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EPIDEMIOLOGIC NOTES AND REPORTS
TYPE C STAPHYLOCOCCAL ENTEROTOXIN GASTROENTERITIS – Tennessee

On July 26-27, 1973, approximately 725 incoming freshmen, 475 parents, and 150 faculty and administration staff attended summer pre-registration activities at a large state university in Johnson City, Tennessee. On July 27, several hours after a box lunch was served between 12:00 and 1:00 p.m., an estimated 300 persons experienced the onset of vomiting and diarrhea, and 84 were subsequently admitted to the nearby community hospital emergency room. Two adults and 1 student had documented hypotension responsive to intravenous fluids. All but 4 patients were released the same evening.

From the 725 students who registered, a sample of 198 students (27%) and their families were randomly chosen for a telephone survey; 22 students and 45 parents with gastrointestinal symptoms were identified. For those eating the box lunch, the attack rate was 27.5% for students and 50.6% for parents. For those not eating the box lunch, the attack rate was 0%. Symptoms included nausea (76%), cramps (71%), diarrhea (67%), vomiting (44%), chills (25%), fever (25%), and collapse (9%). The incubation period in 98% of cases was between 1 and 10 hours; the median was 4½ hours. Those whose symptoms included nausea and vomiting tended to have shorter incubation periods than those with diarrhea. Forty percent of those ill sought medical attention. The median duration of illness was 5 hours for students and 7.5

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TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	34th WEEK ENDING		MEDIAN 1968-1972	CUMULATIVE, FIRST 34 WEEKS		
	August 25, 1973	August 26, 1972		1973	1972	MEDIAN 1968-1972
Aseptic meningitis	182	184	184	2,436	1,926	1,957
Brucellosis	2	7	6	128	120	134
Chickenpox	244	306	– – –	144,499	113,355	– – –
Diphtheria	1	–	6	114	63	106
Encephalitis, primary:						
Arthropod-borne and unspecified	51	38	35	862	615	697
Encephalitis, post-infectious	6	5	6	204	200	274
Hepatitis, serum (Hepatitis B)	160	159	159	5,207	6,002	4,720
Hepatitis, infectious (Hepatitis A)	893	1,119	1,119	32,840	36,020	36,021
Malaria	5	13	33	158	664	1,801
Measles (rubeola)	70	171	171	23,877	26,651	26,651
Meningococcal infections, total	14	7	30	1,009	970	1,807
Civilian	14	7	29	985	932	1,623
Military	–	–	1	24	38	184
Mumps	268	326	504	54,556	55,991	74,482
Rubella (German measles)	82	149	201	25,761	20,389	43,076
Tetanus	5	1	2	58	74	75
Tuberculosis, new active	509	674	– – –	20,612	21,976	– – –
Tularemia	5	5	4	107	91	92
Typhoid fever	15	21	8	460	224	201
Typhus, tick-borne (Rky. Mt. spotted fever)	23	25	15	488	377	306
Venereal Diseases:						
Gonorrhea	17,228	18,544	– – –	527,091	474,002	– – –
Syphilis, primary and secondary	381	532	– – –	16,917	16,020	– – –
Rabies in animals	62	63	63	2,426	2,870	2,393

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Poliomyelitis, total:	3
Botulism:	13	Paralytic:	3
Congenital rubella syndrome:	19	Psittacosis:	15
Leprosy: Calif.-2	85	Rabies in man:	–
Leptospirosis: Tenn.-1, Va.-1	22	Trichinosis:	64
Plague:	1	Typhus, murine:	25

GASTROENTERITIS – Continued

hours for parents. Of the 150 faculty given free tickets to the box lunch, 84 ate the lunch and 47.7% of those became ill.

Food-specific attack rates implicated macaroni salad (Table 1). Chicken could not be excluded as a vehicle of transmission because all but 1 of the individuals ate chicken. No other foods were significantly associated with illness.

The macaroni was cooked and rinsed on July 25 and refrigerated overnight. On July 26, between 10 a.m. and 2 p.m., celery, fresh green peppers, onions, and canned red peppers were hand-sliced, chopped mechanically, and hand-mixed with the macaroni and commercial dressing that did not contain egg. The salad was placed into 30-lb closed plastic containers in a walk-in cooler overnight. At 6:00 a.m. on July 27, it was taken out of storage, and from 6:30 a.m. to 12:20 p.m. individual portions were served into styrofoam boxes, which were transported in large groups to eating areas. The lunches were kept at room temperature during this time.

Examination of portions of macaroni salad from unused trays left at room temperature until 7-8 p.m. revealed $10^4 - 10^5$ coagulase-positive staphylococci per gram and $10^6 - 10^9$ enterococci per gram. The chicken contained small numbers of coagulase-positive staphylococci. The staphylococci isolated from these foods were nontypable on bacteriophage testing.

Twenty-four kitchen workers were interviewed, and culture specimens from anterior nares, back of wrist, and rectum were obtained on August 2. Four workers had nontypable staphylococci isolated from wrists or nares. Antibiotic sensitivity testing of nontypable organisms from 2 workers and the macaroni salad revealed all to be multiply sensitive. One of these workers was directly involved in the preparation and serving of the macaroni salad. The ability of the strains found in food and workers to produce enterotoxin is being tested.

The remaining macaroni salad available for direct enterotoxin assay was culture-negative and gram-strain negative for staphylococci; however, it contained type C staphylococcal enterotoxin.

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Table 1
Attack Rates Among Students and Parents Who Ate and Did Not Eat Macaroni Salad
Johnson City, Tennessee – July 27, 1973

	Ate Macaroni			Did Not Eat Macaroni			
	Ill	Not Ill	Percent Ill	Ill	Not Ill	Percent Ill	
Students	22	30	42.3	0	28	0	$X^2=14.3$ $p<.001$
Parents	42	31	57.6	2	13	13.3	$X^2=8$ $p<.01$

Editorial Note

The source of the inoculum in this outbreak was probably 1 of the 2 food handlers whose nontypable staphylococci demonstrated an antibiogram identical to that in the incriminated food. These combined characteristics are unusual and therefore useful markers for epidemiologic purposes. The presence of staphylococci among foodhandlers is common and unavoidable, and prevention of staphylococcal outbreaks depends primarily upon not allowing food temperatures to remain between 40°F and 140°F for more than 3-4 hours *(1)*. The 6- to 10-hour period during which the implicated macaroni salad was left at room temperature prior to consumption was sufficient to allow rapid growth of enterotoxin-producing staphylococci. The presence of enterotoxin in a culture-negative food specimen again demonstrates the value of enterotoxin extraction in confirming the etiology of foodborne outbreaks.

The frequency of vomiting in this outbreak is lower than that normally encountered in staphylococcal intoxication. This may be related to the type of enterotoxin causing the outbreak; type C enterotoxin is rarely associated with foodborne illness, and the symptom complex it causes has not been sufficiently defined *(2,3)*.

Of interest is the finding of high numbers of enterococci in the incriminated food. The possible role of this organism in modifying the symptom complex is not clear *(4)*.

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DEATH DUE TO TRICHINOSIS – Ohio

On March 11, 1973, a 30-year-old woman in Perry County, Ohio, became ill with fever, chills, malaise, and periorbital edema. She was hospitalized 3 days later. The patient had an 8% eosinophilia, and her serum was positive for trichinosis antibody by the trichinosis bentonite flocculation test. Muscle biopsy demonstrated severe muscle necrosis and phagocytosis with inflammatory myopathy. Non-encysted larvae of *Trichinella spiralis* were also observed. The patient remained in the hospital until her death on April 15.

On approximately March 18, the patient's 13-year-old son developed mild symptoms compatible with trichinosis and was hospitalized. Antibody to *T. spiralis* was demonstrated by the trichinosis bentonite flocculation test.

Investigation revealed that on several occasions between February 15 and March 5, both the patient and her son had

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING AUGUST 25, 1973 AND AUGUST 26, 1972 (34th WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post Infectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
	1973	1973	1973	1973	Cum. 1973	1973	1972	1973	1973	1973	1972
UNITED STATES	182	2	244	1	114	51	38	6	160	893	1,119
NEW ENGLAND	22	–	41	–	3	1	4	–	3	40	89
Maine*	–	–	2	–	–	–	–	–	–	2	10
New Hampshire	2	–	–	–	–	1	–	–	1	3	13
Vermont	–	–	1	–	–	–	–	–	–	3	12
Massachusetts	4	–	10	–	1	–	2	–	–	23	31
Rhode Island	13	–	17	–	2	–	–	–	–	–	11
Connecticut	3	–	11	–	–	–	2	–	2	9	12
MIDDLE ATLANTIC	38	–	4	–	–	6	8	–	43	100	183
Upstate New York	2	–	3	–	–	4	–	–	7	33	34
New York City	11	–	–	–	–	–	–	–	7	25	39
New Jersey	15	–	NN	–	–	–	4	–	18	19	76
Pennsylvania	10	–	1	–	–	2	4	–	11	23	34
EAST NORTH CENTRAL	55	–	67	–	–	28	9	–	21	203	158
Ohio	10	–	9	–	–	16	4	–	4	41	42
Indiana	4	–	1	–	–	1	–	–	–	24	12
Illinois	13	–	–	–	–	3	1	–	10	78	42
Michigan	28	–	4	–	–	5	1	–	7	51	60
Wisconsin	–	–	53	–	–	3	3	–	–	9	2
WEST NORTH CENTRAL	6	–	5	–	7	3	1	1	5	35	36
Minnesota	2	–	–	–	–	–	–	1	2	3	7
Iowa	–	–	4	–	–	–	1	–	2	3	5
Missouri	2	–	–	–	–	1	–	–	1	10	10
North Dakota	–	–	1	–	–	–	–	–	–	–	3
South Dakota	–	–	–	–	7	–	–	–	–	–	2
Nebraska	–	–	–	–	–	–	–	–	–	1	1
Kansas	2	–	–	–	–	2	–	–	–	18	8
SOUTH ATLANTIC	27	–	74	–	–	4	7	–	32	147	131
Delaware	–	–	1	–	–	–	–	–	–	1	3
Maryland	5	–	2	–	–	1	1	–	5	11	16
District of Columbia	6	–	1	–	–	–	–	–	–	–	–
Virginia	7	–	–	–	–	–	1	–	3	11	9
West Virginia	–	–	58	–	–	1	–	–	–	4	6
North Carolina	–	–	NN	–	–	2	5	–	5	28	29
South Carolina	–	–	12	–	–	–	–	–	–	17	9
Georgia	–	–	–	–	–	–	–	–	–	4	22
Florida	9	–	–	–	–	–	–	–	19	71	37
EAST SOUTH CENTRAL	8	–	1	–	–	–	1	–	1	60	62
Kentucky	1	–	–	–	–	–	–	–	–	14	12
Tennessee	5	–	NN	–	–	–	1	–	1	41	39
Alabama	2	–	–	–	–	–	–	–	–	5	5
Mississippi	–	–	1	–	–	–	–	–	–	–	6
WEST SOUTH CENTRAL	5	2	4	–	11	2	1	–	1	26	157
Arkansas*	–	–	3	–	–	–	–	–	–	6	36
Louisiana	2	2	NN	–	–	–	–	–	1	20	11
Oklahoma*	3	–	1	–	–	2	1	–	–	–	19
Texas	---	---	---	---	11	---	–	---	---	---	91
MOUNTAIN	14	–	14	–	14	–	2	–	1	42	74
Montana	11	–	2	–	–	–	–	–	–	5	3
Idaho	3	–	–	–	–	–	–	–	–	–	9
Wyoming	–	–	–	–	–	–	–	–	–	–	2
Colorado	–	–	2	–	–	–	–	–	–	23	17
New Mexico	–	–	8	–	6	–	2	–	–	3	21
Arizona*	–	–	–	–	8	–	–	–	–	1	12
Utah	–	–	2	–	–	–	–	–	1	2	8
Nevada	–	–	–	–	–	–	–	–	–	8	2
PACIFIC	7	–	34	1	79	7	5	5	53	240	229
Washington	7	–	5	1	71	–	–	–	2	27	15
Oregon	–	–	–	–	3	–	–	1	2	19	42
California	–	–	–	–	3	7	5	4	49	154	152
Alaska	–	–	2	–	2	–	–	–	–	38	11
Hawaii	–	–	27	–	–	–	–	–	–	2	9
Guam	–	–	–	–	–	–	2	–	–	–	–
Puerto Rico	–	–	9	–	–	–	–	–	–	15	13
Virgin Islands	–	–	10	–	–	–	–	–	–	–	–

*Delayed reports: Aseptic meningitis: Ark. 2
Chickenpox: Me. 2
Encephalitis, primary: Ark. 2, Okla. delete 3
Hepatitis B: Ariz. 3
Hepatitis A: Me. 5, Ark. 6, Ariz. 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING AUGUST 25, 1973 AND AUGUST 26, 1972 (34th WEEK) – Continued

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1973	Cum. 1973	1973	Cumulative 1973	Cumulative 1972	1973	Cumulative 1973	Cumulative 1972	1973	Cum. 1973	1973	Cum. 1973
UNITED STATES	5	158	70	23,877	26,651	14	1,009	970	268	54,556	82	25,761
NEW ENGLAND	–	12	5	7,362	3,084	–	46	39	23	2,791	5	3,597
Maine*	–	–	–	64	243	–	1	3	1	318	–	68
New Hampshire	–	–	–	857	229	–	6	3	–	186	–	355
Vermont	–	2	–	118	125	–	3	–	3	244	–	44
Massachusetts	–	6	2	3,920	683	–	12	18	5	815	5	2,039
Rhode Island	–	–	–	603	519	–	3	10	3	328	–	212
Connecticut	–	4	3	1,800	1,285	–	21	5	11	900	–	879
MIDDLE ATLANTIC	2	24	17	2,419	975	3	136	119	38	7,136	10	4,163
Upstate New York	–	13	3	792	124	2	48	32	NN	NN	3	417
New York City	1	2	5	884	311	–	27	36	27	4,473	4	458
New Jersey	–	4	9	398	484	–	32	24	6	1,482	2	2,999
Pennsylvania	1	5	–	345	56	1	29	27	5	1,181	1	289
EAST NORTH CENTRAL	–	21	33	8,420	10,950	1	126	141	42	14,080	27	5,886
Ohio*	–	4	1	279	244	–	55	56	5	2,662	1	682
Indiana	–	3	1	620	1,232	–	4	11	5	1,168	1	929
Illinois	–	11	14	2,037	4,076	–	24	30	6	2,381	2	936
Michigan	–	3	9	4,345	1,973	1	38	38	3	3,886	5	1,815
Wisconsin	–	–	8	1,139	3,425	–	5	6	23	3,983	18	1,524
WEST NORTH CENTRAL	–	7	–	436	937	1	79	68	6	4,586	1	1,202
Minnesota	–	1	–	19	19	–	7	19	–	79	–	221
Iowa	–	1	–	277	652	1	19	2	1	2,792	–	187
Missouri	–	1	–	49	163	–	32	20	2	668	1	261
North Dakota	–	1	–	58	52	–	3	–	–	66	–	276
South Dakota	–	–	–	–	6	–	4	2	1	18	–	23
Nebraska	–	1	–	6	18	–	7	9	2	127	–	139
Kansas	–	2	–	27	27	–	7	16	–	836	–	95
SOUTH ATLANTIC	–	23	3	1,190	2,121	4	169	220	21	6,419	5	2,079
Delaware	–	–	–	8	48	–	–	1	–	264	–	13
Maryland	–	3	–	12	15	1	23	33	3	625	–	10
District of Columbia	–	1	–	5	2	–	4	9	2	104	–	3
Virginia*	–	5	–	414	60	1	31	49	–	680	–	620
West Virginia	–	–	2	195	270	–	2	7	5	2,218	1	284
North Carolina	–	6	–	4	33	–	36	27	NN	NN	–	201
South Carolina	–	1	–	58	214	1	12	20	2	352	–	84
Georgia	–	3	–	149	166	–	21	15	–	29	1	12
Florida	–	4	1	345	1,313	1	40	59	9	2,147	3	852
EAST SOUTH CENTRAL	–	6	1	595	1,035	–	91	77	52	4,458	10	1,290
Kentucky	–	1	1	367	521	–	32	25	23	1,307	–	389
Tennessee	–	–	–	165	191	–	37	28	20	2,052	2	513
Alabama	–	5	–	9	141	–	15	16	8	642	–	186
Mississippi	–	–	–	54	182	–	7	8	1	457	8	202
WEST SOUTH CENTRAL	–	9	1	646	1,447	2	158	122	5	3,613	–	1,431
Arkansas	–	–	–	69	13	–	13	9	1	352	–	112
Louisiana	–	2	–	84	82	1	34	35	–	77	–	99
Oklahoma	–	1	1	53	10	1	28	6	4	429	–	177
Texas	---	6	---	440	1,342	---	83	72	---	2,755	---	1,043
MOUNTAIN	–	9	2	590	1,803	–	31	19	11	2,424	4	2,364
Montana	–	1	–	16	15	–	6	3	4	229	–	502
Idaho	–	–	–	252	71	–	4	5	–	110	–	35
Wyoming	–	–	–	80	51	–	–	1	–	420	–	6
Colorado	–	2	2	105	520	–	11	4	5	433	–	1,541
New Mexico	–	2	–	118	119	–	3	2	2	958	3	191
Arizona	–	4	–	16	872	–	3	1	–	140	–	17
Utah	–	–	–	2	155	–	2	2	–	126	1	69
Nevada	–	–	–	1	–	–	2	1	–	8	–	3
PACIFIC	3	47	8	2,219	4,299	3	173	165	70	9,049	20	3,749
Washington	–	3	–	1,008	973	–	17	15	3	1,409	7	659
Oregon	1	3	–	454	130	–	12	13	10	1,675	1	781
California	2	38	8	673	3,090	3	138	128	43	5,024	12	2,274
Alaska	–	2	–	65	11	–	6	6	8	687	–	9
Hawaii	–	1	–	19	95	–	–	3	6	254	–	26
Guam	–	–	–	26	10	–	–	11	–	17	–	8
Puerto Rico	–	–	5	1,762	624	–	8	4	10	670	–	26
Virgin Islands	–	–	1	1	2	–	–	2	1	22	–	2

*Delayed reports: Meningococcal infections: Ohio delete 1
Mumps: Me. 7
Rubella: Va. delete 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING AUGUST 25, 1973 AND AUGUST 26, 1972 (34th WEEK) – Continued

AREA	TETANUS	TUBERCULOSIS (New Active)		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
									GONORRHEA	SYPHILIS (Pri. & Sec.)		
	Cumulative 1973	1973	Cum. 1973	Cumulative 1973	1973	Cum. 1973	1973	Cum. 1973	1973	1973	1973	Cum. 1973
UNITED STATES	58	509	20,612	107	15	460	23	488	17,228	381	62	2,426
NEW ENGLAND	2	31	740	–	1	9	–	1	261	4	1	99
Maine	–	–	59	–	–	–	–	–	33	–	–	55
New Hampshire *	–	1	42	–	–	–	–	–	4	–	1	35
Vermont	–	2	22	–	–	–	–	–	18	–	–	3
Massachusetts *	–	13	389	–	1	9	–	1	–	–	–	5
Rhode Island	1	5	57	–	–	–	–	–	33	–	–	–
Connecticut	1	10	171	–	–	–	–	–	173	4	–	1
MIDDLE ATLANTIC	7	110	4,016	–	1	43	1	28	2,698	63	1	33
Upstate New York	1	16	714	–	–	6	–	13	387	1	–	14
New York City	3	26	1,510	–	–	15	1	4	1,062	38	–	–
New Jersey	2	38	706	–	1	13	–	5	365	17	–	–
Pennsylvania	1	30	1,086	–*	–	9	–	6	884	7	1	19
EAST NORTH CENTRAL	10	86	3,133	3	–	25	2	19	2,056	25	13	239
Ohio *	3	25	927	–	–	10	1	14	591	5	–	29
Indiana	1	13	412	–	–	–	–	–	293	6	2	50
Illinois	3	26	937	1	–	6	1	5	220	8	3	64
Michigan	1	22	780	2	–	7	–	–	717	3	1	5
Wisconsin *	2	–	77	–	–	2	–	–	235	3	7	91
WEST NORTH CENTRAL	5	18	834	10	3	21	–	16	1,259	8	22	776
Minnesota	–	–	103	–	–	4	–	–	284	3	9	275
Iowa	–	–	89	–	–	–	–	7	353	1	4	156
Missouri	4	10	385	10	3	12	–	7	365	3	4	74
North Dakota	1	1	29	–	–	–	–	–	15	–	4	127
South Dakota	–	2	60	–	–	1	–	–	38	–	–	77
Nebraska	–	3	55	–	–	1	–	2	86	1	–	3
Kansas	–	2	113	–	–	3	–	–	118	–	1	64
SOUTH ATLANTIC	12	98	4,097	9	1	232	16	247	4,560	137	7	201
Delaware	–	2	55	–	–	–	–	7	49	1	–	3
Maryland	–	15	441	–	–	6	–	10	406	3	1	11
District of Columbia	–	6	186	–	–	–	–	–	442	13	–	–
Virginia	2	10	539	3	–	3	2	51	444	60	1	59
West Virginia	–	11	195	–	–	2	–	3	41	1	1	19
North Carolina	–	20	668	1	1	5	9	112	541	4	–	1
South Carolina	1	1	342	–	–	4	2	28	407	35	1	5
Georgia	2	12	678	3	–	1	2	35	1,134	20	3	69
Florida	7	21	993	2	–	211	1	1	1,096	---	–	34
EAST SOUTH CENTRAL	7	44	1,864	8	8	28	1	73	1,872	23	2	352
Kentucky	1	12	439	1	–	3	–	–	157	4	1	190
Tennessee	4	16	579	6	–	9	1	36	697	13	–	122
Alabama	2	16	504	–	8	10	–	10	670	3	1	39
Mississippi	–	–	342	1	–	6	–	27	348	3	–	1
WEST SOUTH CENTRAL	8	15	2,072	73	–	20	2	88	1,180	10	2	438
Arkansas *	–	2	249	51	–	3	–	15	614	–	–	91
Louisiana *	3	8	338	–	–	6	–	–	339	9	–	34
Oklahoma	3	5	181	17	–	2	2	66	227	1	2	136
Texas	2	---	1,304	5	---	9	---	7	---	---	---	177
MOUNTAIN	–	21	671	3	–	8	–	8	694	21	–	24
Montana	–	2	33	–	–	–	–	1	55	–	–	–
Idaho	–	–	26	–	–	–	–	2	37	–	–	–
Wyoming	–	–	18	–	–	1	–	1	2	–	–	–
Colorado	–	–	120	–	–	1	–	1	232	4	–	–
New Mexico	–	6	146	1	–	2	–	3	130	7	–	4
Arizona *	–	13	259	–	–	4	–	–	154	3	–	20
Utah	–	–	27	2	–	–	–	–	34	–	–	–
Nevada	–	–	42	–	–	–	–	–	50	7	–	–
PACIFIC	7	86	3,185	1	1	74	1	8	2,648	90	14	264
Washington	2	2	253	–	–	6	1	5	247	4	1	5
Oregon	1	–	167	–	–	2	–	2	256	1	1	7
California	4	72	2,505	1	1	64	–	1	2,001	77	12	244
Alaska	–	–	67	–	–	1	–	–	82	7	–	8
Hawaii	–	12	193	–	–	1	–	–	62	1	–	–
Guam	–	–	28	–	–	–	–	–	–	–	–	–
Puerto Rico	4	6	311	–	–	7	–	–	44	11	1	36
Virgin Islands	–	–	1	–	–	–	–	–	12	–	–	–

*Delayed reports: TB: Mass. 16, Ohio delete 2, Ariz. 8
RMSF: Ark. 3
Gonorrhea: N. H. 3, Wis. 65, La. delete 1, Ariz. 188
Syphilis: Ariz. 1
Rabies: Ariz. 1

Week No. 34

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING AUGUST 25, 1973

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes			Pneumonia and Influenza	Area	All Causes			Pneumonia and Influenza
	All Ages	65 years and over	Under 1 year	All Ages		All Ages	65 years and over	Under 1 year	All Ages
NEW ENGLAND	616	356	24	32	SOUTH ATLANTIC	1,181	656	48	40
Boston, Mass.	188	97	8	12	Atlanta, Ga.	144	67	10	6
Bridgeport, Conn.	45	28	1	2	Baltimore, Md.	244	130	2	4
Cambridge, Mass.	19	11	3	1	Charlotte, N. C.	55	27	4	–
Fall River, Mass.	26	19	–	1	Jacksonville, Fla.	99	52	4	1
Hartford, Conn.	46	24	3	1	Miami, Fla.	106	73	5	1
Lowell, Mass.	29	16	–	2	Norfolk, Va.	49	21	2	–
Lynn, Mass.	14	11	–	1	Richmond, Va.	81	45	5	6
New Bedford, Mass.	23	16	–	2	Savannah, Ga.	25	12	–	1
New Haven, Conn.	58	34	2	1	St. Petersburg, Fla.	90	75	1	7
Providence, R. I.	46	26	1	6	Tampa, Fla.	77	38	6	7
Somerville, Mass.	4	4	–	–	Washington, D. C.	150	84	8	5
Springfield, Mass.	35	19	2	2	Wilmington, Del.	61	32	1	2
Waterbury, Conn.	22	13	2	–					
Worcester, Mass.	61	38	2	1	EAST SOUTH CENTRAL	653	357	28	23
					Birmingham, Ala.	93	50	–	1
MIDDLE ATLANTIC	3,031	1,764	105	125	Chattanooga, Tenn.	46	27	2	1
Albany, N. Y.	62	33	3	1	Knoxville, Tenn.	48	35	1	–
Allentown, Pa.	32	21	–	2	Louisville, Ky.	120	64	4	11
Buffalo, N. Y.	127	73	7	11	Memphis, Tenn.	150	83	9	1
Camden, N. J.	46	23	–	5	Mobile, Ala.	52	23	6	3
Elizabeth, N. J.	20	8	–	1	Montgomery, Ala.	41	16	1	1
Erie, Pa.	23	19	1	2	Nashville, Tenn.	103	59	5	5
Jersey City, N. J.	35	21	2	2					
Newark, N. J.	72	24	14	2	WEST SOUTH CENTRAL	1,273	692	73	46
New York City, N. Y.†	1,543	928	33	59	Austin, Tex.	36	18	2	1
Paterson, N. J.	38	18	5	–	Baton Rouge, La.	74	49	2	6
Philadelphia, Pa.	499	281	24	20	Corpus Christi, Tex.	28	14	3	–
Pittsburgh, Pa.	175	87	7	10	Dallas, Tex.	170	76	13	–
Reading, Pa.	40	26	2	2	El Paso, Tex.	52	23	6	3
Rochester, N. Y.	101	69	2	3	Fort Worth, Tex.	85	53	5	6
Schenectady, N. Y.	31	20	1	–	Houston, Tex.	243	115	12	3
Scranton, Pa.	32	22	1	–	Little Rock, Ark.	66	46	2	8
Syracuse, N. Y.	76	42	2	–	New Orleans, La.	183	103	4	6
Trenton, N. J.	33	15	1	3	Oklahoma City, Okla. *	89	52	5	2
Utica, N. Y.	15	13	–	1	San Antonio, Tex.	149	88	11	2
Yonkers, N. Y.	31	21	–	1	Shreveport, La.	46	23	3	4
					Tulsa, Okla.	52	32	5	5
EAST NORTH CENTRAL	2,331	1,310	97	55					
Akron, Ohio	65	35	4	–	MOUNTAIN	536	320	16	19
Canton, Ohio	39	23	1	–	Albuquerque, N. Mex.	47	28	1	5
Chicago, Ill.	598	303	27	9	Colorado Springs, Colo.	34	23	1	1
Cincinnati, Ohio	150	96	9	1	Denver, Colo.	125	77	1	8
Cleveland, Ohio	205	106	8	5	Las Vegas, Nev.	34	15	1	–
Columbus, Ohio	89	51	7	–	Ogden, Utah	21	14	–	2
Dayton, Ohio	89	48	5	4	Phoenix, Ariz.	121	67	4	–
Detroit, Mich.	309	164	5	4	Pueblo, Colo.	28	19	–	2
Evansville, Ind.	32	20	3	4	Salt Lake City, Utah	54	36	3	1
Fort Wayne, Ind.	37	22	1	3	Tucson, Ariz.	72	41	5	–
Gary, Ind.	46	20	4	4					
Grand Rapids, Mich.	58	38	3	3	PACIFIC	1,667	1,038	55	32
Indianapolis, Ind.	158	86	7	3	Berkeley, Calif.	20	11	–	–
Madison, Wis.	16	10	2	3	Fresno, Calif.	66	37	5	1
Milwaukee, Wis.	134	103	2	2	Glendale, Calif.	26	20	–	–
Peoria, Ill.	46	23	2	–	Honolulu, Hawaii	51	30	3	2
Rockford, Ill.	46	26	1	4	Long Beach, Calif.	87	56	3	3
South Bend, Ind.	45	27	1	2	Los Angeles, Calif.	558	357	15	7
Toledo, Ohio	106	73	1	3	Oakland, Calif.	80	56	3	–
Youngstown, Ohio	63	36	4	1	Pasadena, Calif.	38	28	1	–
					Portland, Oreg.	134	91	4	5
WEST NORTH CENTRAL	720	448	30	19	Sacramento, Calif.	52	32	–	–
Des Moines, Iowa	49	35	–	–	San Diego, Calif.	112	63	7	1
Duluth, Minn.	23	21	–	3	San Francisco, Calif.	172	99	7	5
Kansas City, Kans.	29	10	1	1	San Jose, Calif.	52	34	–	1
Kansas City, Mo.	120	63	5	2	Seattle, Wash.	137	76	4	2
Lincoln, Nebr.	38	28	1	–	Spokane, Wash.	41	23	2	5
Minneapolis, Minn.	68	48	5	–	Tacoma, Wash.	41	25	1	–
Omaha, Nebr.	85	55	4	1					
St. Louis, Mo.	201	123	10	4	Total	12,008	6,941	476	391
St. Paul, Minn.	62	41	2	3	Expected Number	12,084	6,824	548	392
Wichita, Kans.	45	24	2	5	Cumulative Total (includes reported corrections for previous weeks)	441,581	259,823	16,434	18,104

†Delayed report for week ending August 18, 1973
*Estimate based on average percent of divisional total

TRICHINOSIS – Continued

eaten pork chops which had been cooked for a short time and were still partially frozen. Samples of pork chops purchased at the same time as those eaten by the patients were obtained from the family's freezer and were found to be positive for *T. spiralis* larvae. Further investigation of the retail store from which the pork was bought and the meat packing plant could not determine the exact source of the pork. It may have originated from any of several lots of swine purchased between February 12 and 15.

(Reported by Taylor Kramer, Public Health Representative, George Baer, D.V.M., Veterinary Epidemiologist, Jack Russell, D.V.M., State Public Health Veterinarian, and John H. Ackerman, M.D., Chief, Division of Communicable Diseases, Ohio State Department of Health.)

SURVEILLANCE SUMMARY
ASEPTIC MENINGITIS – United States, 1971

In 1971, a total of 4,073 cases of aseptic meningitis were reported to CDC on annual summary forms from 44 of 52 reporting areas in the United States; 30 were fatal.* In 1970, there were 5,272 reported cases and 44 deaths. A diagnostic etiology was given for 739 cases in 1971; 611 were associated with enteroviruses, 90 with mumps, 12 with herpes simplex, 2 with western equine encephalomyelitis, 2 with St. Louis encephalitis, and 16 with other known agents. Virologic data on 6 cases indicated more than 1 possible etiology. No etiology was shown for the remaining 3,334 cases. The distribution of cases by etiologic category and month of onset is shown in Figure 1.

Of 3,022 cases for which both age and sex were reported, 1,529 (50.6%) were in males under 20 years of age. The seasonal pattern of cases showed a late summer peak. Attack rates by state are shown in Figure 2. The dissimilar attack rates from state to state for a given year reflect variations in incidence, reporting practice, and emphasis in epidemiologic and laboratory investigation. Therefore, these data provide

*The total number of reported cases of aseptic meningitis for 1971 based on weekly telegraphic reports was 5,176.

Figure 1
CASES OF ASEPTIC MENINGITIS* IN 44 REPORTING AREAS, BY MONTH OF ONSET AND ETIOLOGIC GROUP – 1971

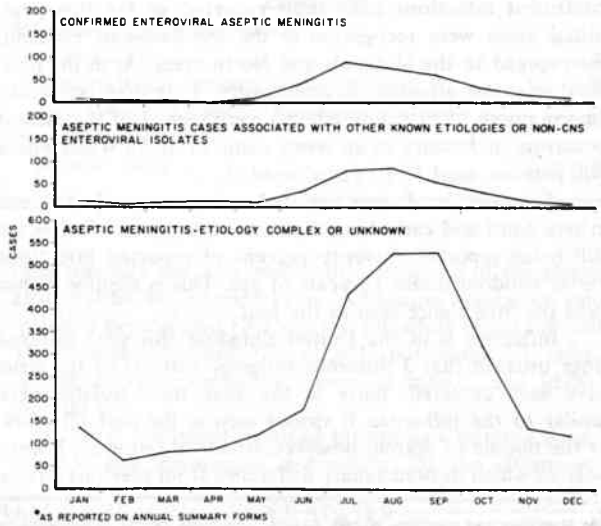
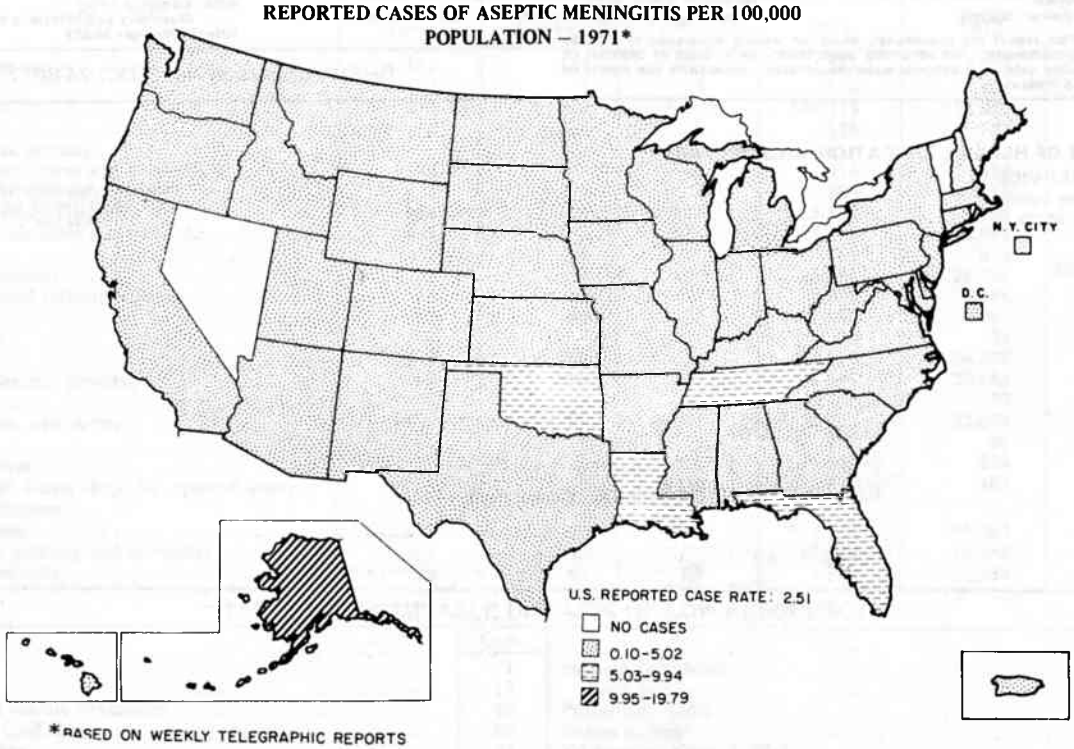


Figure 2
REPORTED CASES OF ASEPTIC MENINGITIS PER 100,000 POPULATION – 1971*



ASEPTIC MENINGITIS – Continued

only a general overview of the nationwide distribution and incidence of aseptic meningitis.

(Reported by the Arbovirology Section, and the Developmental Virology Section, Virology Branch, Bureau of Laboratories, and the Neurotropic Diseases Unit, Viral Diseases Branch, Bureau of Epidemiology, CDC.)

A copy of the original report from which these data were derived is available on request from
Center for Disease Control
Attn: Neurotropic Diseases Unit, Viral Diseases Branch
Bureau of Epidemiology
Atlanta, Georgia 30333

EPIDEMIOLOGIC NOTES AND REPORTS

INFLUENZA B – United Kingdom, 1973

In January 1973, a small but widespread epidemic of influenza B developed in the United Kingdom; a total of 206 confirmed infections have been reported so far this year. Initial cases were recognized in the southwest of England, then spread to the Midlands and North areas. As in the past, children were affected predominantly. Extensive outbreaks among pupils at boarding schools were seen, 1 of the earliest occurring in January in an Army camp in North Wales where 300 persons, aged 15-17 years, were ill.

The number of cases reported each week reached a peak in late April and early May, but a small number of cases are still being reported. Seventy percent of reported infections are in children under 15 years of age. This is slightly higher than the 50% figure seen in the past.

Influenza B in the United Kingdom this year differed from usual in that 3 different antigenic variants of the virus have been detected. Early in the year, most isolates were similar to the influenza B viruses seen in the past 10 years. In the middle of March, however, strains of influenza B were isolated which showed a sharp difference from previous strains and a partial similarity to B/Hong Kong/5/72 strains isolated during the winter epidemic in Hong Kong last year. These strains have been termed "intermediate". During the following 2 months more intermediate isolates were found; however, in late May, strains showing even further antigenic drift indistinguishable from B/Hong Kong/5/72 were isolated. In June, the "intermediate" and older strains seemed to disappear. Severe influenza epidemics in the United Kingdom are usually attributed to the influenza A virus, but a major B epidemic is sometimes encountered. The last epidemic caused mainly by the influenza B virus in the United Kingdom was in 1962. Studies in progress suggest a low prevalence of antibody to the new influenza B virus in the population, and the possibility clearly exists that influenza B/Hong Kong/5/72 virus may cause problems in the coming winter.

(From notes based on reports to the Public Health Laboratory Service from Public Health and Hospital Laboratories in the United Kingdom and Republic of Ireland, published in the British Medical Journal, *August 4, 1973.)*

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Managing Editor, MMWR — Deborah L. Jones, B.S.

The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting outbreaks or case investigations of current interest to health officials.

Address all correspondence to: Center for Disease Control
Attn: Editor
Morbidity and Mortality Weekly Report
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