CENTERS FOR DISEASE CONTROL

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MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Meningococcal Disease — United States, 1981

During the first 9 weeks of 1981, 893 cases of invasive meningococcal disease (meningitis, meningococcemia, septic arthritis, pneumonia, osteomyelitis) were reported to CDC, compared with 528 reports received during the same time period in 1980. This represents a 69% increase. Each of the 9 MMWR reporting areas has noted an increase in the number of cases reported, with increases ranging from 2% in the Mid-Atlantic states to 193% in the West-South Central states. The individual states with the largest increases are Texas (115 cases since January 1, 1981, compared with 30 cases during the same time period in 1980), Florida (81 cases compared with 29 cases), and Connecticut (26 cases compared with 8 cases). Two counties have reported outbreaks of invasive meningococcal disease: Harris County (including Houston), Texas, and Dade County (including Miami), Florida.

The outbreak in Harris County closely followed a large influenza outbreak and was characterized by 2 other distinctive features: 1) a change in the predominant serogroup responsible for disease during endemic periods from group B to group C; and 2) a cluster of 5 cases in an elementary school classroom.

Of the 44 cases reported from Harris County, 28 (64%) were group C and 6 cases (14%) group B. Of the 21 primary cases of group C disease, 10 (48%) occurred in females, 6 (29%) in blacks, 6 (29%) in Hispanics, and 9 (43%) in whites. The mean age of the primary cases was 15.2 years with a range of 1-86 years. Seven secondary cases of group C disease occurred—1 in a day-care center, 4 in a sixth-grade classroom, and 2 in siblings of a secondary case from the affected classroom.

The cluster of 5 cases in a sixth-grade class occurred between January 28 and February 2. All of the affected children were girls. The spectrum of illness included 1 fatal case of meningococcemia without meningitis, 3 cases of meningococcemia with meningitis, and 1 case of septic arthritis.

Health officials considered the affected sixth-grade class and possibly the other children attending the school to be at high risk of disease. Classmates of the affected children were advised to take chemoprophylaxis with rifampin, and bivalent (A/C) meningococcal vaccine was offered to all students and employees of the school. No further cases have occurred at the school, and the incidence rate of cases of meningococcal disease in Harris County has returned to the expected rate.

Since January 1, 34 cases of meningococcal disease have been diagnosed in residents of Dade County compared with only 8 cases during the comparable time period in 1980. There have been 9 deaths. Four of the 34 cases occurred in household contacts of earlier cases. Twenty-one of the 30 primary meningococcal disease cases have occurred in

Meningococcal Disease – Continued

Dade County's Hispanic population. Of the isolates submitted for serogrouping, most have been sulfadiazine-resistant group B strains. Case-control studies to define significant risk factors and culture prevalence surveys to determine colonization rates amongst different populations are under way. Three cases have been reported in the last 4 weeks.

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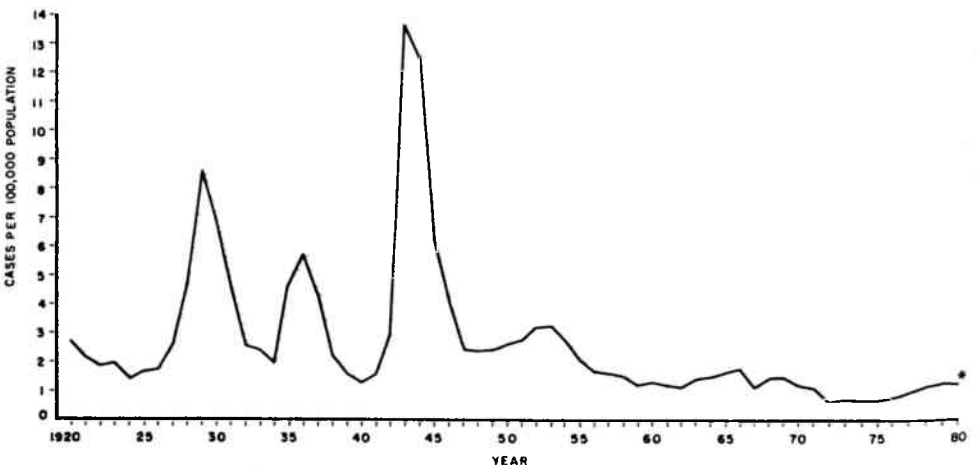
Editorial Note: In the first half of this century, wide-scale outbreaks of meningococcal disease occurred every 8-12 years; for reasons unknown, no major epidemic has occurred in the last 34 years (Figure 1). Since 1946, the endemic rate of meningococcal disease has been fairly stable at 1-3/100,000 population/year with seasonal peaks occurring in late winter and early spring (*1*). Although the increase (estimated incidence rate 2/100,000 population), observed thus far in 1981 is higher than that observed for comparable time periods in recent years, it represents only a small change from the seasonally adjusted baseline incidence rate and is not consistent with an epidemic.

Close contacts of persons with confirmed meningococcal disease are at an increased risk of developing meningococcal illness (about 1,000 times the general population) (*2*): nearly one-third of secondary cases occur in the first 4 days after the index patient is hospitalized. Persons at highest risk are household contacts; day-care center contacts (*3,4*); medical personnel who resuscitated, intubated, or suctioned the patient before antibiotics were begun; and persons who had contact with the patient's oral secretions through intimate contact or through the sharing of food and beverages. Current recommendations regarding chemoprophylaxis of close contacts are early institution of rifampin—the drug of choice unless the organism is known to be sensitive to sulfadiazine—

FIGURE 1. Reported meningococcal infection rates, by year, United States, 1920-1980



*Provisional data for 1980.

Meningococcal Disease – Continued

600 mg twice a day for adults, 10 mg/kg twice a day for children 1 month-12 years of age, and 5 mg/kg twice a day for neonates. Dosages of sulfadiazine are 1 g twice a day for adults, 500 mg twice a day for children 1-12 years of age, and 500 mg once daily for children less than 1 year of age. Treatment with rifampin or sulfadiazine is for 2 days.

Since at least half of the secondary cases in families of persons with meningococcal disease occur more than 5 days after the primary case—long enough to yield potential benefit from vaccination if chemoprophylaxis has not been successful—vaccination should be considered an adjunct to chemoprophylaxis for high-risk contacts of persons with groups A or C meningococcal disease (*5*). In addition, vaccine may help control outbreaks of meningococcal disease due to serogroups A or C. High-risk populations should be identified (by neighborhood, census tract, or other reasonable boundary) and vaccinated.

References

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4. Favorova LA, Sokova IN, Cherynshova TF, et al. Results of controlled epidemiological trial on the use of placental gamma globulin in foci of meningococcal infection. Zh Mikrobiol Epidemiol Immunobiol 1975;6:15.
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Trichinosis Associated with Meat From a Grizzly Bear – Alaska

Eight cases of trichinosis reported recently from Barrow, Alaska, were associated with a dinner on December 20, 1980. The 12 persons who attended were served a meal that included "maktak" (whale blubber), "ugruk" (bearded-seal meat, dried and stored in seal oil), fresh raw whitefish and grayling, and "quaq" (raw frozen meat), thought by the participants to be caribou but later discovered to have been grizzly bear.

Five men and 3 women, ranging in age fom 32-76 years, became ill 2-16 days after the meal (mean 8.6 days). All 8 reported eating quaq, while the 4 who denied doing so remained well (attack rate 100%, $p<0.01$). Quaq was the only meat eaten by all the persons who became ill. Thirty other family members who were not present at the dinner also remained well ($p<0.001$ for attending the dinner). Signs and symptoms of illness included edema (100%), fatigue (100%), myalgia (87.5%), rash (87.5%), fever (87.5%), chills (75%), periorbital edema (62.5%), headache (50%), visual disturbance (37.5%), diarrhea (37.5%), abdominal cramps (25%), nausea (25%), and vomiting (25%). None of the ill persons had notable pulmonary, neurologic, or cardiac complications. Five were hospitalized. Five received steroids, and 2 received anthelmintic therapy.

The grizzly bear from which the meat came had been shot the previous autumn at the family's summer camp, 140 miles inland from Barrow. At that time, parts had been cooked thoroughly and consumed without adverse effects. The hind quarters were included in a large cache of moose and caribou meat that was returned to Barrow and stored frozen in the family's cold cellar. None of the bear meat had been eaten in Barrow before the dinner on December 20, and none had been given away. The remains of the

Trichinosis – Continued

hind quarter eaten at the dinner were fed to dogs; the other hind quarter remained in cold storage. A sample taken from the digestive tract of one of the patients contained 70 *Trichinella* larvae per gram of meat.

Blood was obtained 3 weeks after the dinner from 10 of the 12 persons who attended, including all 8 who became ill. Maximum eosinophilia for each patient ranged from 14%-51%. Two who denied eating quaq had 8% and 9% eosinophils, and 3 others who had not attended the dinner had 2%-3%. Acute and early-convalescent-phase serum specimens from 4 ill persons showed rising *Trichinella* bentonite flocculation titers.

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Editorial Note: This is the fourth outbreak of trichinosis in Barrow since 1975. Eating uncooked walrus led to 29 cases in 1975 and 4 in 1976. One case occurred in 1980 for which the source was not identified.

Subsistence living is a normal pattern in Barrow, and traditional foods are of major economic and cultural importance. Many dishes include fresh, fermented, dried, or

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

[Cumulative totals include revised and delayed reports through previous weeks.]

DISEASE	10th WEEK ENDING		MEDIAN 1976-1980	CUMULATIVE, FIRST 10 WEEKS		
	March 14 1981	March 8 1980		March 14 1981	March 8 1980	MEDIAN 1976-1980
Aseptic meningitis	55	44	41	604	637	387
Brucellosis	–	3	3	13	33	33
Chickenpox	6,649	6,783	6,793	52,901	49,616	55,044
Diphtheria	–	–	2	3	1	19
Encephalitis: Primary (arthropod-borne & unspec.)	16	8	8	132	115	115
Post-infectious	1	2	5	12	25	30
Hepatitis, Viral: Type B	356	331	331	3,396	2,931	2,852
Type A	521	517	603	4,670	5,272	5,677
Type unspecified	271	245	200	2,127	2,010	1,766
Malaria	28	25	7	241	258	71
Measles (rubeola)	73	281	944	480	1,742	4,091
Meningococcal infections: Total	89	91	58	989	619	521
Civilian	88	91	57	987	613	517
Military	1	–	–	2	6	3
Mumps	115	590	623	1,023	2,855	4,077
Pertussis	11	15	15	186	200	225
Rubella (German measles)	49	165	460	465	794	2,025
Tetanus	–	1	1	8	7	7
Tuberculosis	514	588	588	4,595	4,536	4,887
Tularemia	2	–	1	18	13	17
Typhoid fever	5	4	5	78	47	68
Typhus fever, tick-borne (Rky. Mt. spotted)	–	–	2	12	8	9
Venereal diseases:						
Gonorrhea: Civilian	17,591	18,166	18,213	182,163	184,218	181,988
Military	327	653	481	5,440	5,359	5,359
Syphilis, primary & secondary: Civilian	505	547	479	5,668	5,070	4,633
Military	6	3	2	77	77	60
Rabies in animals	125	77	55	996	882	451

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1981		CUM. 1981
Anthrax	–	Poliomyelitis: Total	–
Botulism Hawaii 1	10	Paralytic	–
Cholera	–	Psittacosis Wis. 1, Calif. 1	15
Congenital rubella syndrome	2	Rabies in man	–
Leprosy Oreg. 1	41	Trichinosis Mass. 2, Conn. 2, Tex. 1	52
Leptospirosis Hawaii 1	11	Typhus fever, flea-borne (endemic, murine)	–
Plague	1		

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending March 14, 1981 and March 8, 1980 (10th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1981	1981	1981	1981	CUM. 1981	1981	1980	1981	1981	1981	1981	1981	CUM. 1981
UNITED STATES	55	–	6,649	–	3	16	8	1	356	521	271	28	241
NEW ENGLAND	1	–	714	–	–	1	2	–	5	15	12	–	11
Maine	–	–	175	–	–	–	–	–	–	–	–	–	1
N.H.	–	–	20	–	–	–	–	–	1	3	–	–	2
Vt.	–	–	57	–	–	–	–	–	1	3	1	–	–
Mass.	–	–	206	–	–	1	–	–	1	1	11	–	6
R.I.	–	–	58	–	–	–	–	–	–	2	–	–	1
Conn.	1	–	198	–	–	–	2	–	2	6	–	–	1
MID. ATLANTIC	7	–	262	–	–	4	1	1	54	65	26	1	18
Upstate N.Y.	3	–	139	–	–	2	–	–	14	9	6	–	5
N.Y. City	3	–	121	–	–	2	–	–	12	10	7	1	10
N.J.	–	–	NN	–	–	–	–	–	13	33	13	–	2
Pa.	1	–	2	–	–	–	1	1	15	13	–	–	1
E.N. CENTRAL	6	–	3,097	–	–	3	1	–	53	41	29	–	5
Ohio	–	–	305	–	–	1	–	–	18	10	8	–	–
Ind.	1	–	350	–	–	–	1	–	13	15	10	–	1
Ill.	2	–	926	–	–	–	–	–	3	9	8	–	1
Mich.	3	–	949	–	–	2	–	–	17	5	3	–	3
Wis.	–	–	567	–	–	–	–	–	2	2	–	–	–
W.N. CENTRAL	4	–	922	–	–	3	–	–	22	31	20	2	9
Minn.	–	–	3	–	–	–	–	–	1	5	–	–	2
Iowa	–	–	431	–	–	3	–	–	2	4	1	–	2
Mo.	4	–	1	–	–	–	–	–	18	16	19	–	1
N. Dak.	–	–	–	–	–	–	–	–	–	–	–	–	–
S. Dak.	–	–	31	–	–	–	–	–	–	2	–	1	1
Nebr.	–	–	26	–	–	–	–	–	–	–	–	–	–
Kans.	–	–	430	–	–	–	–	–	1	4	–	1	3
S. ATLANTIC	4	–	638	–	1	–	–	–	61	54	12	1	24
Del.	–	–	7	–	–	–	–	–	–	1	–	–	–
Md.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	4
D.C.	–	–	–	–	–	–	–	–	–	–	–	–	1
Va.	2	–	34	–	–	–	–	–	12	7	5	–	8
W. Va.	–	–	227	–	–	–	–	–	2	2	–	–	–
N.C.	1	–	NN	–	–	–	–	–	4	4	1	–	1
S.C.	–	–	63	–	–	–	–	–	19	1	–	–	–
Ga.	–	–	33	–	–	–	–	–	12	27	–	–	3
Fla.	1	–	274	–	1	–	–	–	12	12	6	1	7
E.S. CENTRAL	6	–	53	–	–	1	1	–	21	30	3	–	–
Ky.	–	–	45	–	–	–	–	–	4	18	1	–	–
Tenn.	–	–	NN	–	–	1	1	–	11	4	–	–	–
Ala.	5	–	–	–	–	–	–	–	3	4	2	–	–
Miss.	1	–	8	–	–	–	–	–	3	4	–	–	–
W.S. CENTRAL	11	–	519	–	–	1	1	–	40	102	84	3	12
Ark.	–	–	6	–	–	–	–	–	3	5	–	1	2
La.	3	–	NN	–	–	–	1	–	9	16	11	1	2
Okla.	2	–	–	–	–	–	–	–	4	2	3	–	1
Tex.	6	–	513	–	–	1	–	–	24	79	70	1	7
MOUNTAIN	7	–	95	–	1	2	–	–	18	46	35	–	6
Mont.	–	–	–	–	1	–	–	–	–	2	–	–	–
Idaho	–	–	–	–	–	–	–	–	–	3	–	–	–
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	–
Colo.	–	–	62	–	–	2	–	–	7	12	2	–	3
N. Mex.	1	–	–	–	–	–	–	–	2	6	3	–	–
Ariz.	6	–	NN	–	–	–	–	–	5	19	28	–	2
Utah	–	–	1	–	–	–	–	–	–	–	2	–	–
Nev.	–	–	32	–	–	–	–	–	4	4	–	–	1
PACIFIC	9	–	349	–	1	1	2	–	82	137	50	21	156
Wash.	–	–	297	–	–	–	–	–	4	36	10	–	9
Oreg.	1	–	5	–	–	–	–	–	9	14	1	–	3
Calif.	7	–	–	–	–	1	2	–	66	86	38	21	144
Alaska	–	–	29	–	1	–	–	–	–	–	1	–	–
Hawaii	1	–	18	–	–	–	–	–	3	1	–	–	–
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
P.R.	4	–	11	–	–	–	1	–	2	2	1	–	3
V.I.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	1
Pac. Trust Terr.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–

NN: Not notifiable. NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending March 14, 1981 and March 8, 1980 (10th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	1981	1981	CUM. 1981	CUM. 1981
UNITED STATES	73	480	1,742	89	989	619	115	1,023	11	49	465	8
NEW ENGLAND	3	17	170	8	67	26	7	46	–	–	47	–
Maine	–	–	1	2	10	1	1	11	–	–	30	–
N.H.	–	2	92	–	6	4	1	5	–	–	11	–
Vt.	–	1	72	–	–	1	–	1	–	–	–	–
Mass.	3	10	2	3	17	9	2	16	–	–	6	–
R.I.	–	–	2	1	6	1	2	6	–	–	–	–
Conn.	–	4	1	2	28	10	1	7	–	–	–	–
MID. ATLANTIC	18	169	380	14	102	95	14	97	2	5	55	1
Upstate N.Y.	11	126	115	5	33	40	–	23	–	1	25	–
N.Y. City	4	17	81	3	9	26	–	10	–	1	10	1
N.J.	1	8	59	–	33	18	1	20	–	3	18	–
Pa.	2	18	125	6	27	11	13	44	2	–	2	–
E.N. CENTRAL	1	32	183	11	111	78	38	308	3	9	96	1
Ohio	–	11	18	4	36	33	3	48	1	–	2	–
Ind.	–	2	12	–	12	13	7	42	1	2	32	–
Ill.	1	5	47	2	32	8	8	46	–	5	25	–
Mich.	–	14	66	5	27	19	18	125	–	–	10	1
Wis.	–	–	40	–	4	5	2	47	1	2	27	–
W.N. CENTRAL	1	4	218	5	32	25	12	81	1	2	24	2
Minn.	–	1	154	3	15	8	–	1	–	–	5	1
Iowa	–	1	–	–	8	3	2	25	1	–	–	–
Mo.	–	–	34	2	5	10	1	3	–	–	1	1
N. Dak.	–	–	–	–	–	1	–	–	–	–	–	–
S. Dak.	–	–	–	–	1	2	–	1	–	–	–	–
Nebr.	–	1	6	–	–	–	–	–	–	–	–	–
Kans.	1	1	24	–	3	1	9	51	–	2	18	–
S. ATLANTIC	33	122	410	21	269	136	12	151	–	3	50	1
Del.	–	–	1	1	5	–	–	3	–	–	–	–
Md.	NA	–	10	–	10	13	NA	26	NA	NA	–	–
D.C.	–	–	–	–	1	–	–	–	–	–	–	–
Va.	–	–	83	5	30	12	6	41	–	1	6	–
W. Va.	–	3	3	2	15	3	1	24	–	–	10	–
N.C.	–	–	29	–	32	27	–	3	–	–	2	–
S.C.	–	–	–	5	39	15	–	4	–	–	4	1
Ga.	7	48	191	2	43	32	–	13	–	1	13	–
Fla.	26	71	93	6	94	34	5	37	–	1	15	–
E.S. CENTRAL	–	1	91	6	78	62	3	35	–	2	13	–
Ky.	–	–	29	1	23	18	–	14	–	1	7	–
Tenn.	–	1	4	–	23	15	3	12	–	1	6	–
Ala.	–	–	12	5	23	18	–	8	–	–	–	–
Miss.	–	–	46	–	9	11	–	1	–	–	–	–
W.S. CENTRAL	4	29	126	8	184	71	6	47	1	5	33	1
Ark.	–	1	1	1	17	3	–	–	–	–	–	–
La.	–	–	3	1	37	26	–	3	–	–	2	–
Okla.	–	2	67	1	10	4	–	–	–	–	–	–
Tex.	4	26	55	5	120	38	6	44	1	5	31	1
MOUNTAIN	1	9	40	–	36	30	1	31	–	1	19	1
Mont.	–	–	1	–	1	1	–	3	–	–	1	–
Idaho	–	–	–	–	2	3	–	2	–	–	–	–
Wyo.	–	–	–	–	–	1	–	–	–	–	1	–
Colo.	–	–	2	–	17	8	1	12	–	1	14	–
N. Mex.	–	–	1	–	4	5	–	–	–	–	–	–
Ariz.	–	1	13	–	7	5	–	6	–	–	1	1
Utah	–	–	21	–	3	1	–	4	–	–	2	–
Nev.	1	8	2	–	2	6	–	4	–	–	–	–
PACIFIC	12	97	124	16	110	96	22	227	4	22	128	1
Wash.	–	–	21	8	24	14	10	71	–	12	32	–
Oreg.	–	–	–	1	9	16	3	31	1	1	4	–
Calif.	12	96	98	7	71	65	9	117	3	9	92	1
Alaska	–	–	2	–	2	1	–	1	–	–	–	–
Hawaii	–	1	3	–	4	–	–	7	–	–	–	–
Guam	NA	–	2	–	–	–	NA	–	NA	NA	–	–
P.R.	5	46	15	–	2	4	3	13	–	–	–	–
V.I.	NA	2	4	–	–	–	NA	1	NA	NA	–	–
Pac. Trust Terr.	NA	–	3	–	–	–	NA	–	NA	NA	1	–

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending March 14, 1981 and March 8, 1980 (10th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1981	CUM. 1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1980	CUM. 1981
UNITED STATES	514	4,595	18	5	78	-	12	17,591	182,163	184,218	505	5,668	5,070	996
NEW ENGLAND	16	135	-	-	5	-	-	420	4,728	4,890	10	137	117	5
Maine	2	13	-	-	-	-	-	27	232	324	-	1	-	5
N.H.	-	2	-	-	-	-	-	12	175	162	-	9	-	-
Vt.	-	7	-	-	-	-	-	8	71	145	-	2	1	-
Mass.	10	78	-	-	5	-	-	162	1,882	1,930	10	82	64	-
R.I.	1	6	-	-	-	-	-	30	221	273	-	10	6	-
Conn.	3	29	-	-	-	-	-	181	2,147	2,056	-	33	46	-
MID. ATLANTIC	125	828	-	2	10	-	3	2,180	20,408	20,636	91	824	718	2
Upstate N.Y.	30	141	-	1	3	-	1	527	3,229	3,086	18	78	53	1
N.Y. City	54	343	-	1	1	-	2	1,000	7,375	8,237	52	500	475	-
N.J.	4	171	-	-	-	-	-	156	4,639	4,145	9	102	94	-
Pa.	37	173	-	-	-	-	-	497	5,165	5,168	12	144	96	1
E.N. CENTRAL	71	593	-	-	5	-	1	3,211	28,155	30,613	8	290	490	104
Ohio	11	99	-	-	-	-	1	1,838	11,760	7,718	2	54	81	8
Ind.	5	35	-	-	-	-	-	258	2,459	3,248	3	24	59	6
Ill.	31	261	-	-	4	-	-	384	5,179	9,955	-	117	271	65
Mich.	19	173	-	-	-	-	-	523	6,269	6,534	3	75	58	-
Wis.	5	25	-	-	1	-	-	208	2,488	3,158	-	20	21	25
W.N. CENTRAL	16	154	2	-	2	-	1	826	8,867	7,999	10	105	51	422
Minn.	-	22	-	-	1	-	-	200	1,486	1,370	7	35	18	86
Iowa	1	27	-	-	-	-	-	125	915	907	-	5	4	142
Mo.	14	61	2	-	-	-	1	361	3,945	3,343	3	55	28	29
N. Dak.	1	7	-	-	-	-	-	10	110	112	-	1	-	70
S. Dak.	-	9	-	-	1	-	-	14	238	273	-	-	-	46
Nebr.	-	7	-	-	-	-	-	66	676	663	-	3	1	22
Kans.	-	21	-	-	-	-	-	50	1,497	1,331	-	6	-	27
S. ATLANTIC	93	994	5	-	9	-	4	3,725	46,031	44,644	101	1,512	1,221	63
Del.	2	9	1	-	-	-	-	75	719	679	-	3	5	-
Md.	NA	67	-	NA	2	NA	-	NA	4,371	4,408	NA	108	94	1
D.C.	7	65	-	-	1	-	-	254	3,112	3,286	12	140	79	-
Va.	18	110	-	-	-	-	-	447	4,339	3,748	9	142	104	11
W. Va.	2	38	-	-	4	-	-	64	617	602	-	3	4	2
N.C.	11	195	1	-	1	-	4	685	7,667	7,093	5	109	83	-
S.C.	9	90	2	-	-	-	-	450	4,253	4,183	11	109	61	1
Ga.	21	154	1	-	-	-	-	671	9,028	7,946	43	388	362	35
Fla.	23	266	-	-	1	-	-	1,079	11,925	12,699	21	510	429	13
E.S. CENTRAL	62	393	2	1	3	-	3	1,705	15,603	14,786	41	420	415	58
Ky.	20	92	2	-	-	-	1	244	2,008	2,121	2	19	24	18
Tenn.	21	139	-	1	1	-	1	818	5,942	5,242	15	164	174	32
Ala.	15	122	-	-	1	-	-	297	4,894	4,222	12	119	74	8
Miss.	6	40	-	-	1	-	1	346	2,759	3,201	12	118	143	-
W.S. CENTRAL	42	412	3	1	5	-	-	2,540	26,097	23,464	168	1,403	960	196
Ark.	10	61	-	-	-	-	-	168	1,564	1,763	6	26	35	34
La.	8	93	2	-	-	-	-	343	3,993	3,730	33	291	211	11
Okla.	-	54	-	-	1	-	-	257	2,584	2,391	3	28	13	31
Tex.	24	204	1	1	4	-	-	1,772	17,956	15,580	126	1,058	701	120
MOUNTAIN	18	138	5	-	5	-	-	781	7,462	7,000	9	155	114	24
Mont.	-	12	1	-	4	-	-	30	288	272	1	4	-	24
Idaho	-	5	1	-	-	-	-	43	300	340	-	2	3	-
Wyo.	-	2	-	-	-	-	-	25	168	205	1	2	4	-
Colo.	-	8	2	-	1	-	-	220	1,983	1,727	-	40	33	-
N. Mex.	7	34	-	-	-	-	-	73	879	1,017	2	31	18	-
Ariz.	4	52	-	-	-	-	-	277	2,391	1,912	-	33	40	-
Utah	-	6	1	-	-	-	-	33	352	335	-	2	4	-
Nev.	7	19	-	-	-	-	-	80	1,101	1,192	5	41	12	-
PACIFIC	71	948	1	1	34	-	-	2,203	24,812	30,186	67	822	984	122
Wash.	9	73	-	-	-	-	-	336	2,298	2,520	-	23	58	-
Oreg.	1	34	-	-	2	-	-	52	2,014	1,921	4	17	22	1
Calif.	59	827	1	1	30	-	-	1,666	19,205	24,386	62	763	892	109
Alaska	-	1	-	-	-	-	-	86	695	701	-	1	1	12
Hawaii	2	13	-	-	2	-	-	63	600	658	1	18	11	-
Guam	NA	-	-	NA	-	NA	-	NA	-	26	NA	-	-	-
P.R.	-	1	-	1	2	-	-	92	636	453	17	144	103	10
V.I.	NA	-	-	NA	1	NA	-	NA	7	33	NA	-	6	-
Pac. Trust Terr.	NA	8	-	NA	-	NA	-	NA	46	94	NA	-	-	-

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending March 14, 1981 (10th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	<1	
NEW ENGLAND	640	439	140	18	28	42
Boston, Mass.††	178	110	43	7	11	13
Bridgeport, Conn.	47	28	15	1	1	4
Cambridge, Mass.	27	22	4	1	–	3
Fall River, Mass.	32	30	2	–	–	–
Hartford, Conn.	40	25	11	2	1	–
Lowell, Mass.	31	22	5	1	1	2
Lynn, Mass.	23	18	5	–	–	3
New Bedford, Mass.	32	23	8	1	–	1
New Haven, Conn.	36	23	4	1	6	4
Providence, R.I.	63	50	7	1	4	1
Somerville, Mass.††	8	7	1	–	–	1
Springfield, Mass.	37	24	8	3	2	1
Waterbury, Conn.	20	16	4	–	–	1
Worcester, Mass.	66	41	23	–	2	8
MID. ATLANTIC	2,684	1,764	607	165	86	57
Albany, N.Y.	57	40	11	2	4	2
Allentown, Pa.	18	13	5	–	–	–
Buffalo, N.Y.	150	96	37	8	5	10
Camden, N.J.	38	25	8	3	1	1
Elizabeth, N.J.	30	23	6	1	–	1
Erie, Pa.†	42	29	8	4	–	–
Jersey City, N.J.	41	28	8	2	2	1
Newark, N.J.	65	41	15	5	1	6
N.Y. City, N.Y.	1,371	882	326	97	34	46
Paterson, N.J.	27	20	6	1	–	1
Philadelphia, Pa.†	358	222	78	25	27	13
Pittsburgh, Pa.†	51	30	17	2	1	–
Reading, Pa.	28	19	8	1	–	2
Rochester, N.Y.	115	84	20	5	4	4
Schenectady, N.Y.	28	19	6	3	–	1
Scranton, Pa.†	30	24	2	–	1	2
Syracuse, N.Y.	136	100	22	6	4	4
Trenton, N.J.	43	27	14	–	1	1
Utica, N.Y.	29	22	7	–	–	–
Yonkers, N.Y.	27	20	3	–	1	2
E.N. CENTRAL	2,285	1,418	583	146	73	89
Akron, Ohio	63	42	16	3	1	1
Canton, Ohio	45	34	10	1	–	2
Chicago, Ill.	510	294	144	41	11	14
Cincinnati, Ohio	160	100	35	12	7	25
Cleveland, Ohio	180	101	56	13	10	6
Columbus, Ohio	137	82	37	8	2	3
Dayton, Ohio	126	81	33	7	4	6
Detroit, Mich.	278	163	66	26	10	4
Evansville, Ind.	58	32	19	7	–	1
Fort Wayne, Ind.	49	28	15	4	2	1
Gary, Ind.	17	10	6	–	–	1
Grand Rapids, Mich.	54	43	9	–	2	6
Indianapolis, Ind.	168	104	42	6	9	6
Madison, Wis.	29	20	4	3	1	3
Milwaukee, Wis.	137	104	28	2	1	4
Peoria, Ill.	39	23	6	1	8	4
Rockford, Ill.	28	16	8	1	1	–
South Bend, Ind.	42	30	10	2	–	–
Toledo, Ohio	89	68	17	3	1	–
Youngstown, Ohio	76	43	22	6	3	2
W.N. CENTRAL	708	468	149	38	29	17
Des Moines, Iowa	61	39	15	4	–	–
Duluth, Minn.	25	20	3	1	–	3
Kansas City, Kans.	44	32	6	3	1	3
Kansas City, Mo.	100	56	26	9	8	2
Lincoln, Nebr.	30	17	6	2	2	1
Minneapolis, Minn.	80	56	9	9	3	2
Omaha, Nebr.	75	53	13	3	2	2
St. Louis, Mo.	180	113	48	3	10	–
St. Paul, Minn.	61	47	13	1	–	1
Wichita, Kans.	52	35	10	3	3	3

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	<1	
S. ATLANTIC	1,170	703	313	68	50	45
Atlanta, Ga.	148	84	43	10	4	3
Baltimore, Md.	122	81	25	4	9	2
Charlotte, N.C.	63	34	19	4	5	2
Jacksonville, Fla.	128	66	33	15	8	9
Miami, Fla.	128	76	41	8	1	2
Norfolk, Va.	60	39	17	2	1	8
Richmond, Va.	91	48	32	2	7	5
Savannah, Ga.	61	34	15	5	4	5
St. Petersburg, Fla.	103	90	9	2	1	3
Tampa, Fla.	81	51	24	3	2	4
Washington, D.C.	140	74	42	11	5	2
Wilmington, Del.	45	26	13	2	3	–
E.S. CENTRAL	695	435	180	46	15	38
Birmingham, Ala.	111	70	32	5	–	1
Chattanooga, Tenn.	65	45	12	7	1	8
Knoxville, Tenn.	35	21	10	3	–	–
Louisville, Ky.	92	59	21	6	3	7
Memphis, Tenn.	158	96	48	8	3	11
Mobile, Ala.	61	34	15	5	5	4
Montgomery, Ala.	49	36	10	2	1	3
Nashville, Tenn.	124	74	32	10	2	4
W.S. CENTRAL	1,264	717	313	115	50	65
Austin, Tex.	34	26	5	2	1	4
Baton Rouge, La.	60	35	21	1	1	1
Corpus Christi, Tex.	44	23	15	2	2	–
Dallas, Tex.	204	104	59	24	7	5
El Paso, Tex.	66	34	14	4	5	5
Fort Worth, Tex.	92	60	18	7	4	10
Houston, Tex.	232	96	73	34	10	6
Little Rock, Ark.	78	47	16	8	4	7
New Orleans, La.	120	71	28	11	5	1
San Antonio, Tex.	185	124	33	12	6	13
Shreveport, La.	57	33	15	4	2	3
Tulsa, Okla.	92	64	16	6	3	10
MOUNTAIN	578	317	152	44	33	23
Albuquerque, N. Mex.	63	28	14	14	2	2
Colo. Springs, Colo.	27	13	10	1	1	2
Denver, Colo.	119	58	34	7	16	3
Las Vegas, Nev.	79	41	25	6	2	2
Ogden, Utah	22	11	9	–	2	2
Phoenix, Ariz.	115	72	28	4	2	4
Pueblo, Colo.	21	12	6	2	–	–
Salt Lake City, Utah	45	28	7	2	5	1
Tucson, Ariz.	87	54	19	8	3	7
PACIFIC	1,752	1,167	362	107	63	87
Berkeley, Calif.	19	12	3	3	–	–
Fresno, Calif.	72	53	10	4	5	7
Glendale, Calif.	22	16	4	1	1	1
Honolulu, Hawaii	73	43	18	5	5	5
Long Beach, Calif.	90	56	22	6	4	1
Los Angeles, Calif.	438	296	94	26	10	21
Oakland, Calif.	53	30	15	5	2	2
Pasadena, Calif.	47	34	7	3	3	2
Portland, Oreg.	137	93	22	10	6	6
Sacramento, Calif.	85	56	18	8	1	12
San Diego, Calif.	134	95	23	3	7	1
San Francisco, Calif.	180	113	42	11	7	6
San Jose, Calif.	165	115	28	13	3	11
Seattle, Wash.	132	87	28	7	5	4
Spokane, Wash.	58	39	16	1	1	4
Tacoma, Wash.	47	29	12	1	3	4
TOTAL	11,776	7,428	2,799	747	427	503

*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.

††Data not available this week. Figures are estimates based on average percent of regional totals.

Trichinosis – Continued

frozen meats that are eaten raw. Many residents state, however, that they were taught by their elders to cook bear meat thoroughly to avoid illness. The North Slope Borough Health and Social Services Agency has reinforced that tradition with spot radio and television announcements. The persons involved in this outbreak, including those who prepared the dinner on December 20, were informed of the risk of acquiring trichinosis from eating bear or walrus meat, and did not intentionally serve uncooked bear meat. The meat was eaten after being dipped in seal oil, which may have disguised its usually distinctive taste.

Since 1975, the Alaska Department of Health and Social Services has provided the service of testing meat samples for *Trichinella* organisms. The residents of Barrow are encouraged to take advantage of this service by submitting approximately 1 oz. of meat from any killed bear or walrus. Bear and walrus should be cooked thoroughly before being eaten. Temperatures in household freezers are not low enough to reduce infectivity of arctic *Trichinella* spp. For example, portions of infected Alaskan black bear meat held at -15 C (5 F) for up to 35 days showed no loss of infectivity for laboratory animals (*1*).

Reference

1. CDC. Trichinosis surveillance annual summary 1978. Issued Sept 1979.

Current Trends

Botulism – United States, 1979-1980

CDC received reports of 127 cases of botulism in the 2-year period 1979-1980. Six persons died from their illness. For analysis, cases were classified in one of the following ways: foodborne botulism, 26 cases; wound botulism, 5 cases; infant botulism, 90 cases; and botulism of undetermined classification, 6 cases.

Foodborne botulism: Seven outbreaks (8 cases) of foodborne botulism were reported in 1979 (*1*), and 14 outbreaks (18 cases) in 1980. Ten states reported outbreaks. Thirteen outbreaks involved *Clostridium botulinum* type A; 4 outbreaks, type B; and 4 outbreaks, type E. All type A outbreaks occurred west of the Mississippi, and all type B outbreaks, east of the Mississippi; the type E outbreaks were reported from Alaska. The median age of patients was 56 years (range 5-80 years). All foods involved in outbreaks were canned or processed at home. Home-canned asparagus and home-canned beets were each implicated in 3 outbreaks. Home-canned peppers were responsible for 2 outbreaks. Three deaths, all in 1980, were reported in association with foodborne botulism outbreaks.

Wound botulism: Three cases of wound botulism were reported in 1979 (*2*), and 2 cases in 1980. Two of the cases occurred in California, 2 in Washington, and 1 in Texas. All involved type A *C. botulinum*, although type B organisms were also cultured from the wound of 1 California patient. All patients were male; their median age was 29 years (range 6-41 years).

Infant botulism: Twenty-four cases of infant botulism were reported in 1979, and 66 cases in 1980. Of the 18 states reporting cases, California reported the most cases with 39, followed by Pennsylvania with 13. Five states—Idaho, Kansas, Kentucky, North Carolina, and Ohio—reported cases for the first time in 1979-1980. Forty-three cases involved type A *C. botulinum*; 45 cases, type B; and 1 case, type F. In 1 case the strain

Botulism — Continued

isolated produced toxin neutralized by a combination of type B and F antitoxins. Patients ranged in age from 1 to 38 weeks. Cases occurred most frequently in infants 8-11 weeks old (24 cases); however, 8 patients were 24 weeks of age or older, the oldest being 38 weeks. One death was reported.

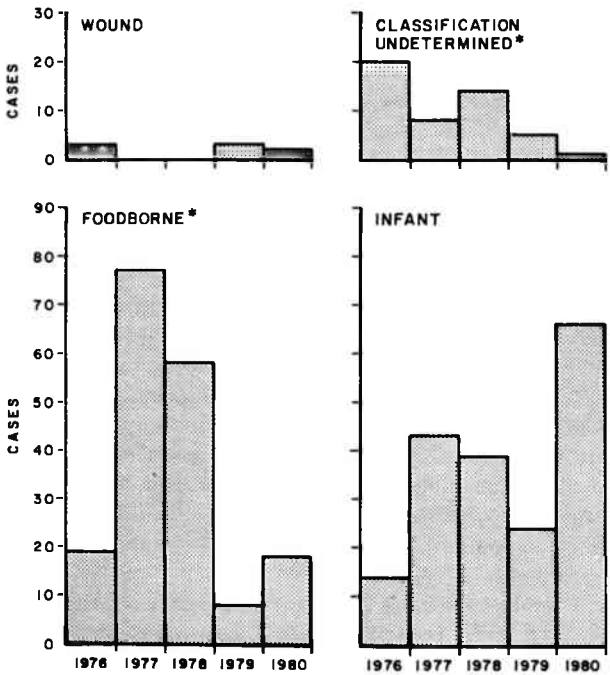
Undetermined classification: The category "undetermined classification" includes cases in individuals over 1 year of age who did not have a wound and for which no vehicle could be identified. Five outbreaks (5 cases) were placed in this category in 1979, and 1 outbreak (1 case) in 1980. Four outbreaks involved type A *C. botulinum*, and 2, type B. The median age of patients was 37 years (range 15-71 years). Two deaths were reported in association with these outbreaks.

Reported by Enterobacteriology Br, Bacteriology Div, and Enteric Diseases Br, Bacterial Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: Fewer cases of foodborne botulism occurred in 1979-1980 than in 1977-1978, when several large common-source outbreaks resulted in a record number of cases (*3-5*) (Figure 2). In contrast, the 5 cases of wound botulism reported in 1979-1980 were the first reported since 1976; before 1979, a total of 18 cases had been reported in the United States since the syndrome was first recognized in 1943 (*6*).

Ninety-eight cases of infant botulism were reported to CDC in the period 1975-1978 (*7*). With the additional 90 cases in 1979-1980, a total of 188 cases of infant botulism have now been reported. The 66 cases in 1980 represent the largest number of cases

FIGURE 2. Reported botulism cases, by year, United States, 1976-1980



*The cases reported under "classification undetermined" for the years 1976 and 1977 were originally reported in the foodborne category.

Botulism – Continued

reported in a single year. The 38-week-old patient in 1980 is the oldest patient yet reported.

Before 1978, the cases in the undetermined classification were included in the totals for foodborne botulism. Many of these cases may actually be foodborne botulism; however, when it is not possible to identify a vehicle by epidemiologic or laboratory investigation, a case is placed in this category. This category was formed to permit comparison of these cases with known foodborne ones, as it is possible that these undetermined cases represent a pathogenic mechanism other than ingestion of pre-formed toxin.

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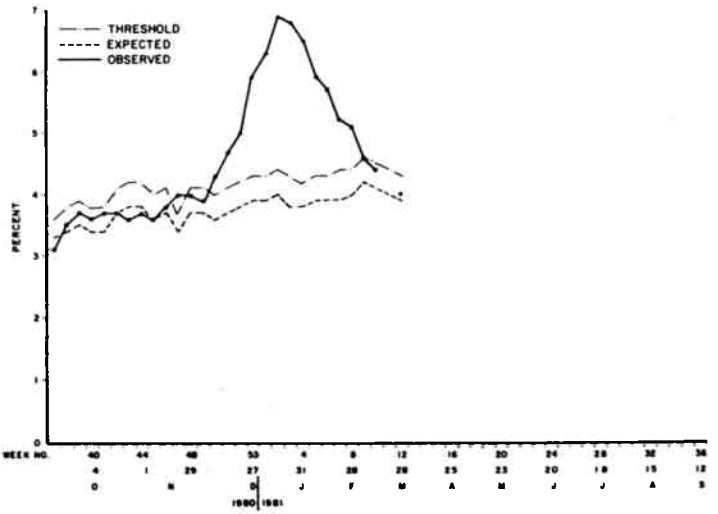
1. Morris JG, Hatheway CL. Botulism in the United States, 1979. J Infect Dis 1980;142:302-5.
2. CDC. Wound botulism—Texas, California, Washington. MMWR 1980;29:34-6.
3. CDC. Follow-up on botulism—Michigan. MMWR 1977;26:135.
4. CDC. Botulism—New Mexico. MMWR 1978;27:138.
5. CDC. Botulism—Colorado. MMWR 1978;27:483-4.
6. CDC. Botulism in the United States, 1899-1977. Handbook for epidemiologists, clinicians, and laboratory workers, issued May 1979.
7. CDC. Botulism—United States, 1978. MMWR 1979;28:73-5.

Influenza – United States

For the week ending March 7, 1981, 3 states—Indiana, Iowa, and Kansas—reported regional outbreaks of influenza. Nebraska was the only state reporting widespread outbreaks. Deaths due to pneumonia and influenza reported in 121 cities dropped below threshold level for the first time since December 13, 1980 (Figure 3).

Reported by participating State Epidemiologists; Surveillance and Assessment Br, Immunization Div, Center for Prevention Services, CDC.

FIGURE 3. Observed and expected ratio of deaths attributed to pneumonia and influenza in 121 U.S. cities, 1980-1981



*Forecasts are made at 4-week intervals except during epidemic periods.

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