

# MMWR

## MORBIDITY AND MORTALITY WEEKLY REPORT

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### Perspectives in Disease Prevention and Health Promotion

#### Irrigation-Pipe-Associated Electrocutation Deaths — Washington

In Washington State, investigators recently reviewed death certificates of all persons killed by electrocution during 1970-1979 and of all farmers killed by electrocution during 1950-1979. Analysis showed that farmers are significantly more likely than non-farmers to die of accidental electrocution (1).

An electrocution was considered irrigation-pipe-associated (IPA) when the death certificate or a newspaper article provided sufficient information to conclude that the death was irrigation pipe associated or when the death certificate suggested IPA electrocution. A death was considered occupationally related when the death certificate specified the injury occurred at work.

During Washington's agricultural growing season, 30- and 40-foot lengths of 3-inch aluminum pipe are used to irrigate fields. Electrocutations occur when these pipes touch electrical lines at the periphery of the fields while being hand carried by workers. In accordance with the recommendation of the National Electrical Safety Code of the American National Standards Institute, the Washington State Safety Code requires electrical lines near roads in rural districts to be at least 18 feet above the ground at their lowest point (2,3). Even when electrical lines fully meet this requirement, workers may contact electrical lines when tilting irrigation pipes upwards to empty them of water, dirt, or small animals.

During 1950-1979, 42 Washington farmers were recorded as having died from electrocution; based on overall mortality for the age and sex group involved, only 18 deaths

**TABLE 1. Electrocutation deaths among farmers — Washington, 1950-1979**

Occupation*	Total electrocution deaths				Irrigation-pipe-associated electrocution deaths
	Observed	Expected	Excess <sup>†</sup>	PMR <sup>§</sup>	
Farmer, general	18	8	10	233	10
Farm laborer	9	5	4	168	7
Orchardist	3	1	2	231	2
Orchardist laborer	4	1	3	289	2
Nursery worker	2	<0.5	2	400	0
Rancher	3	1	2	236	1
Dairy farmer	1	1	0	97	0
Wheat farmer	2	1	1	136	1
Totals	42	18	24	226	23

\*Classified by modified U.S. Census Bureau occupational code (4).

<sup>†</sup>Number of observed deaths minus number of expected deaths.

<sup>§</sup>Standardized proportionate mortality ratio.

*Electrocution Deaths – Continued*

from electrocution would have been expected. IPA electrocutions accounted for 23 (53%) of the 42 deaths recorded among farmers in general and among specific classifications of agricultural workers (Table 1).

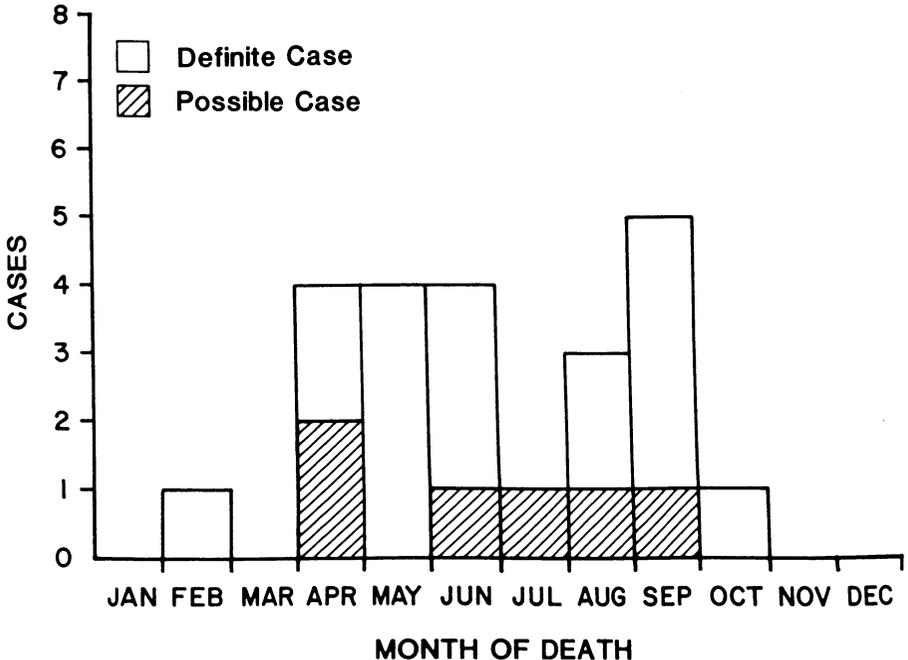
IPA electrocutions among farmers occurred more frequently during the 1970's than from 1950 to 1969. From 1950-1979, 91% of IPA electrocutions among farmers occurred from April through September (Figure 1).

Among farmers and non-farmers, IPA electrocutions during 1970-1979, compared with other electrocutions during those years, occurred most frequently in rural areas during planting and harvesting months. Ninety-three percent (28 of 30) of IPA electrocutions occurred from April through September, while 61% (72/118) of other electrocutions occurred during those months. Seventy-seven percent (23/30) of IPA electrocutions occurred among persons under 30 years of age, compared with 39% (46/118) non-IPA electrocutions. IPA electrocutions occurred more commonly than any other type of electrocution among persons under 20 years old (11/29, 38%).

Death certificates for 89 (59%) of 152 1970-1979 electrocutions specified that the lethal injury occurred at work. Most common among these occupational deaths were: 1) IPA electrocutions involving agricultural workers (18/89, 20%), and 2) electrical lines contacted by crane booms or other heavy equipment involving the equipment operators (18/89, 20%). Occupational groups among which fewer electrocutions occurred than among agricultural workers included: electrical linemen (12/89, 13%); electricians and construction workers (14/89, 16%); and tree trimmers (2/89, 2%).

*Reported by S Milham, MD, Div of Health, Washington State Dept of Social and Health Svcs; Hazard Eval-*

**FIGURE 1. Irrigation-pipe-associated electrocution deaths among farmers, by month of death – Washington, 1950-1979**



### *Electrocution Deaths – Continued*

*uation and Technical Assistance Br, Div of Surveillance, Hazard Evaluation, and Field Studies, National Institute for Occupational Safety and Health, CDC.*

**Editorial Note:** In Washington, irrigation pipes have been the most common source of all fatal human contact with electrical lines. From 1970 to 1979, IPA electrocutions accounted for 20% of all electrocutions, 38% of electrocutions among persons under 20 years of age, 20% of work-related electrocutions, and 80% of electrocutions among farmers. During that same period, IPA electrocutions accounted for 1,191 years of potential life lost before age 65 (an average of 39.7 years per person).\*

Because a death was defined as work-related only when the death certificate specified the injury occurred at work, the proportion of occupationally related IPA electrocutions may have been underestimated. Probably all 30 IPA electrocutions from 1970 to 1979, not just the 18 specified on death certificates, occurred at work. Therefore, the proportion of occupationally related IPA electrocutions may have been as high as 30% (30/101).

Possible measures to prevent these electrocutions include:

1. Education of the population at risk. Groups such as public utility companies and cooperative extension services have recognized the dangers of IPA electrocution and have advised caution when irrigation pipes are handled near electrical lines. All agencies and groups (including state and county health departments, utility companies, agriculture extension services, school districts, civic associations, and agricultural workers groups) in rural areas irrigated with metal pipes should be encouraged to remind agricultural workers of the life-threatening hazard of IPA electrocution.
2. Changes in the method of irrigation. Irrigation pipes on wheels and "solid-set" pipes (buried pipes with sprinkler heads above the ground) may prevent many IPA electrocutions. Despite high initial costs, these methods are labor-efficient over time and are replacing hand-carried irrigation pipes on large farms and orchards.

#### *References*

1. Milham S. Occupational mortality in Washington state, 1950-1979. National Institute for Occupational Safety and Health (in press).
2. Washington Administrative Code. 296-44. WAC Safety Standards-Electrical Construction Code. Olympia, Washington: The Statute Law Committee, 1980;5:757.
3. American National Standards Institute. National Safety Electrical Code, Part 2, Sections 20-28. "Safety Rules for the Installation and Maintenance of Overhead Supply and Communication Line." (IEEE) New York: American National Standards Institute, 1981.
4. U.S. Bureau of the Census. Classified index of occupations and industries, 1960 Census of Population. Washington, D.C.: U.S. Department of Commerce, 1960.

\*"Years of potential life lost before age 65" was calculated by adding the differences between age 65 and each victim's age at death. The average number of years of potential life lost was calculated by dividing the total by the number of victims.

## Current Trends

### **Flood Disasters and Immunization — California**

The heavy rains and floods in many areas of California this year have disrupted some community water supplies and sewerage systems. Such natural disasters often result in public concern about possible contagion from flood waters due to contamination by sewage or animal carcasses.

Studies of flood and earthquake disasters have shown that communicable disease outbreaks rarely result from such events (1). Nevertheless, there is often a public demand for

*Flood Disasters — Continued*

emergency mass immunization, especially against typhoid fever, despite the fact that epidemic typhoid has been conspicuously absent following natural disasters in the United States (where typhoid incidence is low) and in developing countries (where typhoid is endemic). Additionally, it takes several weeks for typhoid antibodies to develop, and even then, immunization provides only moderate protection against the disease. Also, adverse vaccine reactions are common (fever, headache, malaise, swelling and pain at the injection site) and burden flood victims and relief workers with more stress. Mass tetanus immunization programs are also not indicated, as floods pose no additional risk of tetanus. Management of flood-associated wounds should include appropriate evaluation of tetanus immunity (and immunization if indicated) as at any other time.

Of greatest importance in preventing enteric disease transmission when water and sewerage systems have been compromised is to assure that water and food supplies are safe to consume. When water contamination has occurred or is suspected (e.g., drop in water pressure, discoloration, turbidity, or unusual odors) only water bottled or trucked from a safe source, water brought to a vigorous boil, or water appropriately disinfected\* should be con-

\*5 drops of 2% tincture of iodine per quart of clear water, or ½ teaspoon of household chlorine bleach per 2 gallons of water, each with 30 minutes of contact time). (Continued on page 178)

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

Disease	13th Week Ending			Cumulative, 13th Week Ending		
	April 2, 1983	April 3, 1982	Median 1978-1982	April 2, 1983	April 3, 1982	Median 1978-1982
Aseptic meningitis	78	74	58	1,042	988	841
Encephalitis: Primary (arthropod-borne & unsp.)	21	16	10	219	202	151
Post-infectious	1	1	3	17	10	39
Gonorrhea: Civilian	15,260	16,331	17,825	221,915	231,314	236,316
Military	463	503	469	5,826	6,793	6,812
Hepatitis: Type A	466	482	482	6,080	5,746	6,765
Type B	457	488	361	5,344	4,994	3,933
Non A, Non B	59	58	N	774	466	N
Unspecified	159	164	185	1,948	2,123	2,557
Legionellosis	10	8	N	138	78	N
Leprosy	7	7	5	62	40	40
Malaria	11	19	18	153	190	190
Measles: Total	64	40	501	458	212	3,303
Indigenous	36	N	N	388	N	N
Imported*	28	N	N	70	N	N
Meningococcal infections: Total	64	92	80	815	890	890
Civilian	63	92	80	803	886	886
Military	1	-	-	12	4	9
Mumps	89	237	285	1,057	1,698	3,648
Pertussis	37	40	23	339	264	264
Rubella (German measles)	35	96	111	281	573	1,189
Syphilis (Primary & Secondary): Civilian	481	549	484	8,152	8,477	6,600
Military	21	10	7	125	96	96
Toxic-shock syndrome	7	N	N	96	N	N
Tuberculosis	469	554	582	5,343	5,858	6,082
Tularemia	-	5	1	37	22	22
Typhoid fever	15	15	12	83	105	105
Typhus fever, tick-borne (RMSF)	4	1	1	17	19	14
Rabies, animal	124	146	146	1,376	1,265	1,265

**TABLE II. Notifiable diseases of low frequency, United States**

	Cum. 1983		Cum. 1983
Anthrax	-	Plague	-
Botulism: Foodborne	6	Poliomyelitis: Total	1
Infant	12	Paralytic	1
Other	-	Psittacosis (Upstate N.Y. 1, Calif. 1)	20
Brucellosis (Miss. 1)	22	Rabies, human	2
Cholera	-	Tetanus	12
Congenital rubella syndrome	8	Trichinosis (N.J. 1, Tenn. 2)	11
Diphtheria	-	Typhus fever, flea-borne (endemic, murine)	3
Leptospirosis (Hawaii 2)	6		

\*Twenty-eight of the 64 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending  
April 2, 1983 and April 3, 1982 (13th week)

Reporting Area	Aseptic Meningitis		Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy	Malaria
	1983	Cum. 1983	Primary	Post-infectious	Cum. 1983	Cum. 1982	A	B	NA,NB	Unspecified			
			1983	Cum. 1983			1983	1983	1983	1983			
UNITED STATES	78	219	17		221,915	231,314	466	457	59	159	10	62	153
NEW ENGLAND	1	9	-		5,811	5,552	11	15	4	15	3	-	2
Maine	-	-	-		322	254	1	1	-	-	-	-	-
N.H.	-	-	-		167	196	-	-	-	-	-	-	-
Vt.	-	-	-		91	112	-	-	1	-	-	-	-
Mass.	-	6	-		2,589	2,508	4	5	1	15	-	-	-
R.I.	-	-	-		308	400	1	5	1	-	-	-	1
Conn.	1	3	-		2,334	2,082	5	4	1	-	3	-	1
MID ATLANTIC	10	28	3		29,002	27,866	64	84	7	5	-	6	24
Upstate N.Y.	4	9	-		4,193	4,416	16	19	1	4	-	-	9
N.Y. City	1	6	-		12,434	12,073	10	25	-	-	-	6	8
N.J.	4	4	-		5,203	4,751	15	29	3	1	-	-	4
Pa.	1	9	3		7,172	6,626	23	11	3	-	-	-	3
E.N. CENTRAL	2	45	3		28,181	32,675	37	44	4	9	5	2	7
Ohio	-	21	2		7,986	8,943	7	11	1	4	4	1	-
Ind.	-	4	1		3,727	3,909	14	14	1	4	-	-	-
Ill.	-	-	-		5,191	8,817	5	4	-	-	-	1	1
Mich.	2	19	-		8,438	7,969	11	15	2	1	1	-	6
Wis.	-	1	-		2,839	3,037	-	-	-	-	-	-	-
W.N. CENTRAL	3	28	2		10,703	10,711	9	12	3	1	-	-	5
Minn.	2	13	-		1,539	1,566	6	1	1	-	-	-	1
Iowa	-	14	-		1,110	1,181	-	6	1	-	-	-	2
Mo.	-	-	-		5,212	4,797	1	5	-	-	-	-	1
N. Dak.	-	-	-		103	138	-	-	-	-	-	-	-
S. Dak.	-	-	1		310	308	2	-	-	-	-	-	-
Nebr.	-	1	-		570	683	-	-	1	1	-	-	-
Kans.	1	-	1		1,859	2,018	-	-	-	-	-	-	1
S. ATLANTIC	11	33	3		58,901	58,725	40	117	6	25	1	2	21
Del.	2	-	-		1,054	939	1	10	-	1	-	-	-
Md.	-	4	-		7,485	7,854	1	23	1	-	-	-	3
D.C.	-	-	-		4,003	3,021	-	4	-	-	-	-	2
Va.	2	12	1		4,850	5,106	2	16	2	7	1	-	6
W. Va.	-	-	-		568	694	-	-	-	-	-	-	1
N.C.	3	7	-		7,982	9,708	3	5	-	1	-	-	-
S.C.	-	1	-		5,644	5,646	2	20	1	5	-	-	3
Ga.	1	1	-		13,807	9,483	6	18	-	1	-	-	1
Fla.	3	8	2		13,508	16,274	25	21	2	10	-	2	5
E.S. CENTRAL	3	9	2		19,383	19,315	59	19	2	3	-	-	2
Ky.	-	-	-		2,366	2,584	48	1	-	1	-	-	-
Tenn.	1	1	-		7,609	7,346	1	13	2	2	-	-	-
Ala.	1	8	2		6,030	5,881	7	2	-	-	-	-	1
Miss.	1	-	-		3,378	3,504	3	3	-	-	-	-	1
W.S. CENTRAL	3	19	-		30,910	32,772	69	29	-	53	1	3	10
Ark.	-	-	-		2,535	2,728	-	-	-	3	-	-	1
La.	-	2	-		4,884	5,953	16	6	-	1	-	-	-
Okl.	2	4	-		3,738	3,404	8	3	-	3	1	-	5
Tex.	1	13	-		19,753	20,687	45	20	-	46	-	3	4
MOUNTAIN	8	9	2		6,763	8,409	43	24	5	14	-	11	8
Mont.	-	-	-		333	359	1	2	-	1	-	-	-
Idaho	-	-	-		351	346	2	2	-	1	-	-	-
Wyo.	-	1	-		191	233	-	-	-	-	-	-	-
Colo.	4	2	-		1,971	2,283	7	6	2	2	-	2	4
N. Mex.	-	-	-		905	1,042	4	7	-	2	-	-	2
Ariz.	4	1	2		1,605	2,343	16	3	3	4	-	9	2
Utah	-	5	-		314	375	10	-	-	2	-	-	-
Nev.	-	-	-		1,093	1,428	3	4	-	2	-	-	-
PACIFIC	37	39	2		32,261	35,289	134	113	28	34	-	38	74
Wash.	4	3	-		2,275	3,035	5	6	4	1	-	3	2
Oreg.	-	-	-		1,678	2,026	9	5	4	1	-	1	4
Calif.	23	34	2		26,909	28,689	114	97	20	32	-	24	68
Alaska	-	-	-		743	916	-	2	-	-	-	-	-
Hawaii	10	2	-		656	623	6	3	-	-	-	10	-
Guam	U	-	-		26	33	U	U	U	U	U	-	-
P.R.	-	-	-		630	790	U	4	-	5	-	-	1
V.I.	-	-	-		74	53	-	-	-	-	-	-	-
Pac. Trust Terr.	U	-	-		-	110	U	U	U	U	U	-	-

N: Not notifiable

U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending  
April 2, 1983 and April 3, 1982 (13th week)

Reporting Area	Measles (Rubeola)					Menin- gococcal infections	Mumps			Pertussis			Rubella		
	Indigenous		Imported*		Total		1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982
	1983	Cum. 1983	1983	Cum. 1983	Cum. 1982										
UNITED STATES	36	388	28	70	212	815	89	1,057	1,698	37	339	264	35	281	573
NEW ENGLAND	-	1	-	1	6	43	3	50	99	2	15	19	-	7	8
Maine	-	-	-	-	-	6	-	8	21	-	-	-	-	-	-
N.H.	-	-	-	-	-	1	2	12	9	-	2	4	-	-	8
Vt.	-	-	-	-	2	-	-	7	4	-	2	-	-	1	-
Mass.	-	1	-	-	1	15	1	11	49	2	10	6	-	6	-
R.I.	-	-	-	-	-	2	-	4	7	-	1	7	-	-	-
Conn.	-	-	-	1	3	19	-	8	9	-	-	2	-	-	-
MID ATLANTIC	-	3	-	8	25	119	11	85	101	8	63	36	2	17	41
Upstate N.Y.	-	-	-	2	13	43	9	37	25	7	34	20	2	11	22
N.Y. City	-	3	-	5	10	13	1	6	18	1	8	6	-	2	10
N.J.	-	-	-	1	-	18	1	15	20	-	8	4	-	1	9
Pa.	-	-	-	-	2	45	-	27	38	-	13	6	-	3	-
E.N. CENTRAL	21	220	28	38	22	129	40	528	1,003	9	86	93	3	36	59
Ohio	-	-	-	1	-	57	13	304	718	2	32	18	-	1	-
Ind.	-	159	-	-	1	21	5	14	19	4	7	9	2	2	8
Ill.	21	61	28 <sup>†</sup>	32	12	18	7	38	48	2	38	40	1	15	18
Mich.	-	-	-	5	9	30	15	142	147	1	6	7	-	9	18
Wis.	-	-	-	-	-	3	-	30	71	-	3	19	-	9	15
W.N. CENTRAL	-	-	-	-	1	52	12	81	59	4	19	12	2	18	19
Minn.	-	-	-	-	-	9	1	11	3	3	7	3	-	3	1
Iowa	-	-	-	-	-	7	-	29	18	-	2	-	-	-	-
Mo.	-	-	-	1	-	24	-	4	5	-	2	5	-	-	12
N. Dak.	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	2	-	-	-	-	-	2	-	-	1
Nebr.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Kans.	-	-	-	-	-	9	11	37	33	1	8	1	2	15	5
S. ATLANTIC	7	81	-	4	19	188	6	47	128	2	46	27	5	24	16
Del.	-	-	-	-	-	-	1	4	3	-	-	3	-	-	-
Md.	-	1	-	1	-	23	1	9	10	-	-	-	-	1	4
D.C.	-	-	-	-	1	2	-	-	-	-	-	1	-	-	-
Va.	-	1	-	1	10	27	3	12	17	1	21	4	-	1	6
W. Va.	-	-	-	-	1	1	1	11	61	-	2	3	-	-	1
N.C.	-	-	-	-	-	35	-	4	4	-	1	2	-	1	-
S.C.	-	-	-	3	-	24	-	2	7	-	2	4	-	-	1
Ga.	-	6	-	-	-	30	-	5	2	-	14	6	-	4	1
Fla.	7	73	-	-	6	46	-	-	24	1	6	4	5	17	3
E.S. CENTRAL	-	-	-	-	5	49	2	20	20	-	4	5	-	5	13
Ky.	-	-	-	-	1	9	1	8	7	-	2	-	-	5	13
Tenn.	-	-	-	-	4	16	1	9	8	-	2	4	-	-	-
Ala.	-	-	-	-	-	18	-	-	3	-	-	-	-	-	-
Miss.	-	-	-	-	-	6	-	3	2	-	-	1	-	-	-
W.S. CENTRAL	2	32	-	11	4	98	5	94	59	4	39	13	10	52	35
Ark.	-	-	-	11	-	5	-	1	3	-	1	-	-	-	-
La.	-	-	-	-	-	18	-	-	1	-	2	-	9	9	-
Okla.	-	-	-	-	-	13	-	-	-	3	10	2	-	-	1
Tex.	2	32	-	-	4	62	5	93	55	1	26	11	1	43	34
MOUNTAIN	-	-	-	1	-	28	-	33	33	6	52	13	-	11	19
Mont.	-	-	-	-	-	1	-	1	3	-	1	-	-	2	1
Idaho	-	-	-	-	-	2	-	1	2	-	2	1	-	2	-
Wyo.	-	-	-	-	-	1	-	-	2	-	4	1	-	1	4
Colo.	-	-	-	1	-	14	-	3	8	4	32	4	-	-	1
N. Mex.	-	-	-	-	-	4	-	-	-	-	4	3	-	-	2
Ariz.	-	-	-	-	-	3	-	21	10	-	6	4	-	4	4
Utah	-	-	-	-	-	3	-	6	6	2	3	-	-	1	5
Nev.	-	-	-	-	-	-	-	1	2	-	-	-	-	1	2
PACIFIC	6	51	-	7	130	109	10	119	196	2	15	46	13	111	363
Wash.	-	1	-	-	14	17	2	20	34	-	1	8	-	1	15
Oreg.	1	5	-	-	-	12	-	-	-	1	2	5	-	6	2
Calif.	5	44	-	7	114	77	7	85	157	1	12	33	12	104	342
Alaska	-	-	-	-	-	-	-	8	4	-	-	-	-	-	1
Hawaii	-	1	-	-	2	3	1	6	1	-	-	-	-	-	3
Guam	U	-	U	-	-	-	U	-	1	U	-	-	U	-	1
P.R.	-	26	-	-	43	6	1	37	14	-	3	5	-	1	3
V.I.	-	-	-	5	-	-	-	-	-	-	-	-	-	1	-
Pac. Trust Terr.	U	-	U	-	-	-	U	-	-	U	-	-	U	-	-

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

U. Unavailable

<sup>†</sup>International

<sup>§</sup>Out-of-state

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending  
April 2, 1983 and April 3, 1982 (13th week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	8,152	8,477	7	469	5,343	37	83	17	1,376
NEW ENGLAND	202	170	-	14	139	-	3	1	2
Maine	4	-	-	1	10	-	-	-	2
N.H.	7	-	-	-	13	-	-	-	-
Vt.	1	-	-	-	2	-	-	-	-
Mass.	131	118	-	10	65	-	3	1	-
R.I.	5	11	-	3	16	-	-	-	-
Conn.	54	41	-	-	33	-	-	-	-
MID ATLANTIC	978	1,131	4	86	1,023	-	19	-	27
Upstate N.Y.	43	126	-	5	174	-	3	-	20
N.Y. City	603	696	1	23	390	-	10	-	-
N.J.	190	131	-	16	222	-	6	-	-
Pa.	142	178	3	42	237	-	-	-	7
E.N. CENTRAL	347	552	-	26	773	-	10	2	89
Ohio	121	84	-	9	125	-	3	1	13
Ind.	46	62	-	1	91	-	1	-	5
Ill.	95	288	-	-	337	-	2	-	42
Mich.	61	88	-	14	183	-	4	1	-
Wis.	24	30	-	2	37	-	-	-	29
W.N. CENTRAL	97	161	1	13	180	12	1	3	190
Minn.	44	25	-	4	31	-	-	-	40
Iowa	4	7	1	2	25	-	-	-	57
Mo.	32	97	-	5	87	8	1	2	25
N. Dak.	-	4	-	-	-	-	-	1	17
S. Dak.	-	-	-	-	16	-	-	-	14
Nebr.	5	5	-	1	5	2	-	-	12
Kans.	12	23	-	1	16	2	-	-	25
S. ATLANTIC	2,136	2,322	1	114	1,040	11	12	2	528
Del.	12	6	-	-	7	-	-	-	-
Md.	110	139	-	3	103	5	4	1	231
D.C.	85	147	1	2	33	-	-	-	1
Va.	154	170	-	13	90	1	3	-	203
W. Va.	6	6	-	2	48	-	2	-	28
N.C.	199	182	-	25	117	4	1	-	3
S.C.	157	113	-	9	91	-	1	-	6
Ga.	410	497	-	32	205	1	-	-	47
Fla.	1,003	1,062	-	28	346	-	1	1	9
E.S. CENTRAL	566	638	-	38	508	5	1	3	130
Ky.	35	30	-	10	140	-	-	-	25
Tenn.	151	169	-	11	139	4	1	1	92
Ala.	228	220	-	7	146	-	-	2	13
Miss.	152	219	-	10	83	1	-	-	-
W.S. CENTRAL	2,131	2,099	-	63	557	7	2	4	270
Ark.	53	53	-	9	46	5	-	1	42
La.	410	426	-	16	91	2	-	-	6
Okla.	59	41	-	4	63	-	-	1	32
Tex.	1,609	1,579	-	34	357	-	2	2	190
MOUNTAIN	192	232	1	6	139	1	4	1	50
Mont.	4	1	-	1	13	-	-	-	39
Idaho	3	16	1	-	10	-	-	1	-
Wyo.	3	9	-	-	2	-	-	-	-
Colo.	48	76	-	2	10	-	1	-	-
N. Mex.	67	43	-	3	27	1	-	-	2
Ariz.	38	46	-	-	57	-	3	-	9
Utah	8	6	-	-	11	-	-	-	-
Nev.	21	35	-	-	9	-	-	-	-
PACIFIC	1,503	1,172	-	109	984	1	31	1	90
Wash.	39	37	-	7	58	-	2	-	-
Oreg.	29	35	-	5	48	-	-	-	-
Calif.	1,405	1,069	-	93	810	1	28	1	84
Alaska	7	6	-	-	4	-	-	-	6
Hawaii	23	25	-	4	64	-	1	-	-
Guam	-	1	U	U	-	-	-	-	-
P.R.	171	165	-	-	117	-	-	-	14
V.I.	7	-	-	1	1	-	-	-	-
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,\* week ending  
April 2, 1983 (13th week)

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	663	457	154	24	16	12	65	S. ATLANTIC	1,382	834	346	90	52	60	62
Boston, Mass.	205	122	55	12	10	6	20	Atlanta, Ga.	158	90	38	16	7	7	5
Bridgport, Conn.	44	33	9	1	1	-	2	Baltimore, Md.	265	169	62	16	8	10	7
Cambridge, Mass.	28	25	3	-	-	-	3	Charlotte, N.C.	74	43	15	8	5	3	6
Fall River, Mass.	36	26	8	2	-	-	1	Jacksonville, Fla.	95	67	18	4	4	2	2
Hartford, Conn.	44	25	14	2	2	1	2	Miami, Fla.	90	55	19	3	7	6	1
Lowell, Mass.	25	22	3	-	-	-	4	Norfolk, Va.	60	34	15	4	2	5	4
Lynn, Mass.	22	17	5	-	-	-	4	Richmond, Va.	85	44	34	3	1	3	8
New Bedford, Mass.	13	9	4	-	-	-	2	Savannah, Ga.	53	30	14	7	1	1	2
New Haven, Conn.	27	22	3	1	-	1	2	St. Petersburg, Fla.	111	79	24	4	1	3	5
Providence, R.I.	51	32	14	1	2	2	7	Tampa, Fla.	72	45	17	2	3	5	7
Somerville, Mass.	8	5	3	-	-	-	2	Washington, D.C.	260	147	73	18	10	12	8
Springfield, Mass.	52	39	12	1	-	-	7	Wilmington, Del.	59	31	17	5	3	3	7
Waterbury, Conn.	38	32	5	-	1	-	5	E.S. CENTRAL	731	482	158	44	19	28	41
Worcester, Mass.	70	48	16	4	-	2	7	Birmingham, Ala.	130	84	27	9	4	6	3
MID. ATLANTIC	2,484	1,653	550	141	58	77	110	Chattanooga, Tenn.	31	20	7	3	1	-	7
Albany, N.Y.	57	37	12	3	2	3	3	Knoxville, Tenn.	36	28	7	1	-	-	-
Allentown, Pa.	17	13	4	-	-	-	-	Louisville, Ky.	128	89	30	4	1	4	11
Buffalo, N.Y.	125	88	23	5	3	6	8	Memphis, Tenn.	187	127	38	10	2	10	9
Camden, N.J.	24	13	8	1	-	2	1	Mobile, Ala.	56	37	11	4	2	2	3
Elizabeth, N.J.	23	13	10	-	-	-	-	Montgomery, Ala.	59	35	16	3	1	4	4
Erie, Pa.†	53	34	16	-	2	1	4	Nashville, Tenn.	104	62	22	10	8	2	4
Jersey City, N.J.	51	32	9	4	2	4	-	W.S. CENTRAL	1,258	751	287	103	48	69	47
N.Y. City, N.Y.	1,392	913	309	97	33	40	54	Austin, Tex.	46	32	6	4	2	2	-
Newark, N.J.	45	14	15	3	3	5	1	Baton Rouge, La.	45	29	9	4	2	1	2
Paterson, N.J.	24	14	8	1	-	1	-	Corpus Christi, Tex.	41	29	8	3	1	-	-
Philadelphia, Pa.†	216	142	53	10	7	4	7	Dallas, Tex.	207	120	50	17	9	11	2
Pittsburgh, Pa.†	52	36	14	2	-	-	4	El Paso, Tex.	46	28	9	1	5	3	4
Reading, Pa.	40	32	7	1	-	-	3	Fort Worth, Tex.	99	62	20	6	3	8	5
Rochester, N.Y.	121	88	23	2	3	5	14	Houston, Tex.	259	133	69	35	16	6	8
Schenectady, N.Y.	23	16	5	1	-	1	1	Little Rock, Ark.	105	73	20	6	2	4	5
Scranton, Pa.†	29	21	3	2	1	2	2	New Orleans, La.	139	76	28	9	2	24	2
Syracuse, N.Y.	94	69	18	3	2	2	4	San Antonio, Tex.	166	102	45	8	5	6	12
Trenton, N.J.	40	30	6	3	-	1	-	Shreveport, La.	36	25	5	4	-	2	1
Utica, N.Y.	20	14	4	2	-	-	-	Tulsa, Okla.	69	42	18	6	1	2	6
Yonkers, N.Y.	38	34	3	1	-	-	4	MOUNTAIN	651	421	151	34	20	25	28
E.N. CENTRAL	2,059	1,359	493	114	46	47	96	Albuquerque, N.Mex	60	43	12	1	3	1	3
Akron, Ohio	61	33	23	3	2	-	2	Colo. Springs, Colo.	34	22	9	2	-	1	2
Canton, Ohio	32	24	8	-	-	-	9	Denver, Colo.	131	86	30	7	1	7	6
Chicago, Ill.	409	251	107	30	11	10	9	Las Vegas, Nev.	80	49	22	6	1	2	4
Cincinnati, Ohio	136	88	32	7	6	3	15	Ogden, Utah §	22	21	-	-	1	-	1
Cleveland, Ohio	156	104	37	13	1	1	5	Phoenix, Ariz.	155	99	39	7	5	5	-
Columbus, Ohio	137	84	39	7	5	2	7	Pueblo, Colo.	19	12	2	3	1	1	-
Dayton, Ohio	82	48	21	5	2	6	-	Salt Lake City, Utah	42	19	11	4	3	5	1
Detroit, Mich.	256	164	62	21	3	6	13	Tucson, Ariz.	108	70	26	4	5	3	11
Evansville, Ind.	48	37	7	3	1	-	1	PACIFIC	2,020	1,395	375	116	55	74	121
Fort Wayne, Ind.	55	40	9	2	3	1	2	Berkeley, Calif.	22	11	10	-	1	-	2
Gary, Ind.	7	4	1	2	-	-	-	Fresno, Calif.	69	50	14	2	-	3	5
Grand Rapids, Mich.	49	31	14	-	3	1	3	Glendale, Calif.	58	50	4	2	2	-	2
Indianapolis, Ind.	165	113	40	5	1	6	6	Honolulu, Hawaii	76	51	18	2	2	3	4
Madison, Wis.	37	19	10	4	2	2	5	Long Beach, Calif.	105	73	20	6	2	4	5
Milwaukee, Wis.	127	87	33	3	2	2	4	Los Angeles, Calif.	664	442	122	47	21	31	30
Peoria, Ill.	30	24	2	-	1	3	4	Oakland, Calif.	81	53	17	5	1	5	3
Rockford, Ill.	52	42	5	1	2	2	8	Pasadena, Calif.	34	21	10	3	-	-	2
South Bend, Ind.	39	32	7	-	-	-	4	Portland, Ore.	129	97	19	5	2	4	8
Toledo, Ohio	124	87	28	6	1	2	7	Sacramento, Calif.	57	38	14	2	2	1	4
Youngstown, Ohio	57	47	8	2	-	-	1	San Diego, Calif. §	37	125	3	1	2	4	12
W.N. CENTRAL	719	487	160	28	16	28	31	San Francisco, Calif.	163	92	39	19	4	9	9
Des Moines, Iowa	46	32	9	1	1	3	3	San Jose, Calif.	179	114	40	12	8	5	15
Duluth, Minn.	38	25	10	3	-	-	2	Seattle, Wash.	147	104	30	7	4	2	8
Kansas City, Kans.	32	27	5	-	-	-	2	Spokane, Wash.	60	48	8	1	2	1	6
Kansas City, Mo.	121	82	25	6	1	7	6	Tacoma, Wash.	39	26	7	2	2	2	6
Lincoln, Neb.	41	31	9	-	-	1	5	TOTAL	11,967 <sup>††</sup>	7,839	2,674	694	330	420	601
Minneapolis, Minn.	69	47	14	2	2	4	1								
Omaha, Neb.	88	56	25	5	1	1	3								
St. Louis, Mo.	137	88	33	6	5	5	1								
St. Paul, Minn.	74	56	11	2	3	2	3								
Wichita, Kans.	73	43	19	3	3	5	6								

\* 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 4 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.

**TABLE V. Years of potential life lost, deaths, and death rates, by cause of death, and estimated number of physician contacts, by principal diagnosis, United States**

Cause of morbidity or mortality (Ninth Revision ICD, 1975)	Years of potential life lost before age 65 by persons dying in 1981 <sup>1</sup>	Estimated mortality November 1982		Estimated number of physician contacts November 1982 <sup>4</sup>
		Number <sup>2</sup>	Annual Rate/100,000 <sup>3</sup>	
ALL CAUSES (TOTAL)	9,879,590	156,720	820.8	85,608,000
Accidents and adverse effects (E800-E807, E810-E825, E826-E949)	2,587,140	7,450	39.0	4,215,000
Malignant neoplasms (140-208)	1,821,900	34,540	180.9	1,516,000
Diseases of heart (390-398, 402, 404-429)	1,621,290	59,460	311.4	4,172,000
Suicides, homicides (E950-E978)	1,403,560	3,680	19.3	—
Cerebrovascular diseases (430-438)	275,000	12,350	64.7	758,000
Chronic liver disease and cirrhosis (571)	267,350	2,250	11.8	108,000
Pneumonia and influenza <sup>5</sup> (480-487)	123,420	3,740	19.6	1,142,000
Chronic obstructive pulmonary diseases and allied conditions (490-496)	116,280	4,700	24.6	1,623,000
Diabetes mellitus (250)	105,960	2,790	14.6	1,916,000
Prenatal care <sup>6</sup>				1,996,000
Infant mortality <sup>6</sup>		3,300	10.9 / 1,000 live births	

<sup>1</sup>Years of potential life lost for persons between 1 year and 65 years old at the time of death are derived from the number of deaths in each age category as reported by the National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSr), Vol. 30, No. 13, December 20, 1982, multiplied by the difference between 65 years and the age at the mid-point of each category. As a measure of mortality, "Years of potential life lost" underestimates the importance of diseases that contribute to death without being the underlying cause of death.

<sup>2</sup>The number of deaths is estimated by CDC by multiplying the estimated annual mortality rates (MVSr Vol. 31, No. 12, March 14, 1983, pp. 8-9) and the provisional U.S. population in that month (MVSr Vol. 31, No. 11, February 11, 1983, p.1) and dividing by the days in the month as a proportion of the days in the year.

<sup>3</sup>Annual mortality rates are estimated by NCHS (MVSr Vol. 31, No. 12, March 14, 1983, pp. 8-9), using the underlying cause of death from a systematic sample of 10% of death certificates received in state vital statistics offices during the month and the provisional population of those states included in the sample for that month.

<sup>4</sup>IMS America *National Disease and Therapeutic Index* (NDTI), Monthly Report, November 1982, Section III. This estimate comprises the number of office, hospital, and nursing home visits and telephone calls prompted by each medical condition based on a stratified random sample of office-based physicians (2,100) who record all private patient contacts for 2 consecutive days each quarter.

<sup>5</sup>Data for "infectious diseases and their sequelae" as a cause of death and physician visits comparable to other multiple-code categories (e.g., "malignant neoplasms") are not presently available.

<sup>6</sup>"Prenatal care" (NDTI) and "Infant mortality" (MVSr Vol. 31, No. 11, February 11, 1983, p.1) are included in the table because "Years of potential life lost" does not reflect deaths of children < 1 year.

### *Flood Disasters — Continued*

sumed until health authorities indicate that public supplies are again safe to drink. Questions about the safety of foods exposed to flood waters or potentially spoiled due to interrupted refrigeration can be directed to local public health sanitarians.

Flood victims and relief workers should always wash their hands with soap and water (boiled or disinfected when no regular safe supply is available) before preparing or eating food, after toilet use, and after participating in flood cleanup or handling potentially contaminated articles.

While communicable disease outbreaks in the United States are rare after flooding, some potential does exist for waterborne disease transmission (e.g., enterotoxigenic *Escherichia coli*, *Shigella*, *Salmonella*, hepatitis A, Norwalk virus agents, and even such infections as leptospirosis and tularemia); therefore, flood-affected communities should be under close surveillance.

Mass immunization programs at the time of natural disasters are counterproductive and divert limited manpower and resources from other relief tasks. Such immunization programs may also give the public a false sense of security, leading to neglect of the basic rules of hygiene and sanitation that are far more important than immunizations in preventing infectious diseases that flood waters may spread.

*Reported in California Morbidity, March 11, 1983 (9).*

#### *Reference*

1. Western KA. Epidemiologic surveillance after natural disaster. Washington, DC: PAHO/WHO, 1982 (Scientific publication no. 420).

## **Measles Importations — United States, 1982**

During 1982, 118 measles cases, an average of 2.3 weekly, were imported into the United States\*; they represented 7.0% of the provisional total of 1,697 measles cases reported to CDC during that period. Thus, the proportion of cases reported as being imported increased from 1981's 3.6% (114/3,124).

The 118 persons with imported measles were travelers who arrived in the United States from 32 different countries. Eight countries accounted for 62.7% (74) of the importations: England—19 (16.1%), Mexico—12 (10.2%), Philippines—10 (8.5%), India—nine (7.6%), France—seven (5.9%), Korea—seven (5.9%), Scotland—five (4.2%), and Spain—five (4.2%). The other 24 countries each contributed four or fewer importations during the year.

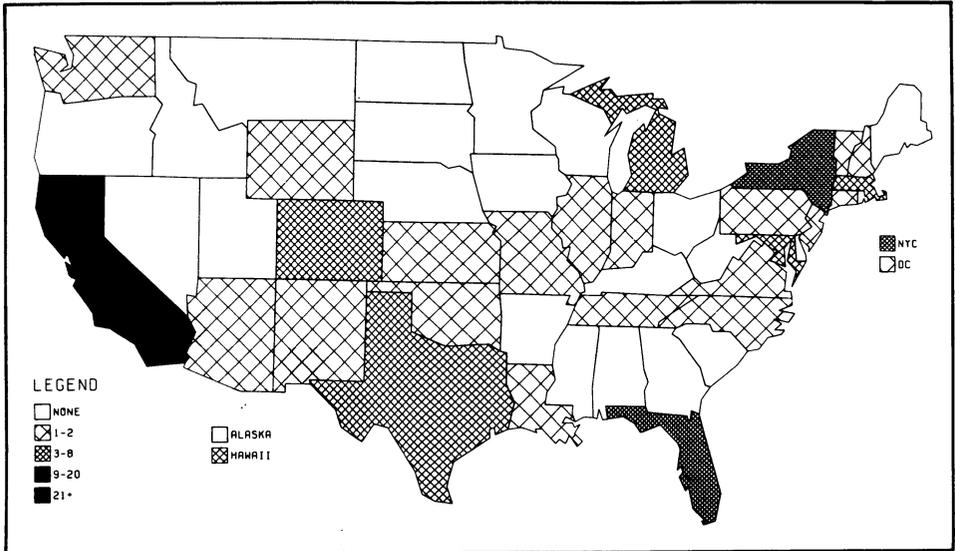
Twenty-seven states, New York City, and the District of Columbia reported measles importations (Figure 2). Five areas accounted for 61.0% (72) of reported cases: California—34 (28.8%), Florida—11 (9.3%), New York City—11 (9.3%), New York State (excluding New York City)—nine (7.6%), and Hawaii—seven (5.9%).

Returning U.S. citizens accounted for 67 (56.8%) of the 1982 importations, compared with 66 (57.9%) of 114 in 1981.

Measles transmission to persons in the United States was documented in 19 (16.1%) of the 118 cases, with 613 cases resulting from importations. Thus, imported and import-related cases accounted for 43.1% of all measles cases reported in 1982. Large import-related measles outbreaks occurred in Florida, Kansas, Michigan, New York, and Texas.

*Reported by Div of Immunization, Center for Prevention Svcs, CDC.*

\*A case was considered imported if a person had rash onset within 18 days after arriving in the United States from a foreign country.

*Measles – Continued***FIGURE 2. Measles cases, by reporting area – United States, 1982****Update: Influenza Activity – United States**

Influenza virus isolates reported to CDC this season now total 1,249, including 1,116 type A(H3N2) isolates, 96 type A(H1N1), and 37 type B.

Influenza morbidity reports collected weekly from each state continue to suggest a gradual decline in activity. For the week ending April 2, 1983, six states (Kentucky, Missouri, Nebraska, North Dakota, Pennsylvania, and Tennessee), reported regional activity, and no states reported widespread activity. For the same week, an excess in the ratio of pneumonia and influenza (P&I) deaths to total deaths was reported from 121 cities for the twelfth consecutive week. The observed ratio was 5.0, and the expected ratio was 4.0 (Figure 1).

*Reported by Respective state epidemiologists and laboratory directors; Div of Surveillance and Epidemiologic Studies, Epidemiology Program Office, Statistical Svcs Activity, WHO Collaborating Center for Influenza, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.*

**Errata, Vol. 32, No. 10**

p. 141. In the article, "Behavioral Risk Factor Prevalence Surveys—United States, First Quarter 1982," the first footnote on Table 1, p. 142, should read, "Per 1,000 population."

**Vol. 32, No. 12**

p. 158. In the article, "Update: Influenza Activity—United States," Figure 1 should have indicated influenza type A and B viruses for Kentucky and Pennsylvania.

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