CENTERS FOR DISEASE CONTROL

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MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Surveillance Summary

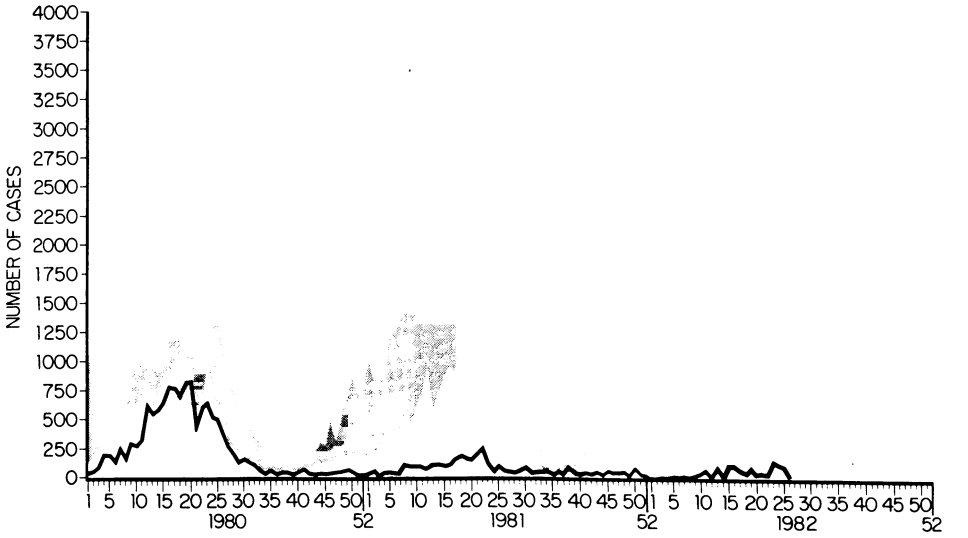
Measles — United States, First 26 Weeks, 1982

A total of 895 measles cases were reported in the United States during the first 26 weeks of 1982, a record low for the first 6 months of any year and a decrease of 60.6% from the 2,270 cases reported during the same period last year. Fewer than 100 measles cases in any 1 week were reported for the first 26 weeks of 1982, and record low numbers of cases were reported for 25 of those weeks. Fewer than 100 cases of measles per week have now been reported for 55 consecutive weeks.

As in previous years, incidence of reported measles peaked in late spring (Figure 1). However, the peak was considerably lower than in 1980 and 1981, years in which measles incidence had already declined to record lows.

The overall incidence for the United States during the first 26 weeks of 1982 was 0.4/100,000 total population. Only two states reported measles incidences of ≥1/100,000. In contrast, seven states in 1981 and 30 states in 1980 reported such rates for the first 26 weeks. The highest measles incidence in the first 26 weeks of 1982 was reported from Cali-

FIGURE 1. Reported measles cases,* United States, January 1980-June 1982



*Shaded area represents maximum and minimum weekly values during 5-year period, 1975-1979.
Source: MMWR weekly reports.
CDC, CPS, IM

Measles – Continued

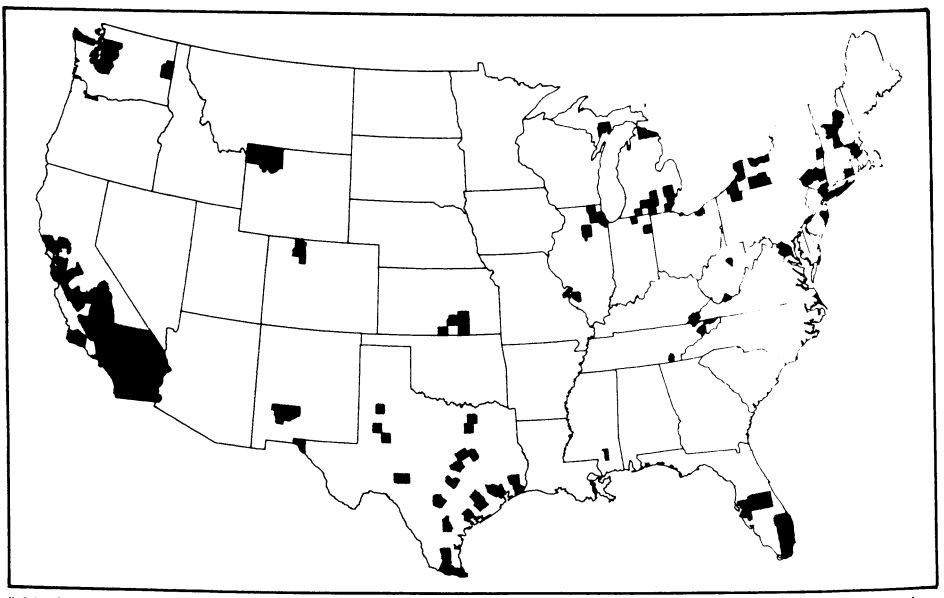
fornia (2.27 cases/100,000 population), followed by Kansas (1.51), New York (0.78), Washington (0.59), and Michigan (0.42). Twenty-three states reported no measles cases, as compared with 13 states in 1981 and five in 1980. To date 47 states have reported no measles for at least 4 consecutive weeks. By contrast, 44 states in 1981 and 31 states in 1980 were free of reported measles for at least 4 consecutive weeks. During the first 26 weeks of 1982, a provisional total of 137 (4.4%) of the nation's 3,144 counties reported measles (Figure 2), compared with a provisional total of 247 (7.9%) counties during the same period in 1981.

A provisional total of 64 cases of imported measles* were reported to CDC during the first 26 weeks of 1982, an average of 2.5 cases per week. Twelve of these 64 imported cases led to an additional 164 cases within the United States. Measles importations and importation-related cases accounted for 25.5% of the total cases reported. Of the 64 measles importations, 42 (65.6%) involved U.S. citizens.

Reported by: Immunization Div, Center for Prevention Svcs, CDC.

*A case is considered to be imported if a person has onset of rash ≤18 days after arriving in the United States from a foreign country and has no other apparent source of infection.

FIGURE 2. Cumulative measles cases by county, United States, weeks 1-26, 1982*†



*Alaska has 29 counties with one reporting measles; Hawaii has four counties with one reporting measles.

†Provisional data, subject to deletion of cases shown not to be measles.

Current Trends

Congenital Syphilis among Newborns — Texas, 1981

Thirty-seven cases of congenital syphilis were reported among newborns in Texas during 1981. An increase of 164% over the 14 cases reported in 1980, this represents the highest

Congenital Syphilis — Continued

number since 1971 when 52 cases were reported. Reported cases of early syphilis among women in Texas increased 47.3% from 2,024 in 1980 to 2,982 in 1981.

Data submitted with each congenital syphilis case were reviewed, and cases were classified according to the diagnostic criteria of Kaufman et al. (*1*). No case was classified as definite; 25 (67.6%) were classified as probable, based on serologic evidence and clinical findings; eight (21.6%) as possible, based on serologic evidence alone; and four (10.8%) as unlikely. The unlikely cases for which the diagnosis appeared to be based solely on evidence of maternal infection at delivery time have been excluded from the analysis that follows.

Of 33 infants evaluated, five (15.2%) were white, not of Hispanic origin; 16 (48.5%) were black, not of Hispanic origin; and 12 (36.4%) were Hispanic. Fourteen were male and 19, female. Thirty-one were live births, and two were stillborn. Two infants died within 6 days of delivery; prematurity was listed as contributing to both deaths.

The mean age of the 33 mothers was 21.7 years. Ten (30.3%) were 15-19 years; none of those was married. Among all 33 mothers, seven were married; three were separated; and 23 were single. The stage of the mother's infection at delivery time was primary or secondary in eight instances (24.2%) and early latent <1 year in 23 (69.7%); two patients (6.1%) had late syphilis.

Twenty-five of the 33 mothers received no prenatal care. Of the eight who received prenatal care, five began seeing a physician late in the third trimester, and three who had negative results of serologic tests for syphilis (STS) during the first trimester did not have a repeat STS in the third trimester.

Reported by R Pelosi, Infectious Disease Control Div, CD Alexander, MD, Bureau of Communicable Disease Svcs, CR Webb, Jr, MD, State Epidemiologist, Texas Dept of Health; Veneral Disease Control Div, Center for Prevention Svcs, CDC.

Editorial Note: Congenital syphilis is completely preventable. Its development can be related to two factors: when the pregnant woman becomes infected and how long she remains infected. Detection of untreated syphilis before delivery and prompt administration of appropriate therapy can often prevent congenital infection and can usually prevent complications among fetuses infected in utero.

Congenital syphilis can be eliminated or greatly reduced by: 1) preventing the spread of syphilis in the heterosexual community through rapid and thorough epidemiologic investigations; 2) educating females at risk of infection about the need to seek early and continuous prenatal care; and 3) encouraging medical care providers to perform serologic tests for syphilis on patients in the third, as well as the first, trimester.

References

1. Kaufman RE, Jones OG, Blount JH, Wiesner PJ. Questionnaire survey of reported early congenital syphilis: problems in diagnosis, prevention, and treatment. Sex Transm Dis 1977;4:135-9.

Epidemiologic Notes and Reports

Intestinal Perforation Caused by Larval *Eustrongylides* — Maryland

CDC recently received reports that three fishermen in Baltimore, Maryland, swallowed live minnows and developed severe abdominal pain within 24 hours.

Patient 1, a 23-year-old male, was seen at a community hospital on March 21, 1982, 2 days after swallowing two live minnows, because of progressive abdominal cramping pain of 24-hours' duration. During surgery, two roundworms were found, one penetrating the cecum,

Intestinal Perforation – Continued

the other in the abdominal cavity. The transverse colon was found to be ecchymotic with punctate hemorrhage and exudates. On April 7, patient 2, a 25-year-old fisherman, was brought to the emergency room of the same hospital with similar symptoms 24 hours after swallowing one minnow. At laparotomy on April 9, two roundworms were found near a perforated cecum. Patient 3, a fisherman who swallowed minnows from the same source, later developed similar symptoms, which resolved 4 days later without surgery. Twelve other persons who also ingested live minnows reported no symptoms during 4 weeks of follow-up.

Sixty-seven minnows, collected in East Baltimore waters and secured from the same store at which the patients obtained their fish, were examined; 32 (48%) were infected with roundworms identical to those recovered from the two patients described above. Of the infected fish, six had two worms, one had three worms, and 26 had one worm each. The worms, 1-2 mm in diameter and 80-120 mm long, were identified as 4th-stage larval nematodes of the genus *Eustrongylides.**

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*Larval specimens have been deposited with the U.S. Department of Agriculture (USDA) in the U.S. National Museum, Helminthological Collection.

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TABLE I. Summary – cases of specified notifiable diseases, United States

DISEASE		28th WEEK ENDING			CUMULATIVE, FIRST 28 WEEKS		
		July 17, 1982	July 18, 1981	MEDIAN 1977-1981	July 17, 1982	July 18, 1981	MEDIAN 1977-1981
Aseptic meningitis		167	220	144	2,512	2,515	1,817
Brucellosis		–	–	7	80	82	96
Encephalitis:	Primary (arthropod-borne & unspec.)	33	42	24	446	463	361
	Post-infectious	1	–	5	42	60	115
Gonorrhea:	Civilian	16,820	21,290	20,850	479,361	525,673	509,293
	Military	274	668	458	13,701	15,569	14,562
Hepatitis:	Type A	350	491	514	11,686	13,669	15,322
	Type B	380	413	311	10,980	10,772	8,800
	Non A, Non B	46	N	N	1,149	N	N
	Unspecified	163	253	176	4,823	5,887	5,351
Legionellosis		11	N	N	208	N	N
Leprosy		3	16	5	101	139	93
Malaria		32	35	35	498	750	357
Measles (rubeola)		33	35	198	1,003	2,351	12,132
Meningococcal infections:	Total	39	49	42	1,822	2,238	1,680
	Civilian	38	49	42	1,811	2,230	1,663
	Military	1	–	1	11	8	12
Mumps		34	44	142	3,883	2,883	10,255
Pertussis		26	27	26	570	559	628
Rubella(German measles)		37	25	141	1,791	1,537	10,124
Syphilis (Primary & Secondary):	Civilian	479	553	397	17,249	15,929	12,761
	Military	10	3	3	211	196	166
Tuberculosis		486	569	519	13,659	14,119	14,805
Tularemia		14	5	4	105	106	86
Typhoid fever		4	11	11	203	268	245
Typhus fever, tick-borne (RMSF)		46	66	54	481	649	497
Rabies, animal		131	106	97	3,362	4,119	2,574

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1982		CUM. 1982
Anthrax	–	Poliomyelitis: Total	3
Botulism (Ohio 1)	46	Paralytic	3
Cholera	–	Psittacosis (Utah 2)	67
Congenital rubella syndrome	5	Rabies, human	–
Diphtheria	–	Tetanus (Tex. 1)	39
Leptospirosis (Hawaii 1)	31	Trichinosis (Pa. 5)	59
Plague	5	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	17

N: Not notifiable

TABLE III. Cases of specified notifiable diseases, United States, weeks ending July 17, 1982 and July 18, 1981 (28th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	ENCEPHALITIS		GONORRHEA (Civilian)		HEPATITIS (Viral), by type				LEGIONELLOSIS	LEPROSY
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	1982	CUM. 1982	CUM. 1982	CUM. 1982	CUM. 1982	CUM. 1981	1982	1982	1982	1982	1982	CUM. 1982
UNITED STATES	167	80	446	42	479,361	525,673	350	380	46	163	11	101
NEW ENGLAND	8	3	16	5	11,873	12,910	3	12	1	7	1	1
Maine	–	–	–	–	562	649	1	3	–	–	–	–
N.H.	1	–	–	–	340	451	–	–	–	–	–	–
Vt.	–	–	–	–	233	229	–	–	–	–	–	–
Mass.	6	–	6	–	5,532	5,380	1	1	–	7	–	–
R.I.	1	–	–	–	805	679	1	2	–	–	–	–
Conn.	–	3	10	5	4,401	5,522	–	6	1	–	1	1
MID. ATLANTIC	17	2	54	12	60,793	61,349	46	99	4	16	5	4
Upstate N.Y.	9	2	19	3	9,884	10,165	16	27	1	6	–	1
N.Y. City	–	–	11	–	25,423	25,238	–	12	–	2	–	1
N.J.	2	–	11	–	10,993	11,720	14	40	3	4	–	1
Pa.	6	–	13	9	14,493	14,226	16	20	–	4	5	1
E.N. CENTRAL	28	–	90	7	65,194	80,428	49	43	2	12	2	3
Ohio	11	–	31	4	19,477	27,013	14	15	2	1	2	–
Ind.	2	–	23	2	8,068	7,152	8	5	–	9	–	–
Ill.	1	–	7	1	14,612	22,308	6	5	–	1	–	3
Mich.	14	–	33	–	16,639	16,773	20	18	–	1	–	–
Wis.	–	–	2	–	6,398	7,182	1	–	–	–	–	–
W.N. CENTRAL	14	9	31	3	23,581	24,949	11	23	3	6	–	3
Minn.	2	–	11	1	3,545	4,003	5	1	3	–	–	1
Iowa	–	1	11	1	2,495	2,733	–	4	–	2	–	–
Mo.	4	3	4	–	11,019	11,417	5	15	–	3	–	1
N. Dak.	–	–	–	–	321	343	–	–	–	–	–	–
S. Dak.	–	1	–	1	659	704	–	–	–	1	–	1
Nebr.	1	1	2	–	1,441	1,905	1	1	–	–	–	–
Kans.	7	3	3	–	4,101	3,844	–	2	–	–	–	–
S. ATLANTIC	48	16	66	6	114,502	129,546	37	70	16	27	2	5
Del.	–	–	–	–	1,967	2,037	–	–	–	–	–	–
Md.	2	–	13	–	16,228	14,531	–	8	1	7	–	2
D.C.	–	–	–	–	7,080	7,981	–	–	–	–	–	–
Va.	4	6	18	1	10,617	11,599	1	10	2	2	1	1
W. Va.	–	–	1	–	1,440	1,969	1	–	–	–	–	–
N.C.	8	–	6	1	20,564	19,905	3	7	–	3	–	–
S.C.	8	2	–	–	12,659	12,471	1	9	1	1	–	–
Ga.	4	1	–	–	9,483	26,417	5	7	–	2	–	–
Fla.	22	7	28	4	34,464	32,636	26	29	12	12	1	2
E.S. CENTRAL	3	10	25	2	42,554	43,379	10	19	4	2	–	–
Ky.	–	–	–	–	5,735	5,471	3	1	–	–	–	–
Tenn.	2	6	14	–	16,472	16,405	6	14	3	2	–	–
Ala.	–	3	8	2	12,787	13,187	–	2	1	–	–	–
Miss.	1	1	3	–	7,560	8,316	1	2	–	–	–	–
W.S. CENTRAL	18	23	55	1	69,960	68,689	68	41	2	60	1	15
Ark.	–	4	2	–	5,689	4,989	–	–	1	10	1	–
La.	4	6	8	–	12,996	10,720	7	6	1	4	–	–
Okla.	6	3	16	–	7,652	7,392	22	10	–	6	–	–
Tex.	8	10	29	1	43,623	45,588	39	25	–	40	–	15
MOUNTAIN	5	–	18	3	17,336	20,643	32	13	–	6	–	2
Mont.	–	–	–	–	723	740	1	–	–	–	–	–
Idaho	–	–	–	–	808	849	–	–	–	–	–	1
Wyo.	–	–	–	–	512	484	2	1	–	–	–	–
Colo.	4	–	8	1	4,614	5,522	2	6	–	1	–	–
N. Mex.	–	–	–	–	2,155	2,261	8	–	–	–	–	–
Ariz.	–	–	6	–	4,730	6,313	6	1	–	2	–	–
Utah	1	–	–	2	807	958	9	3	–	3	–	1
Nev.	–	–	4	–	2,987	3,516	4	2	–	–	–	–
PACIFIC	26	17	85	3	73,568	83,780	94	60	14	27	–	68
Wash.	4	–	9	–	5,886	6,887	4	2	1	–	–	6
Oreg.	–	–	1	–	4,181	5,044	7	6	–	2	–	–
Calif.	17	16	71	3	60,372	68,188	81	46	13	25	–	42
Alaska	–	1	3	–	1,832	2,064	–	3	–	–	–	1
Hawaii	5	–	1	–	1,297	1,597	2	3	–	–	–	19
Guam	U	–	–	–	53	70	U	U	U	U	U	–
P.R.	U	–	1	–	1,579	1,765	U	U	U	U	U	–
V.I.	–	–	–	–	121	101	–	–	–	–	–	–
Pac. Trust Terr.	U	–	–	–	187	239	U	U	U	U	U	10

N: Not notifiable U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 17, 1982 and July 18, 1981 (28th week)

REPORTING AREA	MALARIA		MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS (Total)		MUMPS		PERTUSSIS	RUBELLA		
	1982	CUM. 1982	1982	CUM. 1982	CUM. 1981	1982	CUM. 1982	1982	CUM. 1982	1982	1982	CUM. 1982	CUM. 1981
UNITED STATES	32	498	33	1,003	2,351	39	1,822	34	3,883	26	37	1,791	1,537
NEW ENGLAND	2	26	-	9	72	4	99	3	156	-	1	15	109
Maine	-	-	-	-	5	1	6	1	34	-	-	-	33
N.H.	-	-	-	2	6	1	14	-	12	-	-	8	43
Vt.	-	-	-	2	2	-	6	-	5	-	-	-	-
Mass.	1	20	-	2	51	2	25	-	76	-	-	3	21
R.I.	1	2	-	-	-	-	11	-	14	-	-	1	-
Conn.	-	4	-	3	8	-	37	2	15	-	1	3	12
MID. ATLANTIC	2	66	3	153	761	12	328	0	246	4	1	86	185
Upstate N.Y.	1	15	2	103	198	4	108	3	51	2	1	41	82
N.Y. City	-	21	1	42	59	1	58	3	41	-	-	31	47
N.J.	-	20	-	4	50	5	69	-	36	-	-	14	46
Pa.	1	10	-	4	454	2	93	-	118	2	-	-	10
E.N. CENTRAL	1	33	1	66	73	3	218	12	2,104	6	3	151	329
Ohio	-	9	-	1	15	1	83	7	1,543	2	-	-	1
Ind.	-	1	-	2	8	-	22	-	33	1	-	26	113
Ill.	-	3	-	23	21	-	58	-	162	-	-	55	80
Mich.	1	18	1	40	28	2	43	5	285	1	3	45	33
Wis.	-	2	-	-	1	-	12	-	81	2	-	25	102
W.N. CENTRAL	-	14	-	39	7	1	77	1	525	2	-	59	75
Minn.	-	2	-	-	3	-	19	1	402	-	-	9	7
Iowa	-	5	-	-	1	-	5	-	29	2	-	-	4
Mo.	-	3	-	2	1	1	23	-	15	-	-	38	2
N. Dak.	-	-	-	-	-	-	6	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	3	-	1	-	-	1	-
Nebr.	-	3	-	-	1	-	9	-	-	-	-	-	1
Kans.	-	1	-	37	1	-	12	-	78	-	-	11	61
S. ATLANTIC	5	74	1	34	329	9	364	1	218	9	2	66	122
Del.	-	-	-	-	-	-	-	-	10	-	-	1	1
Md.	3	12	1	3	2	1	22	-	21	2	-	33	1
D.C.	-	3	-	1	1	-	2	-	-	-	-	-	-
Va.	1	23	-	14	6	2	40	-	30	1	1	13	4
W. Va.	-	5	-	2	8	-	7	-	81	-	-	1	22
N.C.	1	2	-	-	3	3	76	-	10	1	-	1	4
S.C.	-	3	-	-	-	-	40	-	13	1	-	1	8
Ga.	-	10	-	-	107	2	79	-	10	4	-	5	35
Fla.	-	16	-	14	202	1	98	1	43	-	1	11	47
E.S. CENTRAL	1	6	-	8	2	1	122	-	32	1	-	39	23
Ky.	-	4	-	1	-	-	20	-	9	-	-	22	14
Tenn.	-	-	-	6	-	1	51	-	13	1	-	1	8
Ala.	-	-	-	-	2	-	44	-	5	-	-	-	1
Miss.	1	2	-	1	-	-	7	-	5	-	-	16	-
W.S. CENTRAL	1	34	-	14	767	1	214	1	144	1	3	97	125
Ark.	-	3	-	-	1	-	12	-	6	-	-	1	2
La.	-	3	-	2	-	-	37	-	3	-	-	1	9
Okla.	1	5	-	-	5	1	21	-	-	-	-	3	-
Tex.	-	23	-	12	761	-	144	1	135	1	3	92	114
MOUNTAIN	-	15	-	5	31	2	86	3	61	-	7	58	75
Mont.	-	-	-	-	-	-	4	-	3	-	1	5	3
Idaho	-	1	-	-	1	-	6	-	3	-	-	1	3
Wyo.	-	-	-	-	-	-	5	-	2	-	2	7	3
Colo.	-	8	-	5	8	1	34	-	8	-	-	4	30
N. Mex.	-	2	-	-	8	-	13	-	-	-	-	5	5
Ariz.	-	3	-	-	4	1	14	2	29	-	1	8	18
Utah	-	1	-	-	-	-	7	1	12	-	3	19	4
Nev.	-	-	-	-	10	-	3	-	4	-	-	9	9
PACIFIC	20	230	28	675	309	6	314	7	397	3	20	1,220	494
Wash.	-	11	-	31	3	-	31	1	61	-	-	32	55
Oreg.	1	9	-	-	3	-	63	-	-	-	-	5	48
Calif.	19	208	28	640	301	6	207	6	323	3	20	1,174	380
Alaska	-	-	-	1	-	-	10	-	6	-	-	1	-
Hawaii	-	2	-	3	2	-	3	-	7	-	-	8	11
Guam	U	1	U	5	6	U	2	U	3	U	U	2	1
P.R.	U	4	U	76	235	U	7	U	43	U	U	6	3
V.I.	-	-	-	-	11	-	-	-	-	-	-	-	1
Pac. Trust Terr.	U	-	U	-	1	U	-	U	1	U	U	-	1

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 17, 1982 and July 18, 1981 (28th week)

REPORTING AREA	SYPHILIS (Civilian) (Primary & Secondary)		TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		RABIES, Animal
	CUM. 1982	CUM. 1981	1982	CUM. 1982	CUM. 1982	1982	CUM. 1982	1982	CUM. 1982	CUM. 1982
UNITED STATES	17,249	15,929	486	13,659	105	4	203	46	481	3,362
NEW ENGLAND	293	338	10	365	2	-	14	-	5	26
Maine	1	2	3	30	-	-	-	-	-	19
N.H.	1	12	-	11	-	-	-	-	1	-
Vt.	1	13	-	7	-	-	2	-	-	-
Mass.	198	225	6	240	2	-	10	-	2	4
R.I.	13	19	-	16	-	-	-	-	1	-
Conn.	79	67	1	61	-	-	2	-	1	3
MID. ATLANTIC	2,348	2,425	84	2,277	7	1	33	4	16	93
Upstate N.Y.	240	231	15	387	7	1	4	1	1	46
N.Y. City	1,412	1,458	37	836	-	-	20	-	1	-
N.J.	315	329	19	468	-	-	5	1	10	5
Pa.	381	407	13	586	-	-	4	2	4	42
E.N. CENTRAL	905	1,088	96	2,098	-	-	15	-	41	383
Ohio	164	149	28	359	-	-	7	-	40	54
Ind.	105	110	9	277	-	-	-	-	-	57
Ill.	423	603	45	837	-	-	3	-	1	196
Mich.	155	177	8	512	-	-	5	-	-	3
Wis.	58	49	6	113	-	-	-	-	-	73
W.N. CENTRAL	328	311	11	408	13	-	7	1	13	747
Minn.	64	107	1	71	-	-	4	-	-	124
Iowa	19	13	-	47	1	-	1	1	3	236
Mo.	198	166	9	192	9	-	1	-	5	69
N. Dak.	4	6	-	7	-	-	-	-	-	65
S. Dak.	-	2	1	17	-	-	-	-	-	61
Nebr.	8	3	-	15	1	-	-	-	-	90
Kans.	35	14	-	59	2	-	1	-	5	102
S. ATLANTIC	4,702	4,182	90	2,793	8	-	29	25	271	570
Del.	9	7	-	24	-	-	-	-	-	-
Md.	259	317	U	315	1	-	7	1	28	31
D.C.	265	350	6	110	-	-	-	-	-	-
Va.	337	370	U	305	1	-	2	3	32	296
W. Va.	19	13	4	84	-	-	3	-	4	31
N.C.	326	325	16	447	-	-	-	15	119	33
S.C.	249	278	19	275	5	-	3	5	63	30
Ga.	971	1,070	15	412	-	-	-	-	23	112
Fla.	2,267	1,452	30	821	1	-	14	1	2	37
E.S. CENTRAL	1,211	1,017	50	1,265	6	-	14	5	31	400
Ky.	66	50	11	323	-	-	-	-	-	82
Tenn.	318	392	9	418	4	-	2	3	20	254
Ala.	437	292	16	355	-	-	9	1	5	64
Miss.	390	283	14	169	2	-	3	1	6	-
W.S. CENTRAL	4,499	3,835	58	1,630	51	3	20	10	95	664
Ark.	114	71	6	171	34	-	1	3	15	94
La.	979	881	-	268	3	1	2	-	-	17
Okla.	99	89	6	222	14	-	2	1	52	124
Tex.	3,307	2,794	46	969	-	2	15	6	28	429
MOUNTAIN	432	403	15	388	13	-	7	-	7	126
Mont.	3	9	-	25	2	-	-	-	2	51
Idaho	19	14	-	16	1	-	-	-	1	2
Wyo.	11	7	-	2	1	-	-	-	1	11
Colo.	121	130	1	50	3	-	2	-	-	17
N. Mex.	89	78	2	76	-	-	-	-	1	11
Ariz.	102	80	10	158	-	-	4	-	-	26
Utah	13	16	2	23	6	-	1	-	-	6
Nev.	74	69	-	38	-	-	-	-	2	2
PACIFIC	2,531	2,330	72	2,435	5	-	64	1	2	353
Wash.	107	89	3	146	1	-	3	-	-	-
Oreg.	66	48	4	98	-	-	1	-	-	1
Calif.	2,282	2,146	64	1,972	3	-	57	1	2	280
Alaska	8	7	-	46	1	-	1	-	-	72
Hawaii	68	40	1	173	-	-	2	-	-	-
Guam	1	-	U	4	-	U	-	U	-	-
P.R.	332	374	U	195	-	U	2	U	-	30
V.I.	13	11	-	1	-	-	-	-	-	-
Pac. Trust Terr.	-	-	U	68	-	U	-	U	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending July 18, 1982 (28th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	642	425	139	27	27	24	37
Boston, Mass.	194	120	42	9	7	16	17
Bridgeport, Conn.	38	29	8	1	-	-	3
Cambridge, Mass.	26	18	8	-	-	-	3
Fall River, Mass.	22	17	2	3	-	-	-
Hartford, Conn.	58	30	21	1	5	1	-
Lowell, Mass.	24	15	8	1	-	-	2
Lynn, Mass.	19	14	4	-	-	1	-
New Bedford, Mass.	26	20	4	2	-	-	-
New Haven, Conn.	43	26	11	2	2	2	5
Providence, R.I.	63	47	9	2	3	2	2
Somerville, Mass.	5	4	-	1	-	-	-
Springfield, Mass.	35	23	9	2	-	1	2
Waterbury, Conn.	39	26	2	1	10	-	1
Worcester, Mass.	50	36	11	2	-	1	2
MID. ATLANTIC	2,560	1,722	542	176	63	57	85
Albany, N.Y.	50	35	6	5	1	3	1
Allentown, Pa.	15	13	2	-	-	-	-
Buffalo, N.Y.	100	71	20	2	6	1	3
Camden, N.J.	34	22	9	2	-	1	-
Elizabeth, N.J.	28	16	9	3	-	-	-
Erie, Pa.†	45	34	8	1	1	1	-
Jersey City, N.J.	50	33	10	3	2	2	1
N.Y. City, N.Y.	1,377	924	275	113	36	29	54
Newark, N.J.	45	17	13	7	3	5	2
Paterson, N.J.	24	20	2	-	1	1	2
Philadelphia, Pa.†	348	234	80	20	5	9	13
Pittsburgh, Pa.†	58	32	22	2	2	-	1
Reading, Pa.	18	15	2	-	1	-	1
Rochester, N.Y.	123	82	24	12	1	4	5
Schenectady, N.Y.	35	29	6	-	-	-	-
Scranton, Pa.†	38	25	9	2	2	-	1
Syracuse, N.Y.	92	64	25	1	2	-	-
Trenton, N.J.	18	10	7	1	-	-	-
Utica, N.Y.	25	20	4	1	-	-	-
Yonkers, N.Y.	37	26	9	1	-	1	1
E.N. CENTRAL	2,297	1,408	573	162	74	80	62
Akron, Ohio	80	57	12	1	1	9	-
Canton, Ohio	48	33	6	4	2	3	2
Chicago, Ill.	504	280	138	54	13	19	12
Cincinnati, Ohio	172	117	44	3	5	3	13
Cleveland, Ohio	177	104	48	15	6	4	1
Columbus, Ohio	138	78	40	10	5	5	2
Dayton, Ohio	101	61	23	9	4	4	1
Detroit, Mich.	252	148	64	21	13	6	7
Evansville, Ind.	36	25	10	-	-	1	-
Fort Wayne, Ind.	60	42	9	6	2	1	3
Gary, Ind.	21	14	5	2	-	-	-
Grand Rapids, Mich	54	34	10	1	5	4	2
Indianapolis, Ind.	195	120	53	9	8	5	3
Madison, Wis.	56	36	12	5	3	-	3
Milwaukee, Wis.	152	91	38	10	3	10	-
Peoria, Ill.	43	32	10	-	-	1	5
Rockford, Ill.	35	21	9	3	1	1	2
South Bend, Ind.	43	30	12	1	-	-	3
Toledo, Ohio§	64	45	12	2	1	4	1
Youngstown, Ohio	66	40	18	6	2	-	2
W.N. CENTRAL	717	482	140	43	27	24	21
Des Moines, Iowa§	53	51	-	-	1	-	-
Duluth, Minn.	32	19	6	3	3	1	1
Kansas City, Kans.	35	22	7	3	1	2	2
Kansas City, Mo.	85	50	14	13	5	3	1
Lincoln, Nebr.	33	24	6	2	-	1	-
Minneapolis, Minn.	79	57	14	2	5	1	-
Omaha, Nebr.	93	58	28	3	1	3	5
St. Louis, Mo.	166	110	29	12	5	10	6
St. Paul, Minn.	90	64	17	4	4	1	-
Wichita, Kans.	51	27	19	1	2	2	6

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,034	642	228	85	29	50	38
Atlanta, Ga.	176	106	32	19	8	11	2
Baltimore, Md.	134	87	30	10	3	4	1
Charlotte, N.C.	67	43	13	5	3	3	5
Jacksonville, Fla.	90	57	20	6	2	5	4
Miami, Fla.	110	62	32	8	2	6	1
Norfolk, Va.	46	27	13	2	-	4	3
Richmond, Va.	84	49	23	6	2	4	6
Savannah, Ga.	55	31	10	9	3	2	2
St. Petersburg, Fla.	89	70	12	3	-	4	4
Tampa, Fla.	72	53	11	4	3	1	9
Washington, D.C.	73	36	22	9	1	5	-
Wilmington, Del.	38	21	10	4	2	1	1
E.S. CENTRAL	664	384	184	43	22	31	30
Birmingham, Ala.	98	54	31	8	4	1	-
Chattanooga, Tenn.	65	44	14	5	1	1	8
Knoxville, Tenn.	56	39	13	-	2	2	1
Louisville, Ky.	108	57	33	7	2	9	3
Memphis, Tenn.	132	69	44	5	5	9	7
Mobile, Ala.	55	36	15	3	1	-	2
Montgomery, Ala.	36	18	8	7	1	2	1
Nashville, Tenn.	114	67	26	8	6	7	8
W.S. CENTRAL	1,631	891	417	167	99	57	51
Austin, Tex.	95	65	16	7	4	3	3
Baton Rouge, La.	55	31	13	3	6	2	4
Corpus Christi, Tex.	40	24	5	7	3	1	1
Dallas, Tex.	205	114	53	19	14	5	4
El Paso, Tex.	68	34	17	10	5	2	2
Fort Worth, Tex.	89	48	27	6	4	4	6
Houston, Tex.	568	272	150	82	43	21	16
Little Rock, Ark.	59	34	16	2	3	4	4
New Orleans, La.	141	83	41	10	1	6	-
San Antonio, Tex.	168	97	44	13	8	6	7
Shreveport, La.	37	23	11	2	-	1	1
Tulsa, Okla.	106	66	24	6	8	2	3
MOUNTAIN	626	362	153	48	31	32	22
Albuquerque, N.Mex.	63	37	17	3	5	1	4
Colo. Springs, Colo.	29	17	8	2	2	-	1
Denver, Colo.	118	63	27	13	5	10	1
Las Vegas, Nev.	69	30	22	9	6	2	2
Ogden, Utah	20	17	-	1	1	1	2
Phoenix, Ariz.	151	88	40	11	4	8	3
Pueblo, Colo.	34	24	9	1	-	-	-
Salt Lake City, Utah	50	28	11	3	2	6	1
Tucson, Ariz.	92	58	19	5	6	4	8
PACIFIC	1,691	1,099	361	105	66	58	78
Berkeley, Calif.	22	16	3	-	1	2	-
Fresno, Calif.	53	34	11	1	5	2	4
Glendale, Calif.	27	24	3	-	-	-	-
Honolulu, Hawaii	60	33	15	6	3	3	7
Long Beach, Calif.	85	53	23	3	2	4	5
Los Angeles, Calif.	397	241	92	36	16	11	16
Oakland, Calif. §	75	73	-	-	1	-	3
Pasadena, Calif.	33	21	8	2	1	1	3
Portland, Oreg.	117	86	21	5	3	2	8
Sacramento, Calif.	78	47	20	7	3	1	3
San Diego, Calif.	132	82	28	11	3	8	6
San Francisco, Calif.	162	96	37	17	6	6	4
San Jose, Calif.	147	90	34	8	11	4	10
Seattle, Wash.	198	134	42	7	5	10	3
Spokane, Wash.	68	44	15	1	4	4	4
Tacoma, Wash.	37	25	9	1	2	-	2
TOTAL	11,862††	7,415	2,737	856	438	413	424

*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.

Intestinal Perforation — Continued

Editorial Note: Nematodes of the genus *Eustrongylides* (Family Dioctophymidae Railliet, 1915) are parasitic as adults in the gastrointestinal tract of fish-eating birds and as larvae in the connective tissue or body cavity of freshwater fish (*1*). Amphibians, reptiles, and mammals (rarely) may become infected with larval *Eustrongylides* spp. and may play an ecological role as paratenic or transport hosts. Moreover, extensive larval migration in accidentally and experimentally infected reptilian, amphibian, and avian hosts has been observed and has sometimes been associated with high mortality (*1-3*), suggesting a possible pathologic role for *Eustrongylides* spp. However, no human infections have been reported to CDC.† Although data are incomplete, infection by larval *Eustrongylides* spp. is widespread and common in numerous species of freshwater fish. The high rates of infection for minnows (*Fundulus* spp.) reported here and earlier (*3*) may indicate a high degree of risk for persons who choose to eat these fish without cooking them first.

References

1. Lichtenfels JR, Lavies B. Mortality in red-sided garter snakes, *Thamnophis sirtalis parietalis*, due to larval nematode, *Eustrongylides* sp. Lab Anim Sci 1976;26:465-7.
2. Abram JB, Lichtenfels JR. Larval *Eustrongylides* sp. (Nematoda: Dioctophymatoidea) from otter, *Lutra canadensis*, in Maryland. Proceeding of the Helminthological Society of Washington 1974;41:253.
3. Von Brand T, Cullinan RP. Physiological observations upon a larval *Eustrongylides*. V. The behavior in abnormal warmblooded hosts. Proceeding of the Helminthological Society of Washington 1943; 10:29-33.

†The USDA National Helminthological Collection contains a single larval specimen obtained from a human (*2*).

Silo-Filler's Disease in Rural New York

On September 18, 1981, at a farm in Mohawk, New York, a 39-year-old farmhand was overcome while climbing up the chute of a recently filled concrete stave silo and later died of presumed silo-filler's disease. The case report follows.

In the preceding 10 days, the farm owner had filled this silo with Sudex grass and chopped corn silage. On September 18, he asked a farmhand to climb up the unloading chute inside the silo and toss out fresh silage. When the farmhand climbed the chute, he became short of breath and confused and had to descend. He made a second attempt but again had to climb down and was noted to be cyanotic, pale, and diaphoretic.

At a local hospital, the examining physician noted cyanosis and respiratory distress; blood pressure of 84/60; pulse, 128; respiration, 32; and temperature, 37.5 C (99.5 F). The patient had wheezes and crackles on auscultation of his chest but no signs of consolidation; after asthma was diagnosed, he was treated with epinephrine, intravenous aminophylline, and steroids. White blood count was 31,000; hematocrit, 57.8%; and hemoglobin, 18.6 gm. Arterial blood gas examination while on 2 liters of nasal oxygen showed pH 7.35; $PaCO_2$, 32 mm Hg; PaO 45 mm Hg; and a calculated bicarbonate of 17.6 mEq/L. An electrocardiogram showed a sinus tachycardia, and a plain chest radiograph disclosed extensive fluffy bilateral infiltrates.

The patient was moved to the intensive care unit, where a tentative diagnosis of pneumonia was made. He became agitated, would not wear an oxygen mask, and remained in shock. Five hours after admission, he experienced cardiopulmonary arrest and died despite vigorous efforts to resuscitate him.

Post-mortem examination the next day showed grossly edematous lungs with pleural effusions (200 ml) on both sides; the right lung weighed 900 gm, and the left weighed 1,000 gm.

Silo-Filler's Disease – Continued

Microscopy of the lungs showed alveoli flooded with proteinaceous material; the alveolar walls were intact. No bacteria, fungi, or evidence of viral disease was found. Early bronchiolitis was present; no evidence of asthma could be seen. There were no granulomas or hyaline membranes.

An investigation at the farm 2 weeks later failed to uncover any problem with the corn silage, which was still being unloaded. The cows were eating normally and producing the usual amounts of milk. The farmer reported that, following his farmhand's illness, he had turned on the silo blower and sent another worker up to toss out corn; no ill effects had occurred.

Several factors support the diagnosis of silo-filler's disease, an illness caused by the inhalation of nitrogen oxides: i.e., rapid onset of symptoms following a recent filling of the silo and histology classic for toxic exposure.

Reported by DS Pratt, MD, JJ May, MD, Section of Pulmonary Medicine, Mary Imogene Bassett Hospital, Cooperstown, R Rothenberg, MD, State Epidemiologist, New York State Dept of Health; Immunology Section, Laboratory Investigations Br, NIOSH, CDC.

Editorial Note: The case outlined above is typical for massive exposure to nitrogen oxides. Silo-filler's disease represents an occupational hazard associated with ensiled crops. Laboratory studies have shown that toxic levels of NO, NO_2, and N_2O_4 are regularly produced in silos (*1,2*). Because these oxides are dense, they tend to settle in the chute and around the base of the silo, and exposure often occurs without anyone's entering the silo. Although NO_2 is brown and has an odor, N_2O_4 is colorless and odorless, and exposure can occur without warning (*3*). If undetected by smell or sight, the potent nitrogen oxides may be inhaled deep into the lungs, where contact with the mucosal moisture produces nitric acid, which burns the airways, respiratory bronchioles, and alveoli. In fatal exposures, vascular collapse and the outpouring of serum rapidly produce shock and death. In another clinical course associated with silo-filler's disease, exposure causes cough and chest tightness. Although these conditions clear spontaneously, illness may return in three weeks with severe symptoms of fever, chills, and shortness of breath. Biopsies show a bronchiolitis obliterans with granuloma formation. This second pattern appears to respond to steroids (*4*).

Fatal and serious exposures to nitrogen oxides are not unique to farming but have been reported in association with arc and acetylene welding (*4*), burning cellulose nitrate (*5*), and dynamite blasting (*6*). Diesel fumes, furnace gases, and chemical processes involving the generation of NO_2 (*3*) are also potentially dangerous.

It is possible to prevent this type of exposure in the farm industry if farmers are aware of the following dangers and use the suggested safety measures: 1) Silos begin to produce NO_2 within 4 hours after filling, and no one should enter or come in close contact with a recently filled silo. 2) Some crops (oats, corn) produce more NO_2 than others, and heavily fertilized crops, cloudy conditions, and rain raise the risk of NO_2 production. 3) Although NO_2 levels are generally low and within a safe range after 2 weeks, dangerous amounts may remain for months if the silo has not been opened (*7*). 4) If possible, enclosed areas should be ventilated for 20 minutes before anyone enters, and individuals should be equipped with a full-face mask and an air supply.

References

1. Commins, BT, Raveney FJ, Jesson MW. Toxic gases in tower silos. Ann Occup Hyg 1971;14:275-83.
2. Wang LC, Burris RH. Mass spectrometric study of nitrogenous gases produced by silage. Agricultural and Food Chemistry 1960;8:239-42.
3. Zenz C. Oxides of nitrogen (NO_2 and NO). In: Zenz C, ed. Developments in occupational medicine. Chicago: Year Book Medical Publishers, 1980:378-82.

Silo-Filler's Disease — Continued

4. Jones GR, Proudfoot AT, Hall JI. Pulmonary effects of acute exposure to nitrous fumes. Thorax 1973;28:61-5.
5. Nichols BH. Clinical effects of inhalation of nitrogen dioxide. AJR 1930;23:516-20.
6. Becklake MR, Goldman HI, Bosman AR, Freed CC. The long-term effects of exposure to nitrous fumes. Am Rev Tuberc 1957;76:398-409.
7. Parkes WR. Occupational lung disorders. 2nd ed. London: Butterworths, 1982:475.
8. Key MM, Henschel AF, Butler J, Ligo RN, Tabershaw IR. Occupational diseases: a guide to their recognition. Cincinnati: National Institute for Occupational Safety and Health, 1977:427. (DHEW Publication; No. [NIOSH] 77-181).

Ciguatera Fish Poisoning — Bahamas, Miami

On March 6, 1982, the U.S. Coast Guard in Miami, Florida, received a request for medical assistance from an Italian freighter located in waters off Freeport, Bahamas. Numerous crew members were ill with nausea, vomiting, and muscle weakness and required medical evacuation for hospitalization and treatment.

A total of 14 ill crew members were airlifted to three Florida hospitals. Three were seen in emergency rooms and later released. Eleven were hospitalized; seven required admission to intensive care units. All patients were Italian males, age 24-40 years; symptoms included diarrhea—12 patients (86%), vomiting—11 (79%), paresthesias—11 (79%), hypotension—10 (71%), peripheral muscular weakness—9 (65%), nausea—8 (57%), abdominal cramping—6 (43%), pruritis—4 (29%), and peripheral numbness—2 (14%). These findings were consistent with ciguatera fish poisoning, and an epidemiologic investigation was initiated.

The ship employed 26 crew members and is permanently based near Freeport, where it ferries petroleum products ashore from large tankers. On March 4, a crew member caught a 25-pound barracuda while fishing from the ship. On March 6, 14 crew members cooked and ate the barracuda; all became ill within 6 hours. None of the 12 crew members who did not eat the barracuda became ill. Six of the ill crew members reported becoming sick 45 minutes to 6 hours after the implicated meal (median: 2.5 hours). All 14 crew members eventually recovered without sequelae and returned to work. Median length of hospital stay was 6 days.

Reported by SC Royal, Miami Quarantine Station, MA Poli, TJ Mende, DG Baden, Dept of Biochemistry, University of Miami, School of Medicine, RM Galbraith, TB Higerd, Dept of Clinical Immunology and Microbiology, Medical University of South Carolina, M Enriquez, MD, Dade County Health Dept, HJ Janowski, MPH, Acting State Epidemiologist, Florida Dept of Health and Rehabilitative Svcs; Field Services Div, Epidemiology Program Office, CDC.

Editorial Note: Ciguatera is a human intoxication syndrome associated with the consumption of marine tropical reef fishes. Although recent surveys indicate that poisonings are relatively uncommon in Florida (*1,2*), one investigator recorded 280 intoxications from January 1978 to June 1980 (*2*).

The ichthyosarcotoxins are thought to be accumulated through the food chain, the toxins being produced by microalgae known as dinoflagellates (*3,4*). The toxins are lipid-soluble and appear to accumulate in the flesh, fatty tissue, and viscera of large predatory species of fish, such as barracuda, grouper, and snapper (*5,6*). The isolation, purification, and characterization of the suspected toxins have been hampered by limited availability of authentic ciguatoxic fish, lack of a specific sensitive assay, and the low concentration and heterogeneity of toxins present in specimens.

The assessment of toxicity most often used is the mouse bio-assay. Based on signs elicited following intraperitoneal (IP) injection, it includes, but is not limited to inactivity, diarrhea, labored breathing, cyanosis, piloerection, tremors, paralysis, and staggering gait. Death occurs when the injection is given in higher doses, with a lethal dose, 50% kill (LD_{50}), of

Ciguatera Fish Poisoning – Continued

0.45 μg/kg for purified toxin (*5*). Thus, ciguatoxin is one of the most potent marine toxins known. The barracuda's head was toxic by mouse bio-assay with an LD_{50} (IP) of 2-5 gram equivalents of original fish meat. Thin-layer chromatographic separation of extracts revealed the presence of at least two major toxins. Further purification is under way to define more clearly the toxin(s) implicated in this outbreak.

References

1. Lawrence DN, Enriquez MB, Lumish RM, Maceo A. Ciguatera fish poisoning in Miami. JAMA 1980;244:254-8.
2. Poli MA. A review of ciguatera, with special reference to the Caribbean, and an investigation into its significance and incidence in Florida. Master's thesis, University of Miami, 1982.
3. CDC. Ciguatera fish poisoning—St. Croix, Virgin Islands of the United States. MMWR 1981;30:138-9.
4. Bagnis R, Chanteau S, Chunque E, Hurtel JM, Yasumoto T, Inoue A. Origins of ciguatera fish poisoning: a new dinoflagellate, *Gambierdiscus toxicus* Adachi and Fukuyo, definitely involved as a causal agent. Toxicon 1980;18:199-208.
5. Withers NW. Ciguatera fish poisoning. Ann Rev Med 1982;3:97-111.
6. Banner AH. Ciguatera: a disease from coral reef fish. In: Jones OA, Endean R, eds. Biology and geology of coral reefs. New York: Academic Press, 1975; III:177-213.

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