	51	55	67	195	168	215
Military	-	-	-	1	-	1
Mumps	30	55	92	120	181	304
Pertussis	19	34	20	100	89	65
Rubella (German measles)	10	3	12	19	17	51
Syphilis (Primary & Secondary): Civilian	454	644	644	1,568	1,708	2,270
Military	-	2	11	9	12	32
Toxic Shock syndrome	2	6	N	13	24	N
Tuberculosis	428	387	387	1,048	1,066	1,278
Tularemia	2	2	1	6	10	9
Typhoid fever	12	1	6	19	7	29
Typhus fever, tick-borne (RMSF)	2	-	2	4	1	6
Rabies, animal	89	43	83	291	238	320

TABLE II. Notifiable diseases of low frequency, United States

	Cum 1986		Cum 1986
Anthrax	-	Leptospirosis	5
Botulism: Foodborne	-	Plague	-
Infant (N. Mex. 1)	4	Poliomyelitis, Paralytic	-
Other	-	Psittacosis	1
Brucellosis (Calif. 1)	4	Rabies, human	-
Cholera	-	Tetanus	2
Congenital rubella syndrome	1	Trichinosis (N.H. 2; Mass. 1)	7
Congenital syphilis, ages < 1 year	-	Typhus fever, flea-borne (endemic, murine)	-
Diphtheria	-		

*There were no cases of internationally imported measles reported for this week.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending January 25, 1986 and January 26, 1985 (4th Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1986	1986	Cum. 1986	Cum. 1986	Cum. 1986	Cum. 1985	1986	1986	1986	1986	1986	Cum. 1986
UNITED STATES	859	95	53	3	60,384	57,792	486	437	36	136	9	27
NEW ENGLAND	20	2	2	-	1,288	2,047	5	29	2	6	-	-
Maine	1	1	-	-	74	86	-	5	-	-	-	-
N.H.	1	-	1	-	29	39	1	-	-	-	-	-
Vt.	1	-	-	-	18	20	-	1	-	-	-	-
Mass.	9	-	1	-	546	671	3	17	2	6	-	-
R.I.	3	1	-	-	104	170	-	5	-	-	-	-
Conn.	5	-	-	-	517	1,061	1	1	-	-	-	-
MID ATLANTIC	279	10	7	-	12,430	7,888	35	33	3	3	-	4
Upstate N.Y.	19	6	3	-	1,028	695	30	25	-	2	-	-
N.Y. City	179	-	3	-	8,443	3,318	1	2	-	-	-	4
N.J.	49	4	-	-	975	1,151	4	6	3	1	-	-
Pa.	32	-	1	-	1,984	2,724	-	-	-	-	-	-
E.N. CENTRAL	54	17	11	-	8,384	6,698	17	47	1	6	4	1
Ohio	25	10	6	-	2,638	2,511	10	26	-	5	3	-
Ind.	4	2	-	-	1,493	479	3	4	-	-	-	-
Ill.	15	1	-	-	1,196	1,244	-	-	-	-	-	-
Mich.	10	4	5	-	2,544	2,389	4	17	1	1	1	1
Wis.	-	-	-	-	513	75	-	-	-	-	-	-
W.N. CENTRAL	24	3	-	1	2,838	3,381	19	26	1	1	2	1
Minn.	14	1	-	-	479	419	3	2	1	-	-	-
Iowa	2	-	-	-	338	340	3	2	-	-	1	-
Mo.	4	1	-	-	1,426	1,528	3	14	-	1	1	-
N. Dak.	1	-	-	-	38	21	-	-	-	-	-	-
S. Dak.	-	-	-	-	49	71	3	-	-	-	-	-
Nebr.	1	1	-	-	112	391	-	4	-	-	-	-
Kans.	2	-	-	1	396	611	7	4	-	-	-	1
S. ATLANTIC	151	26	11	2	11,735	12,324	36	72	4	5	2	-
Del.	6	1	2	-	269	298	-	4	-	-	-	-
Md.	14	2	5	-	1,364	1,609	-	-	-	-	-	-
D.C.	18	1	-	-	1,203	938	-	1	-	-	-	-
Va.	10	12	1	1	1,279	1,448	2	13	-	-	1	-
W. Va.	-	1	-	-	189	204	-	2	1	-	-	-
N.C.	4	2	2	-	2,027	2,491	-	12	-	3	-	-
S.C.	8	-	-	-	1,515	1,630	4	8	-	-	1	-
Ga.	2	1	-	-	-	-	9	10	-	-	-	-
Fla.	89	6	1	1	3,889	3,706	21	22	3	2	-	-
E.S. CENTRAL	17	4	7	-	5,070	5,329	2	36	1	-	-	-
Ky.	5	-	2	-	581	580	1	1	-	-	-	-
Tenn.	9	3	1	-	1,995	2,152	1	24	-	-	-	-
Ala.	-	1	4	-	1,339	1,634	-	11	1	-	-	-
Miss.	3	-	-	-	1,155	963	-	-	-	-	-	-
W.S. CENTRAL	93	7	-	-	8,023	9,711	45	15	2	12	1	-
Ark.	5	-	-	-	814	996	-	-	-	-	-	-
La.	14	1	-	-	1,338	1,955	3	-	-	-	-	-
Okla.	2	1	-	-	894	954	7	2	1	-	1	-
Tex.	72	5	-	-	4,977	5,806	35	13	1	12	-	-
MOUNTAIN	12	5	2	-	1,793	2,080	28	17	2	10	-	-
Mont.	-	-	-	-	51	67	2	1	-	-	-	-
Idaho	1	-	-	-	30	69	-	1	-	-	-	-
Wyo.	2	-	-	-	34	46	-	-	-	-	-	-
Colo.	1	1	-	-	389	630	4	4	2	5	-	-
N. Mex.	1	1	-	-	208	280	7	1	-	-	-	-
Ariz.	2	-	1	-	572	542	-	-	-	-	-	-
Utah	1	2	1	-	81	104	11	4	-	5	-	-
Nev.	4	1	-	-	428	342	4	6	-	-	-	-
PACIFIC	209	21	13	-	8,823	8,334	299	162	20	93	-	21
Wash.	14	-	-	-	457	620	23	10	6	4	-	-
Oreg.	6	-	-	-	354	520	82	13	3	-	-	-
Calif.	186	16	12	-	7,663	6,833	193	136	9	88	-	21
Alaska	-	-	1	-	249	244	-	-	-	-	-	-
Hawaii	3	5	-	-	100	117	1	3	2	1	-	-
Guam	-	U	-	-	-	6	U	U	U	U	U	-
P.R.	-	1	-	-	157	331	-	3	-	1	-	-
V.I.	-	U	-	-	8	29	U	U	U	U	U	-
Pac. Trust Terr.	-	U	-	-	-	72	U	U	U	U	U	-
Amer. Samoa	-	U	-	-	-	-	U	U	U	U	U	-

N: Not notifiable U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 25, 1986 and January 26, 1985 (4th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985
UNITED STATES	42	16	51	-	3	33	196	30	120	19	100	89	10	19	17
NEW ENGLAND	-	-	-	-	-	-	14	1	3	1	6	1	-	-	2
Maine	-	-	-	-	-	-	4	-	-	-	1	-	-	-	-
N.H.	-	-	-	-	-	-	-	-	1	-	2	-	-	-	1
Vt.	-	-	-	-	-	-	4	-	-	-	-	1	-	-	-
Mass.	-	-	-	-	-	-	2	-	-	-	2	-	-	-	1
R.I.	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-
Conn.	-	-	-	-	-	-	3	-	-	1	1	-	-	-	-
MID ATLANTIC	6	8	11	-	2	-	22	2	8	3	23	16	4	5	4
Upstate N.Y.	-	-	-	-	2	-	5	1	4	2	16	5	4	5	-
N.Y. City	3	8	11	-	-	-	8	-	-	-	-	4	-	-	3
N.J.	2	-	-	-	-	-	2	-	2	-	-	-	-	-	1
Pa.	1	-	-	-	-	-	7	1	2	1	7	7	-	-	-
E.N. CENTRAL	1	-	-	-	-	14	23	14	52	4	17	30	-	1	-
Ohio	1	-	-	-	-	-	13	-	9	4	11	8	-	-	-
Ind.	-	-	-	-	-	-	4	-	-	-	3	8	-	-	-
Ill.	-	-	-	-	-	1	-	6	29	-	-	2	-	-	-
Mich.	-	-	-	-	-	-	6	8	14	-	1	1	-	-	-
Wis.	-	-	-	-	-	13	-	-	-	-	2	11	-	1	-
W.N. CENTRAL	-	2	24	-	-	-	12	1	9	1	10	3	-	-	4
Minn.	-	-	-	-	-	-	-	-	-	-	5	1	-	-	-
Iowa	-	-	-	-	-	-	3	-	3	-	2	-	-	-	-
Mo.	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Kans.	-	2	24	-	-	-	2	1	5	1	3	1	-	-	4
S. ATLANTIC	7	-	-	-	-	-	29	3	18	3	14	6	-	-	1
Del.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Md.	1	-	-	-	-	-	2	-	2	-	4	1	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Va.	5	-	-	-	-	-	2	1	4	-	2	-	-	-	-
W. Va.	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-
N.C.	1	-	-	-	-	-	5	-	1	1	5	2	-	-	-
S.C.	-	-	-	-	-	-	6	1	2	-	1	-	-	-	1
Ga.	-	-	-	-	-	-	4	-	1	1	1	-	-	-	-
Fla.	-	-	-	-	-	-	10	1	1	1	1	3	-	-	-
E.S. CENTRAL	1	-	-	-	-	-	18	1	3	1	5	2	-	1	1
Ky.	1	-	-	-	-	-	9	-	2	-	1	-	-	1	1
Tenn.	-	-	-	-	-	-	3	1	1	-	1	1	-	-	-
Ala.	-	-	-	-	-	-	6	-	-	1	3	1	-	-	-
Miss.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	-	-	-	-	-	-	6	1	2	-	-	9	-	-	1
Ark.	-	-	-	-	-	-	-	-	-	-	-	6	-	-	1
La.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Okla.	-	-	-	-	-	-	2	N	N	-	-	3	-	-	-
Tex.	-	-	-	-	-	-	3	1	2	-	-	-	-	-	-
MOUNTAIN	-	-	1	-	-	10	12	2	9	2	11	2	-	-	-
Mont.	-	-	-	-	-	10	2	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-
N. Mex.	-	-	1	-	-	-	2	N	N	2	5	1	-	-	-
Ariz.	-	-	-	-	-	-	4	-	6	-	3	1	-	-	-
Utah	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Nev.	-	-	-	-	-	-	2	1	1	-	-	-	-	-	-
PACIFIC	27	6	15	-	1	9	60	5	16	4	14	20	6	12	4
Wash.	1	-	-	-	-	1	8	-	-	-	5	1	-	-	-
Oreg.	1	-	-	-	-	-	5	N	N	-	-	4	-	-	-
Calif.	25	5	14	-	1	7	45	4	15	3	8	15	6	12	4
Alaska	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Hawaii	-	1	1	-	-	1	-	1	1	1	1	-	-	-	-
Guam	-	U	-	U	-	7	-	U	-	U	-	-	U	-	-
P.R.	-	-	-	-	-	15	-	-	2	1	2	1	-	-	-
V.I.	-	U	-	U	-	1	-	U	-	U	-	-	U	-	-
Pac. Trust Terr.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
Amer. Samoa	-	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 III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 25, 1986 and January 26, 1985 (4th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985	Cum. 1986	Cum. 1986	Cum. 1986	Cum. 1986
UNITED STATES	1,568	1,708	2	1,048	1,066	6	19	4+1	291
NEW ENGLAND	48	38	-	25	38	-	1	1	-
Maine	3	1	-	6	2	-	-	-	-
N.H.	1	1	-	-	3	-	-	-	-
Vt.	1	-	-	1	-	-	-	-	-
Mass.	25	20	-	7	22	-	1	1	-
R.I.	1	-	-	-	6	-	-	-	-
Conn.	17	16	-	11	5	-	-	-	-
MID ATLANTIC	250	229	-	215	256	-	1	-	39
Upstate N.Y.	14	11	-	31	27	-	-	-	5
N.Y. City	166	143	-	114	142	-	1	-	-
N.J.	49	44	-	43	11	-	-	-	-
Pa.	21	31	-	27	76	-	-	-	34
E.N. CENTRAL	43	89	-	165	123	-	2	-	7
Ohio	7	10	-	21	27	-	-	-	-
Ind.	18	6	-	14	14	-	-	-	1
Ill.	9	55	-	87	60	-	-	-	-
Mich.	6	14	-	33	18	-	2	-	2
Wis.	3	4	-	10	4	-	-	-	4
W.N. CENTRAL	17	16	1	12	24	4	-	-	27
Minn.	3	2	-	2	2	-	-	-	-
Iowa	3	3	-	2	10	1	-	-	9
Mo.	9	7	-	6	5	3	-	-	1
N. Dak.	2	-	-	2	1	-	-	-	17
S. Dak.	-	-	-	-	1	-	-	-	-
Nebr.	-	1	1	-	2	-	-	-	-
Kans.	-	3	-	-	3	-	-	-	-
S. ATLANTIC	341	388	1	213	194	1	-	1+1	57
Del.	1	3	-	-	3	-	-	-	-
Md.	41	38	-	11	15	-	-	-	40
D.C.	19	10	-	14	12	-	-	-	-
Va.	34	26	1	7	-	-	-	-	6
W. Va.	2	-	-	5	10	-	-	-	1
N.C.	37	54	-	38	22	-	-	1	-
S.C.	70	63	-	35	31	-	-	-	2
Ga.	-	-	-	25	26	1	-	-	8
Fla.	137	194	-	78	75	-	-	-	-
E.S. CENTRAL	120	188	-	109	91	1	-	2	17
Ky.	8	6	-	40	21	1	-	1	1
Tenn.	59	20	-	19	23	-	-	-	9
Ala.	53	80	-	50	44	-	-	1	7
Miss.	-	82	-	-	3	-	-	-	-
W.S. CENTRAL	384	383	-	76	75	-	-	-	28
Ark.	19	32	-	19	1	-	-	-	4
La.	66	82	-	45	26	-	-	-	-
Okla.	10	9	-	4	13	-	-	-	4
Tex.	289	260	-	8	35	-	-	-	20
MOUNTAIN	35	73	-	20	15	-	1	-	81
Mont.	-	-	-	-	2	-	-	-	34
Idaho	1	1	-	-	-	-	-	-	-
Wyo.	-	2	-	-	-	-	-	-	38
Colo.	18	20	-	-	-	-	-	-	-
N. Mex.	-	6	-	6	-	-	-	-	1
Ariz.	14	43	-	9	11	-	-	-	8
Utah	2	1	-	-	-	-	1	-	-
Nev.	-	-	-	5	2	-	-	-	-
PACIFIC	330	304	-	213	250	-	14	-	35
Wash.	-	9	-	14	5	-	2	-	-
Oreg.	11	13	-	9	4	-	-	-	-
Calif.	313	276	-	182	216	-	11	-	34
Alaska	-	-	-	-	18	-	-	-	1
Hawaii	6	6	-	8	7	-	1	-	-
Guam	-	-	U	-	2	-	-	-	-
P.R.	57	71	-	20	14	-	-	-	4
V.I.	-	-	U	-	-	-	-	-	-
Pac. Trust Terr.	-	9	U	-	5	-	-	-	-
Amer. Samoa	-	-	U	-	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending January 25, 1986 (4th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	708	504	135	34	12	23	73
Boston, Mass.	164	95	41	14	8	6	17
Bridgeport, Conn.	42	24	13	2	1	2	2
Cambridge, Mass.	32	25	6	1	-	-	4
Fall River, Mass.	43	37	5	1	-	-	1
Hartford, Conn.	60	39	16	1	-	4	9
Lowell, Mass.	29	27	2	-	-	-	1
Lynn, Mass.	25	20	5	-	-	-	2
New Bedford, Mass.	21	18	2	-	1	-	-
New Haven, Conn.	53	34	12	2	-	5	5
Providence, R.I.	77	66	8	1	1	1	12
Somerville, Mass.	10	8	-	2	-	-	1
Springfield, Mass.	58	40	14	2	1	1	9
Waterbury, Conn.	33	28	3	1	-	1	5
Worcester, Mass.	61	43	8	7	-	3	5
MID ATLANTIC	2,997	2,014	588	251	68	75	186
Albany, N.Y.	62	43	13	2	1	3	1
Allentown, Pa.§	22	22	-	-	-	-	-
Buffalo, N.Y.	129	88	25	10	3	3	13
Camden, N.J.	62	42	16	1	-	3	5
Elizabeth, N.J.	36	25	8	1	2	-	1
Erie, Pa.†	33	29	3	1	-	-	3
Jersey City, N.J.	48	30	8	9	1	-	-
N.Y. City, N.Y.	1,502	982	281	165	31	43	63
Newark, N.J.	75	33	20	15	5	2	5
Paterson, N.J.	30	21	6	2	-	1	2
Philadelphia, Pa.	499	326	118	28	17	10	46
Pittsburgh, Pa.†	56	44	9	2	-	1	5
Reading, Pa.	42	38	4	-	-	-	12
Rochester, N.Y.	136	97	25	6	4	3	14
Schenectady, N.Y.	27	22	5	-	-	-	3
Scranton, Pa.†	34	25	7	2	-	-	3
Syracuse, N.Y.	115	83	22	3	3	4	7
Trenton, N.J.	36	26	5	3	1	1	-
Utica, N.Y.	22	15	7	-	-	-	2
Yonkers, N.Y.	31	23	6	1	-	1	1
E.N. CENTRAL	2,324	1,656	394	118	63	91	113
Akron, Ohio	53	34	13	2	1	3	3
Canton, Ohio	24	15	7	1	1	-	1
Chicago, Ill.§	553	462	11	26	16	37	16
Cincinnati, Ohio	146	100	31	6	4	5	9
Cleveland, Ohio	128	77	33	8	2	8	1
Columbus, Ohio	131	93	23	4	7	4	4
Dayton, Ohio	115	79	27	4	4	1	3
Detroit, Mich.	288	176	62	28	13	8	6
Evansville, Ind.	62	47	10	4	1	-	6
Fort Wayne, Ind.	73	49	18	2	1	3	7
Gary, Ind.	16	11	4	1	-	-	-
Grand Rapids, Mich.	66	50	9	3	2	2	7
Indianapolis, Ind.	184	113	48	12	5	6	10
Madison, Wis.	32	26	3	-	1	2	2
Milwaukee, Wis.	136	102	22	7	1	4	6
Peoria, Ill.	51	33	14	1	1	2	8
Rockford, Ill.	47	39	5	2	1	-	6
South Bend, Ind.	30	17	12	-	-	1	3
Toledo, Ohio	127	95	23	3	1	5	14
Youngstown, Ohio	62	38	19	4	1	-	1
W.N. CENTRAL	791	536	131	59	33	32	42
Des Moines, Iowa	78	53	13	8	2	2	4
Duluth, Minn.	27	20	5	-	2	-	-
Kansas City, Kans.	43	26	10	1	3	3	1
Kansas City, Mo.	125	79	30	11	4	1	8
Lincoln, Nebr.	47	32	6	4	3	2	4
Minneapolis, Minn.	100	66	14	10	2	8	5
Omaha, Nebr.	85	62	14	4	2	3	5
St. Louis, Mo.	152	92	24	18	9	9	6
St. Paul, Minn.	81	66	9	2	4	-	4
Wichita, Kans.	53	40	6	1	2	4	5

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,358	898	292	89	42	37	52
Atlanta, Ga.	159	95	46	14	4	-	4
Baltimore, Md.	267	153	66	25	12	11	7
Charlotte, N.C.	79	48	22	7	1	1	3
Jacksonville, Fla.	111	66	32	5	7	1	6
Miami, Fla.	129	78	34	7	7	3	1
Norfolk, Va.	59	35	16	4	3	1	6
Richmond, Va.	70	39	21	6	1	3	7
Savannah, Ga.	58	41	11	3	1	2	3
St. Petersburg, Fla.	130	109	17	3	-	1	10
Tampa, Fla.	94	57	18	7	4	8	1
Washington, D.C.§	164	150	2	4	2	6	3
Wilmington, Del.	38	27	7	4	-	-	1
E.S. CENTRAL	813	527	200	42	25	19	47
Birmingham, Ala.	133	77	33	11	9	3	2
Chattanooga, Tenn.	58	36	16	4	-	2	2
Knoxville, Tenn.	103	65	24	7	3	4	8
Louisville, Ky.	114	83	24	3	1	3	9
Memphis, Tenn.	214	144	49	10	6	5	16
Mobile, Ala.	39	29	6	4	-	-	3
Montgomery, Ala.	39	27	10	1	-	1	2
Nashville, Tenn.	113	66	38	2	6	1	5
W.S. CENTRAL	1,389	943	240	104	53	49	87
Austin, Tex.	38	25	8	3	-	2	4
Baton Rouge, La.	42	32	4	3	2	1	2
Corpus Christi, Tex.	42	21	16	1	1	3	4
Dallas, Tex.	215	124	50	21	9	11	7
El Paso, Tex.	88	54	23	9	2	-	9
Fort Worth, Tex.	94	56	18	11	5	4	9
Houston, Tex. §	244	226	1	4	8	5	5
Little Rock, Ark.	89	54	19	3	6	7	10
New Orleans, La.	137	70	25	25	12	5	-
San Antonio, Tex.	246	173	46	16	5	6	18
Shreveport, La.	70	50	15	2	-	3	6
Tulsa, Okla.	84	58	15	6	3	2	13
MOUNTAIN	757	487	164	56	25	25	52
Albuquerque, N.Mex.	87	62	17	4	2	2	5
Colo. Springs, Colo.	41	20	8	7	2	4	5
Denver, Colo.	147	94	34	11	3	5	10
Las Vegas, Nev.	132	73	38	15	2	4	10
Ogden, Utah	22	16	5	-	-	1	3
Phoenix, Ariz.	162	109	32	7	10	4	5
Pueblo, Colo.	15	11	2	2	-	-	2
Salt Lake City, Utah	49	30	11	2	4	2	-
Tucson, Ariz.	102	72	17	8	2	3	12
PACIFIC	2,119	1,505	368	135	61	41	157
Berkeley, Calif.	10	10	-	-	-	-	2
Fresno, Calif.	105	74	20	5	4	2	12
Glendale, Calif.	25	18	7	-	-	-	3
Honolulu, Hawaii	74	50	15	5	3	1	8
Long Beach, Calif.	136	95	29	6	4	2	22
Los Angeles, Calif.	624	427	113	49	21	5	20
Oakland, Calif.	75	52	9	10	-	4	7
Pasadena, Calif	27	26	-	-	-	1	5
Portland, Oreg. §	143	137	-	2	2	2	10
Sacramento, Calif.	155	109	21	14	7	4	13
San Diego, Calif.	152	104	26	5	9	8	21
San Francisco, Calif.	168	108	41	14	3	2	7
San Jose, Calif.	161	103	39	14	2	3	18
Seattle, Wash.	167	115	36	6	5	5	4
Spokane, Wash.	53	47	6	-	-	-	4
Tacoma, Wash.	44	30	6	5	1	2	1
TOTAL	13,256††	9,070	2,512	888	382	392	809

* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.
** Pneumonia and influenza.
† Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
†† Total includes unknown ages.
§ Data not available. Figures are estimates based on average of past 4 weeks.

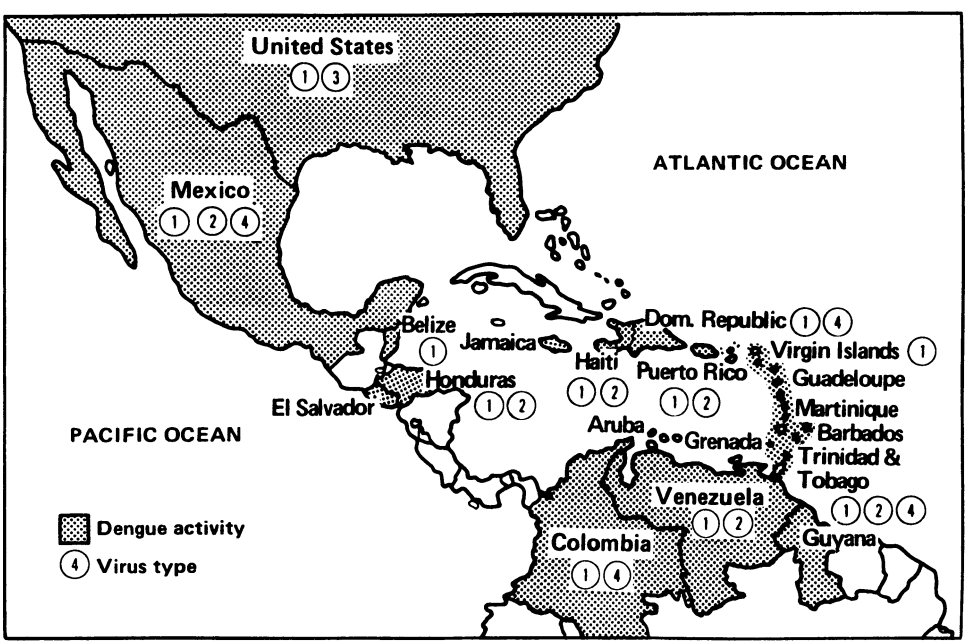
Dengue — Continued

Reported by Pan American Health Organization, Washington, DC; Caribbean Epidemiology Center, Port-of-Spain, Trinidad; Pasteur Institute, Cayenne, French Guiana; Instituto de Salubridad y Enfermedades Tropicales, Mexico City, Mexico; Gorgas Memorial Laboratory, Panama City, Panama; Instituto Nacional de Salud, Bogotá, Colombia; Instituto Nacional de Higiene "Rafael Rangel," Caracas, Venezuela; Puerto Rico Dept of Health, San Juan; Dengue Br, Div of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Dengue has been endemic in the Americas for over 200 years. Recently, the disease appears to be following a pattern similar to that in Southeast Asia 30 years ago, where many countries began to report increased occurrence of sporadic cases of DHF in association with increased incidence of dengue infection. This was followed by major epidemics of the disease in Southeast Asia, and today, DHF is one of the leading causes of hospitalization and death among children in many countries of that region. A similar sequence of events appears to be occurring in the Americas in the 1980s. For example, Cuba, where no dengue had been reported for 30 years, experienced a DEN-1 epidemic in 1977, followed in 1981 by a major DHF epidemic caused by DEN-2, with 158 fatalities. In 1978, Mexico reported its first cases of dengue in many years, and within 6 years, the disease became endemic in most coastal areas of the country. In 1984 the first DHF cases associated with epidemic dengue were reported.

Other countries in the region have also reported increased occurrence of sporadic cases of DHF. This sequence of events, plus the fact that all four serotypes are now endemic in the region, suggest that Caribbean Basin countries are at risk for outbreaks of DHF and underscore the need for more effective surveillance that will facilitate prevention and control of the disease.

FIGURE 1. Dengue — the Americas, 1984



Current Trends

Update: Influenza Activity — United States

Beginning in mid-January 1986, school outbreaks of influenza-like illness have been reported from many states. Confirmation of influenza as the etiologic agent for most of these outbreaks is not yet available. School outbreaks of influenza type B in Georgia and Iowa provide examples of the rapid spread of influenza among schoolchildren.

In Georgia, during the week ending January 18, type B virus was isolated from four Atlanta-area students in two influenza-like outbreaks at a college and an elementary school, where absenteeism peaked at 30%. During the week ending January 25, outbreaks of influenza-like illness were reported from schools in all areas of Georgia.

In Iowa, during the week ending January 18, seven type B influenza viruses were isolated from nine students among those with influenza-like illnesses in outbreaks in Marion County. Four type B viruses were isolated from 10 students tested in Webster County, and five type B viruses were isolated from four of 11 students tested and from a teacher in a Madison County school outbreak. During the week ending January 25, school outbreaks of influenza-like illness were reported from all areas of Iowa, with absentee rates in many schools in the 15%-25% range.

Influenza type B virus infections do not appear to be restricted to children and working-aged adults. A nursing-home outbreak has now been confirmed in Connecticut from January 3 to January 20, where 37 (32%) of the 115 residents developed influenza-like illnesses. An earlier nursing-home outbreak has been reported (*1*).

Tallies of patients with influenza-like illnesses seen by sentinel physicians* nationwide continued at intermediate levels averaging 8.0 for the reporting week ending January 8, 1986, and 7.7 for the reporting week ending January 15.

For the week ending January 25, five states (Delaware, Minnesota, New Jersey, North Carolina, and Virginia) and the District of Columbia reported widespread outbreaks of influenza-like illness, and 13 states (Connecticut, Idaho, Illinois, Iowa, Kansas, Kentucky, Maryland, Michigan, Oklahoma, Oregon, Pennsylvania, Wisconsin, and Utah) reported regional outbreaks. This represents an increase from the preceding week when only Delaware reported widespread outbreaks, and six states reported regional outbreaks.

Arkansas, Connecticut, Iowa, Michigan, Tennessee, Virginia, and the District of Columbia have recently reported their first influenza isolates—all type B—of the season. Thirty-two states and the District of Columbia have now reported influenza virus isolates this season (Figure 2). Twenty-eight states and the District of Columbia have reported type B isolates; 14 have reported type A(H3N2); and one, Hawaii, has reported type A(H1N1).

The percentage of pneumonia and influenza (P&I) deaths reported from the 121 U.S. cities for the week ending January 25 was 6.1%, compared with 6.2% for the preceding week. These are the first weeks that the P&I percentage has reached 6.0% since March 1985.

Reported by State and Territorial Epidemiologists; State Laboratory Directors; N Swack, PhD, State Hygienic Laboratory, University of Iowa, Iowa City; J Patterson, JD Smith, E Weir, T Munro, Div of Public Health, Georgia Dept of Human Resources; E Moses, Virus Laboratory, University of Arkansas for Medical Science, Little Rock; N Fithian, B Jones, M Zweig, Dept of Epidemiology and Public Health, Yale University School of Medicine, New Haven, Connecticut; Statistical Svcs Br, Div of Surveillance and Epidemiolog-

*Cases reported by those members of the American Academy of Family Physicians Research Panel who serve as sentinel physicians for influenza.

Influenza — Continued

ic Studies, Div of Field Svcs, Epidemiology Program Office, WHO Collaborating Center for Influenza, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Reference

1. CDC. Update: influenza activity—United States—and the role of rapid virus typing in improving amantadine use. MMWR 1986;35:46-7.

FIGURE 2. Influenza activity, by state — United States, 1986

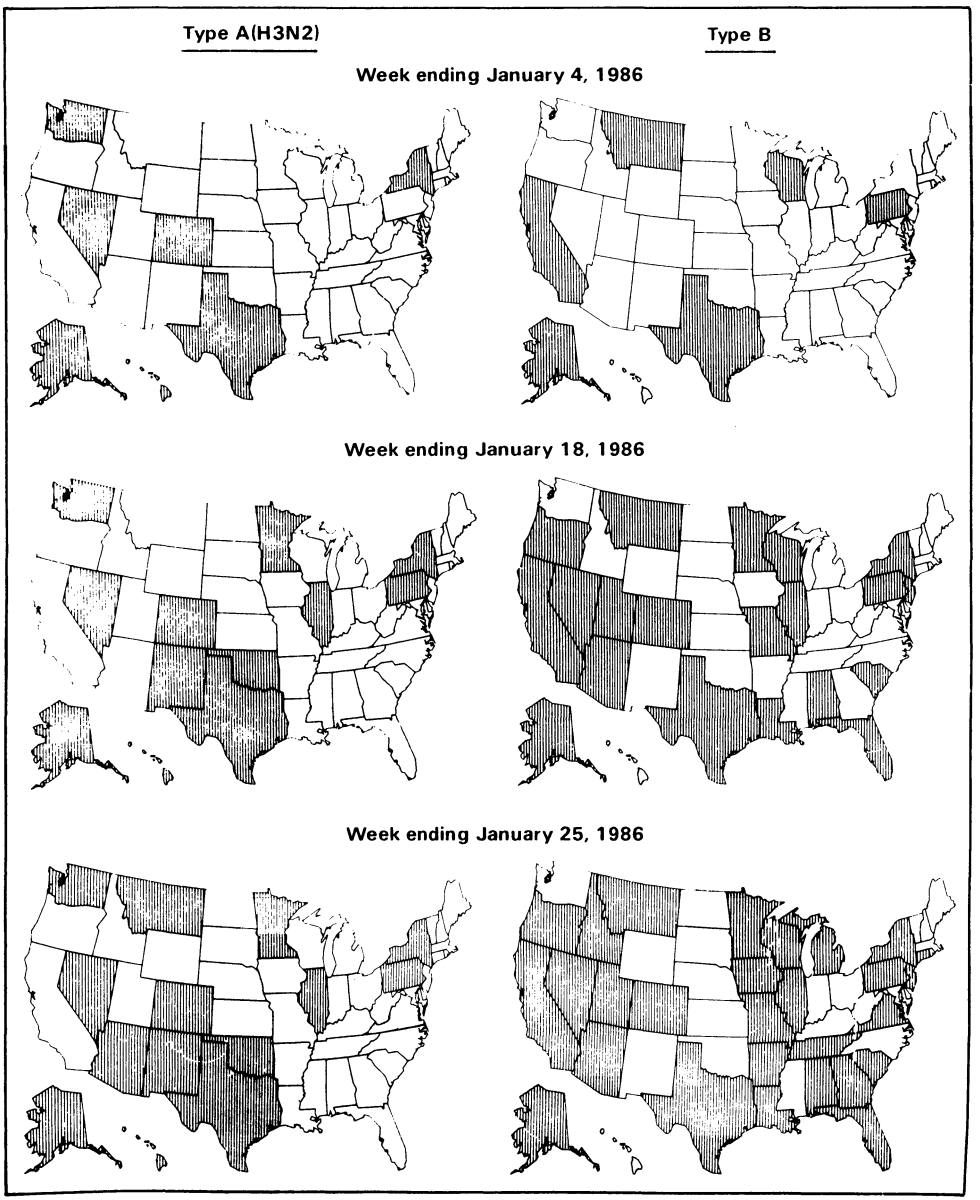
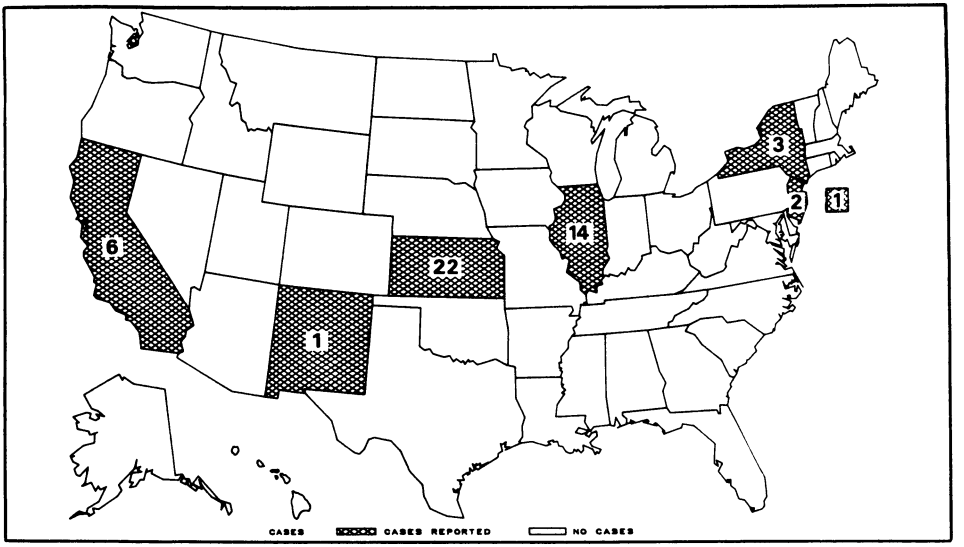


FIGURE I. Reported measles cases — United States, week 52, 1985 — week 3, 1986



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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.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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