

Morbidity and Mortality



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE
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EPIDEMIOLOGIC NOTES AND REPORTS
A COMMON-SOURCE OUTBREAK OF
SALMONELLA NEWPORT - Louisiana

In August 1975, medical officers at an Air Force Base (AFB) and an Army Post (AP) located 50 miles apart in west-central Louisiana concurrently reported an increase in *Salmonella newport* isolations from children with intestinal illness. The 2 installations had active duty and dependent populations of approximately 7,700 and 35,200, respectively. The possibility of a common-source outbreak prompted a coordinated investigation by Army, Air Force and CDC epidemiological teams.

Twenty-five persons from the AP and 18 from the AFB with cases of intestinal illness were studied. Most persons had a mild clinical course and only 2 required brief hospitaliza-

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tion. The dates of onset suggested a common-source outbreak (Figure 1). Most of the persons with onset during the first 2 weeks of the outbreak were infants 6 months to 2 years of age. All 43 military cases were from families with children; there were no cases in the military trainee population of 12,000 or in unmarried personnel at either base.

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

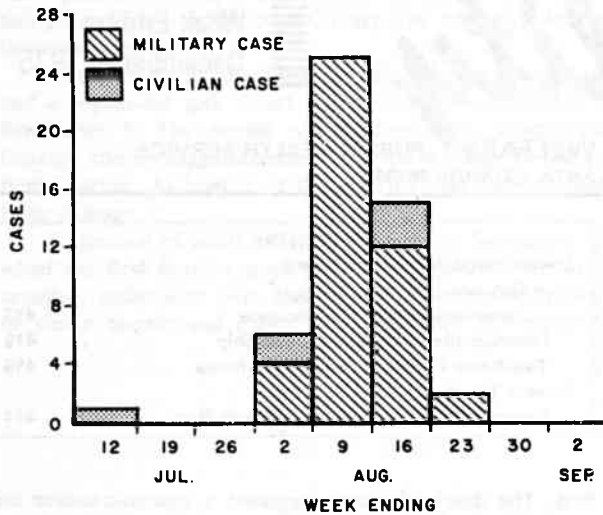
DISEASE	WEEK ENDING		MEDIAN 1970-1974	CUMULATIVE, FIRST WEEKS		MEDIAN 1970-1974
	December 6, 1975	December 7, 1974		1975	1974	
Aseptic meningitis	81	63	63	3,891	3,027	4,502
Brucellosis	2	6	4	250	175	175
Chickenpox	2,729	2,519	---	132,652	113,928	---
Diphtheria	3	2	3	280	227	185
Encephalitis	Primary	34	30	2,440	1,031	1,447
	Post-Infectious	5	6	286	240	262
Hepatitis, Viral	Type B	267	209	11,088	9,365	8,314
	Type A	618	666	32,695	39,214	51,707
	Type unspecified	194	114	7,719	7,726	---
Malaria	9	7	7	398	252	797
Measles (rubeola)	186	233	536	23,173	21,522	30,270
Meningococcal infections, total	26	19	35	1,343	1,271	1,289
Civilian	26	19	35	1,315	1,242	1,269
Military	---	---	1	28	29	48
Mumps	926	1,467	1,677	54,952	53,244	67,225
Pertussis	17	30	---	1,473	1,638	---
Rubella (German measles)	112	129	260	15,886	11,501	27,483
Tetanus	1	4	3	93	91	110
Tuberculosis	698	564	---	31,258	28,641	---
Tularemia	3	---	4	106	133	149
Typhoid fever	21	10	8	344	404	400
Typhus, tick-borne (Rky. Mt. spotted fever)	2	4	1	812	761	519
Venereal Diseases:						
Gonorrhea (Civilian)	19,436	18,269	---	937,510	844,134	---
Gonorrhea (Military)	495	584	---	27,226	28,189	---
Syphilis, primary and secondary (Civilian)	380	493	---	23,906	23,908	---
Syphilis, primary and secondary (Military)	4	10	---	331	450	---
Rabies in animals	23	54	53	2,246	2,762	3,191

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Poliomyelitis, total:	7
Botulism:	15	Paralytic:	7
Congenital rubella syndrome:	26	Psittacosis: Calif. 1	48
Leprosy: Texas 1, Calif. 1	142	Rabies in man:	2
Leptospirosis: La. 2	61	Trichinosis: Mass. 2, N.J. 1, Minn. 1	112
Plague:	15	Typhus, murine: Texas 1	32

SALMONELLA NEWPORT – Continued

Figure 1
CASES OF *SALMONELLA NEWPORT* BY WEEK OF ONSET,
MILITARY AND CIVILIAN COMMUNITIES, LOUISIANA, 1975



In the civilian communities adjacent to the bases, a review of emergency room, hospital, and pharmacy records and a survey of physicians revealed no recent increase in cases of intestinal illness generally. However, a review of hospital bacteriology records revealed 6 *S. newport* isolates from persons ill during July and August in the community adjacent to the AFB.

The 49 ill persons were not clustered in particular housing or recreational areas or along a particular water or sanitary system. Since the commissaries at the 2 installations purchased food from the same suppliers, a telephone food preference survey of the ill persons was conducted. Anecdotal information obtained during the investigation suggested that milk sold at the commissaries might have been the vehicle of transmission. The distribution of this milk on and off the military bases paralleled the geographic distribution of cases. The unaffected military trainees who ate at the base mess halls, did not drink this milk. To test the hypothesis that

milk was the vehicle, the military cases and their matched controls were interviewed by telephone. Similar interviews were conducted with the 6 civilian cases and 2 systematically selected age- and sex-matched neighborhood controls for each case. In both the military and civilian interviews, the consumption of pasteurized milk retained in 1-gallon containers was strongly associated with illness ($p < .01$, by chi square).

Three 1-gallon containers of milk which had been processed by the dairy in late July were located from 1 commissary; laboratory analyses of this milk were negative for salmonella. A review of records of routine bacteriological tests of this dairy's products for May-August 1975 did not reveal high plate counts of bacteria, high coliform counts, or abnormal phosphatase levels. Inspection of the dairy by Food and Drug Administration (FDA) and by state authorities did not reveal any problems with milk handling, storage, pasteurization, or bottling. Eight of the 9 dairy employees were cultured; none had salmonella in their stools.

Inspection by FDA and state authorities of the plant where the plastic containers were manufactured did not reveal improper procedures or evidence of contamination of the containers. Investigation by local milk sanitarians of milk producers supplying the dairy did not reveal a source of salmonella contamination.

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Editorial Note

The epidemiologic evidence suggested that pasteurized milk was the vehicle of transmission. Pasteurized milk is an exceedingly rare cause of foodborne disease outbreaks. Since systematic foodborne disease surveillance began in 1966, pasteurized milk has been suspected as the vehicle of only 1 other outbreak; the etiology of that outbreak was *Shigella flexneri*-2 (MMWR, Vol. 15, No. 51).

CURRENT TRENDS

CONTINUING DENGUE ACTIVITY – Puerto Rico

Following the 1969 epidemic in Puerto Rico caused by type 2 dengue virus, endemic transmission persisted in the southwest part of the island until September 1975 when cases of dengue-2 infection were documented in the San Juan metropolitan area. The number of dengue cases in the metropolitan area continued to increase during October and November, and cases were reported from scattered parts of the island in addition to the southwest (MMWR, Vol. 24, Nos. 43 and 45). The increase in dengue activity was believed to be related in part to the heavy rainfall during and following tropical storm Eloise, which affected Puerto Rico on September 16, 1975; subsequently, the Federal Disaster Assistance Administration (FDAA) made funds available to Puerto Rico for emergency mosquito control activities.

Over 500 suspect cases of dengue now have been reported, and 37 of these have been confirmed serologically or by virus isolation. The 5 virus isolates identified during

this period are all dengue-2 serotype. Of the 78 municipalities in Puerto Rico, 30 have reported dengue-like illness since the first of October, and laboratory confirmation has been obtained from cases in 6 of these municipalities.

Among the over 500 suspect cases, were 2 cases clinically consistent with dengue shock syndrome (DSS) and 1 case compatible with dengue hemorrhagic fever (DHF). A dengue etiology has been demonstrated serologically by hemagglutination inhibition and complement fixation tests for the suspected DHF case and laboratory studies are in progress for the other 2. The case of DHF is the first to be documented in Puerto Rico.

In view of the widespread presence of *Aedes aegypti* on the island, the concentration of cases in the San Juan metropolitan area, and the possibility of continuing cases, mosquito control activities conducted by the Puerto Rico Department

(Continued on page 419)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING DECEMBER 6, 1975 AND DECEMBER 7, 1974 (49th WEEK) - Continued

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1975	1974	1975	1975	1975	1975		
UNITED STATES	81	2	2,729	3	280	34	30	5	267	618	194	9	398
NEW ENGLAND	1	-	279	-	-	-	1	-	3	27	21	1	24
Maine *	-	-	1	-	-	-	-	-	-	3	1	-	2
New Hampshire *	-	-	45	-	-	-	-	-	-	1	-	-	1
Vermont	-	-	14	-	-	-	-	-	-	2	1	-	3
Massachusetts	1	-	129	-	-	-	-	-	4	18	-	-	9
Rhode Island	-	-	65	-	-	-	-	-	1	5	-	-	2
Connecticut	-	-	25	-	-	-	1	-	2	12	1	1	7
MIDDLE ATLANTIC	15	-	51	-	-	2	12	1	35	43	6	-	94
Upstate New York	5	-	28	-	-	1	2	-	16	16	2	-	9
New York City	3	-	20	-	-	-	1	-	8	9	-	-	29
New Jersey *	5	-	NN	-	-	-	4	-	NA	NA	NA	-	13
Pennsylvania	2	-	3	-	-	1	5	1	11	18	4	-	43
EAST NORTH CENTRAL	8	-	1,334	-	5	14	3	2	44	97	36	-	15
Ohio *	3	-	31	-	-	10	1	1	30	37	-	-	4
Indiana	-	-	119	-	-	-	1	-	1	-	17	-	-
Illinois	1	-	106	-	4	-	1	1	3	16	4	-	5
Michigan	2	-	767	-	1	4	-	-	8	39	15	-	6
Wisconsin	2	-	311	-	-	-	-	-	2	5	-	-	-
WEST NORTH CENTRAL	9	1	505	-	8	6	1	2	25	43	5	-	16
Minnesota	1	-	17	-	-	1	-	1	19	22	-	-	6
Iowa	-	1	195	-	-	-	-	1	-	9	-	-	-
Missouri *	4	-	1	-	1	5	1	-	2	6	1	-	7
North Dakota	-	-	3	-	6	-	-	-	-	-	-	-	1
South Dakota	-	-	-	-	-	-	-	-	-	-	-	-	-
Nebraska	-	-	22	-	1	-	-	-	-	1	1	-	2
Kansas	4	-	267	-	-	-	-	-	4	5	3	-	-
SOUTH ATLANTIC	11	-	222	-	-	3	2	-	28	104	32	1	56
Delaware	-	-	-	-	-	-	-	-	-	4	-	-	-
Maryland	1	-	5	-	-	-	-	-	6	15	-	-	10
District of Columbia	-	-	-	-	-	-	-	-	-	3	-	-	10
Virginia	2	-	5	-	-	-	-	-	5	6	3	-	8
West Virginia	-	-	136	-	-	-	1	-	1	2	-	-	2
North Carolina	2	-	NN	-	-	3	-	-	5	8	2	-	6
South Carolina	1	-	1	-	-	-	-	-	-	1	2	-	2
Georgia	-	-	-	-	-	-	-	-	-	20	-	-	10
Florida	5	-	75	-	-	-	1	-	11	45	25	1	8
EAST SOUTH CENTRAL	16	-	53	-	-	8	5	-	15	64	2	-	11
Kentucky	6	-	47	-	-	5	-	-	1	37	1	-	3
Tennessee	-	-	NN	-	-	1	2	-	11	23	1	-	-
Alabama	10	-	5	-	-	-	-	-	2	2	-	-	6
Mississippi	-	-	1	-	-	2	3	-	1	2	-	-	2
WEST SOUTH CENTRAL	13	-	126	-	6	1	2	-	22	62	35	-	22
Arkansas	-	-	-	-	-	-	-	-	-	11	3	-	1
Louisiana *	5	-	NN	-	-	-	2	-	-	3	3	-	-
Oklahoma	3	-	50	-	-	-	-	-	5	10	12	-	2
Texas *	5	-	76	-	6	1	-	-	17	38	17	-	19
MOUNTAIN	2	1	115	2	30	-	1	-	13	44	24	1	15
Montana	-	-	51	2	6	-	-	-	-	7	1	-	1
Idaho	-	-	-	-	-	-	1	-	-	3	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	1	-	-
Colorado	-	-	61	-	1	-	-	-	11	10	9	-	8
New Mexico	2	-	-	-	8	-	-	-	-	7	3	-	-
Arizona	-	-	-	-	15	-	-	-	2	9	1	1	4
Utah	-	1	3	-	-	-	-	-	-	6	9	-	2
Nevada	-	-	-	-	-	-	-	-	-	2	-	-	-
PACIFIC	6	-	44	1	231	-	3	-	82	134	33	6	145
Washington	-	-	39	-	207	-	1	-	7	5	2	-	6
Oregon	-	-	-	-	-	-	-	-	10	10	3	-	10
California *	5	-	-	-	6	-	1	-	62	115	28	6	124
Alaska	1	-	5	1	18	-	1	-	3	4	-	-	2
Hawaii	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	3
Guam *	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	9	-	-	-	-	-	4	-	5	-	1
Virgin Islands	-	-	-	-	-	-	-	-	-	-	2	-	-

NA: Not Available. NN: Not Notifiable.

*Delayed Reports: Asep. Men.: Mo. 2, La. delete 1. Brucellosis: Mo. 1. Chickenpox: Me. 22, Texas 19, Calif. 45, Guam 2. Enceph. N.J. 2. Hep. B: N.H. 3, Guam 2. Hep. A: N.H. delete 5
Ohio delete 1, La. delete 3. Hep. Unsp.: La. delete 1, Texas 50.

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING DECEMBER 6, 1975 AND DECEMBER 7, 1974 (49th WEEK) - Continued

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1975	Cumulative		1975	Cumulative		1975	Cum. 1975	1975	1975	Cum. 1975	Cum. 1975
		1975	1974		1975	1974						
UNITED STATES	186	23,173	21,522	26	1,343	1,271	926	54,952	17	112	15,886	93
NEW ENGLAND	1	353	958	5	79	75	42	2,002	-	4	2,085	3
Maine*	-	15	45	1	7	4	-	84	-	1	43	-
New Hampshire*	-	21	211	1	4	11	-	121	-	1	306	-
Vermont	-	75	56	-	2	13	-	18	-	-	71	-
Massachusetts	-	114	403	1	28	17	12	280	-	1	1,220	1
Rhode Island	-	3	61	1	6	10	25	777	-	-	28	-
Connecticut	1	125	182	1	32	20	5	722	-	1	417	2
MIDDLE ATLANTIC	24	2,238	8,276	3	141	189	72	3,035	2	7	1,812	13
Upstate New York	14	980	978	1	44	68	8	1,053	1	1	320	2
New York City	1	165	630	-	35	41	20	899	1	1	184	2
New Jersey	-	476	5,698	1	22	53	15	412	-	4	1,026	3
Pennsylvania	9	617	970	1	40	27	29	671	-	1	282	6
EAST NORTH CENTRAL	54	6,938	8,410	6	199	165	344	22,346	-	59	4,622	6
Ohio	-	110	3,069	2	66	66	29	2,549	-	1	643	2
Indiana	5	489	277	-	11	17	28	2,239	-	8	1,031	-
Illinois	-	1,858	2,144	1	25	12	36	2,675	-	12	355	3
Michigan*	18	3,160	2,263	3	75	50	204	9,167	-	34	1,625	-
Wisconsin*	31	1,321	657	-	22	20	47	5,716	-	4	968	1
WEST NORTH CENTRAL	19	5,126	721	2	88	99	135	4,170	-	3	1,481	11
Minnesota	3	227	85	-	19	32	20	197	-	-	37	2
Iowa	16	667	134	-	7	15	38	1,439	-	-	30	3
Missouri	-	273	264	2	45	29	1	934	-	1	744	2
North Dakota	-	1,061	37	-	2	3	7	508	-	2	71	-
South Dakota	-	356	27	-	1	3	-	6	-	-	18	-
Nebraska	-	395	6	-	3	3	11	84	-	-	21	-
Kansas	-	2,147	168	-	11	14	58	1,002	-	-	560	4
SOUTH ATLANTIC	19	447	557	2	263	249	67	3,870	1	16	1,624	17
Delaware	-	35	16	-	8	5	2	13	-	-	21	-
Maryland	-	62	24	1	32	25	16	386	-	-	38	1
District of Columbia	1	2	3	-	5	1	-	155	-	-	-	-
Virginia	1	40	37	-	21	42	2	810	-	-	322	2
West Virginia	6	202	223	-	5	9	16	1,382	-	1	235	1
North Carolina	-	2	5	-	49	49	3	117	1	-	44	6
South Carolina	-	-	57	-	37	22	1	69	-	15	780	2
Georgia	-	40	4	-	15	8	-	17	-	-	4	-
Florida	11	64	228	1	91	88	27	921	-	-	180	5
EAST SOUTH CENTRAL	33	361	285	-	181	123	63	4,948	5	4	1,001	9
Kentucky	33	150	198	-	75	47	7	1,829	4	-	245	3
Tennessee	-	178	56	-	60	53	49	2,315	-	4	720	2
Alabama	-	5	18	-	31	14	6	432	-	-	23	1
Mississippi*	-	28	13	-	14	9	1	372	1	-	13	3
WEST SOUTH CENTRAL	7	419	254	4	203	203	36	4,777	7	4	760	21
Arkansas	-	-	7	1	13	14	-	186	4	-	20	1
Louisiana*	-	1	14	-	39	48	-	344	-	-	283	5
Oklahoma	1	148	29	-	15	21	6	298	3	1	95	-
Texas*	6	270	204	3	136	120	30	3,949	-	3	362	15
MOUNTAIN	14	1,550	832	-	39	41	24	1,037	1	1	526	-
Montana	-	50	373	-	8	1	-	43	1	-	253	-
Idaho	-	12	54	-	5	2	9	46	-	-	74	-
Wyoming	-	3	1	-	1	3	-	2	-	-	-	-
Colorado	4	1,163	107	-	10	9	12	648	-	-	135	-
New Mexico	-	15	62	-	4	3	-	38	-	-	18	-
Arizona	-	82	20	-	3	10	-	-	-	-	2	-
Utah	10	197	15	-	7	9	1	159	-	1	36	-
Nevada	-	28	200	-	1	4	2	101	-	-	8	-
PACIFIC	15	5,741	1,189	4	150	127	143	8,767	1	14	1,975	13
Washington	-	293	76	1	22	17	50	4,449	-	5	340	1
Oregon	-	199	2	-	8	16	4	724	-	-	189	-
California	15	5,184	1,045	3	111	87	89	3,492	1	9	1,426	11
Alaska	-	-	-	-	7	4	-	49	-	-	-	-
Hawaii	NA	65	66	-	2	3	NA	53	NA	NA	20	1
Guam	-	24	20	-	2	2	-	32	-	-	8	-
Puerto Rico	6	712	665	-	1	6	22	1,021	3	-	30	17
Virgin Islands	-	8	35	-	-	-	29	250	-	-	3	3

NA: Not Available.

*Delayed Reports: Measles: Mich. 20, Wisc. delete 5, Texas 2. Men. Inf.: N.H. delete 1, La. delete 1, Texas 3. Mumps: Me. delete 1, La. delete 1, Texas delete 3. Pertussis: La. delete 1, Texas 12. Rubella: Miss. delete 4.

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING DECEMBER 6, 1975 AND DECEMBER 7, 1974 (49th WEEK) - Continued

AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
	1975	Cum. 1975	Cum. 1975	1975	Cum. 975	1975	Cum. 1975	GONORRHEA		SYPHILIS (Pri. & Sec.)		Cum. 1975		
								1975	Cumulative	1975	Cumulative			
													1975	1974
UNITED STATES	698	31,258	106	21	344	2	812	19,436	937,510	844,134	380	23,906	23,908	2,246
NEW ENGLAND	24	1,187	-	1	16	-	6	628	25,980	22,966	2	809	849	69
Maine	3	74	-	-	-	-	-	45	2,023	1,937	-	35	43	42
New Hampshire	-	30	-	-	-	-	-	9	670	754	-	15	13	2
Vermont	-	27	-	-	-	-	-	-	618	601	-	7	3	-
Massachusetts	20	679	-	1	10	-	2	323	12,140	10,545	-	529	599	12
Rhode Island	1	131	-	-	-	-	3	18	2,018	1,967	1	23	16	4
Connecticut	-	246	-	-	6	-	1	233	8,511	7,162	1	200	175	9
MIDDLE ATLANTIC	106	5,642	4	2	62	-	86	2,433	106,802	104,413	79	4,362	5,127	90
Upstate New York	21	854	3	-	9	-	33	317	19,262	19,387	5	389	501	70
New York City	42	2,195	-	-	28	-	2	927	44,603	45,278	60	2,568	2,967	-
New Jersey	26	1,139	1	2	13	-	10	567	16,061	14,558	5	686	795	-
Pennsylvania	17	1,454	-	-	12	-	41	622	26,876	25,190	9	719	864	20
EAST NORTH CENTRAL	86	4,372	5	-	37	-	19	3,340	155,753	136,084	44	1,969	2,048	115
Ohio *	18	1,207	-	-	11	-	16	969	43,676	35,429	11	484	306	5
Indiana	16	551	-	-	-	-	1	465	13,179	13,126	7	144	184	10
Illinois	25	1,271	-	-	16	-	1	1,092	54,194	45,223	14	938	1,052	24
Michigan *	27	1,191	1	-	9	-	1	547	29,782	30,139	8	326	409	9
Wisconsin	-	152	4	-	1	-	-	267	14,922	12,167	4	77	97	67
WEST NORTH CENTRAL	35	1,115	20	1	16	-	32	1,265	47,611	44,294	14	586	615	478
Minnesota *	15	170	-	-	3	-	-	244	9,499	8,991	2	108	82	131
Iowa	1	122	1	-	1	-	-	265	6,862	5,822	3	68	38	96
Missouri *	9	517	15	-	7	-	19	446	17,402	15,110	7	260	396	49
North Dakota	-	16	-	-	-	-	-	23	758	704	-	5	6	94
South Dakota	3	64	-	-	-	-	-	33	1,798	2,008	-	5	3	48
Nebraska *	2	40	1	-	3	-	2	71	4,166	3,798	-	18	10	4
Kansas *	5	186	3	1	2	-	11	183	7,126	7,861	2	122	80	56
SOUTH ATLANTIC	137	6,890	17	4	49	-	405	5,014	229,380	216,103	97	7,255	7,444	333
Delaware	2	130	-	-	-	-	4	75	3,268	3,017	-	83	77	5
Maryland	26	1,111	1	2	11	-	30	615	28,024	22,979	9	539	726	7
District of Columbia	2	346	1	-	4	-	-	332	13,283	18,024	9	647	621	-
Virginia	21	821	6	-	7	-	111	408	22,563	20,053	10	579	678	100
West Virginia	9	255	-	-	4	-	4	30	2,943	2,526	-	55	19	3
North Carolina *	19	1,107	-	-	2	-	129	723	32,984	29,620	2	974	852	12
South Carolina	7	422	3	-	7	-	84	543	21,547	20,063	3	519	654	11
Georgia	20	972	5	-	3	-	37	1,148	43,021	41,920	18	1,001	1,088	160
Florida	31	1,726	1	2	11	-	6	1,140	61,747	57,901	46	2,858	2,729	35
EAST SOUTH CENTRAL	84	2,732	13	1	29	-	110	1,659	79,273	70,960	20	1,107	1,181	143
Kentucky	14	535	1	-	7	-	12	207	10,283	8,882	1	163	256	92
Tennessee *	42	1,039	12	1	15	-	72	953	31,411	28,194	10	414	436	21
Alabama	15	756	-	-	2	-	8	277	22,096	19,708	9	252	239	30
Mississippi	13	402	-	-	5	-	18	222	15,483	14,176	-	278	250	-
WEST SOUTH CENTRAL	94	3,577	42	11	29	2	145	1,725	115,268	109,493	37	2,163	2,089	469
Arkansas *	10	463	15	-	1	-	20	48	12,210	11,254	-	66	91	80
Louisiana *	15	461	2	-	10	-	1	511	20,153	22,261	6	506	541	8
Oklahoma	6	287	9	-	1	2	93	258	11,035	9,623	2	85	132	100
Texas	63	2,366	16	11	17	-	31	908	71,870	66,355	29	1,506	1,325	281
MOUNTAIN	30	950	3	1	9	-	8	796	37,956	32,863	8	545	559	260
Montana	7	58	1	-	-	-	5	35	1,979	1,835	1	6	4	157
Idaho	-	31	-	-	-	-	2	36	1,970	1,661	1	16	12	1
Wyoming	-	30	1	-	1	-	-	22	906	766	-	10	2	5
Colorado	7	208	-	-	1	-	1	301	10,263	8,987	-	95	139	32
New Mexico	8	132	-	-	2	-	-	144	6,688	4,765	1	148	88	37
Arizona *	4	395	-	1	5	-	-	196	9,977	9,275	5	201	243	25
Utah	4	49	1	-	-	-	-	34	2,363	2,024	-	16	12	3
Nevada	-	47	-	-	-	-	-	28	3,810	3,550	-	53	59	-
PACIFIC	102	4,793	2	-	57	-	1	2,576	139,487	106,958	79	5,110	3,996	289
Washington	28	425	1	-	6	-	1	151	12,626	11,629	-	164	128	4
Oregon	2	183	-	-	-	-	-	283	10,641	10,929	3	137	107	7
California	72	3,576	1	-	89	-	-	2,106	110,538	79,436	76	4,751	3,721	272
Alaska	-	62	-	-	1	-	-	36	3,428	2,768	-	6	10	6
Hawaii	NA	547	-	NA	1	NA	-	NA	2,254	2,196	NA	52	30	-
Guam *	-	58	-	-	-	-	-	-	335	-	-	13	-	-
Puerto Rico	12	468	18	-	8	-	-	67	2,747	2,918	18	679	863	42
Virgin Islands	-	3	-	-	2	-	-	9	219	725	-	41	51	-

NA: Not Available.

*Delayed Reports: TB: Ohio delete 22, Mich. delete 10, Mo. delete 2, Kans. delete 1, N.C. delete 2, LA. delete 1. GC: Nebr. delete 1 Mil., Ark. 43 Civ., 7 Mil., La. delete 17, Guam 8. Syphilis: Tenn. delete 3, Ark. 2, La. delete 3. Rabies in Animals: Minn. 1, Ariz. 1.

Week No.
49

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING DECEMBER 7, 1974

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

Area	All Causes					Pneumonia and Influenza All Ages	Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year			All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
NEW ENGLAND	749	484	181	45	21	47	SOUTH ATLANTIC	1,338	763	389	92	40	43
Boston, Mass.	230	144	51	22	6	18	Atlanta, Ga.	102	53	25	12	8	3
Bridgeport, Conn.	34	18	12	3	-	4	Baltimore, Md.	186	102	47	16	8	4
Cambridge, Mass.	28	22	4	1	-	2	Charlotte, N. C.	55	31	12	5	4	-
Fall River, Mass.	34	26	6	1	-	5	Jacksonville, Fla.	147	85	45	9	2	-
Hartford, Conn.	67	38	16	4	6	5	Miami, Fla.	123	70	41	7	1	2
Lowell, Mass.	34	21	9	1	1	3	Norfolk, Va.	54	26	21	4	1	3
Lynn, Mass.	18	11	6	1	-	-	Richmond, Va.	93	55	28	4	3	5
New Bedford, Mass.	29	21	6	1	1	-	Savannah, Ga.	55	28	17	6	1	2
New Haven, Conn.	58	39	12	3	3	2	St. Petersburg, Fla.	102	90	8	2	1	3
Providence, R. I.	72	42	24	1	3	5	Tampa, Fla.	96	60	27	4	2	12
Somerville, Mass.	11	8	3	-	-	-	Washington, D. C.	283	138	105	20	9	6
Springfield, Mass.	47	31	13	2	1	3	Wilmington, Del.	42	25	13	3	-	3
Waterbury, Conn.	22	16	4	2	-	-							
Worcester, Mass.	65	47	15	3	-	5	EAST SOUTH CENTRAL	798	472	214	45	26	37
MIDDLE ATLANTIC	3,124	1,924	817	208	92	93	Birmingham, Ala.	99	62	26	6	1	6
Albany, N. Y.	58	35	15	5	2	1	Chattanooga, Tenn.	68	42	17	3	1	7
Allentown, Pa.	19	13	5	1	-	1	Knoxville, Tenn.	52	36	11	1	3	1
Buffalo, N. Y.	181	113	46	13	5	12	Louisville, Ky.	118	72	33	3	5	9
Camden, N. J.	53	26	20	3	2	-	Memphis, Tenn.	236	134	63	15	8	4
Elizabeth, N. J.	34	25	6	1	2	-	Mobile, Ala.	79	50	17	4	2	5
Erie, Pa.	28	20	7	-	1	5	Montgomery, Ala.	44	30	11	-	2	-
Jersey City, N. J.	53	32	15	2	2	4	Nashville, Tenn.	102	46	36	13	4	5
Newark, N. J.	78	35	30	7	3	4							
New York City, N. Y. †	1,319	813	326	105	34	27	WEST SOUTH CENTRAL	1,344	732	389	94	55	32
Paterson, N. J.	50	37	9	1	3	3	Austin, Tex.	23	12	5	6	-	1
Philadelphia, Pa.	605	346	179	41	23	4	Baton Rouge, La.	64	36	20	2	3	3
Pittsburgh, Pa.	246	154	65	9	8	14	Corpus Christi, Tex.	38	19	12	1	3	-
Reading, Pa.	50	38	9	2	1	3	Dallas, Tex.	185	101	54	11	9	2
Rochester, N. Y.	123	91	16	9	4	10	El Paso, Tex.	53	35	10	5	3	1
Schenectady, N. Y.	30	22	8	-	-	2	Fort Worth, Tex.	83	52	20	5	3	-
Scranton, Pa.	38	25	11	2	-	1	Houston, Tex.	333	163	112	33	2	6
Syracuse, N. Y.	57	41	12	2	1	2	Little Rock, Ark.	55	31	11	4	5	2
Trenton, N. J.	46	19	23	3	1	1	New Orleans, La.	192	92	75	9	7	-
Utica, N. Y.	24	16	6	-	-	-	San Antonio, Tex.	171	99	38	9	11	5
Yonkers, N. Y.	32	21	9	2	-	3	Shreveport, La.	76	45	17	7	5	2
							Tulsa, Okla.	71	47	15	2	4	10
EAST NORTH CENTRAL	2,639	1,539	753	154	109	77	MOUNTAIN	544	312	151	36	19	19
Akron, Ohio	73	40	22	1	6	-	Albuquerque, N. Mex.	83	43	25	5	3	3
Canton, Ohio	43	30	8	3	1	3	Colorado Springs, Colo.	24	15	4	3	-	5
Chicago, Ill.	689	367	212	49	31	14	Denver, Colo.	111	67	33	5	3	3
Cincinnati, Ohio	163	95	49	10	6	3	Las Vegas, Nev.	27	11	8	6	2	1
Cleveland, Ohio	157	114	62	10	7	8	Ogden, Utah	18	10	7	1	-	1
Columbus, Ohio	137	72	41	9	10	4	Phoenix, Ariz.	136	77	44	7	3	1
Dayton, Ohio	118	65	38	10	3	1	Pueblo, Colo.	22	19	3	-	-	2
Detroit, Mich.	326	178	104	21	8	6	Salt Lake City, Utah	64	37	11	4	5	3
Evansville, Ind.	32	20	10	2	-	5	Tucson, Ariz.	59	33	16	5	3	-
Fort Wayne, Ind.	72	47	16	5	3	10							
Gary, Ind.	23	14	7	2	-	1	PACIFIC	1,894	1,210	434	123	70	33
Grand Rapids, Mich.	56	40	12	1	1	5	Berkeley, Calif.	29	23	4	1	-	-
Indianapolis, Ind.	164	92	48	8	10	4	Fresno, Calif.	64	39	15	4	4	-
Madison, Wis.	55	35	11	4	3	4	Glendale, Calif.	36	30	5	-	-	1
Milwaukee, Wis.	165	120	44	9	6	3	Honolulu, Hawaii	54	32	15	2	2	3
Peoria, Ill.	30	21	6	1	1	-	Long Beach, Calif.	135	85	39	8	2	2
Rockford, Ill.	56	37	16	3	-	3	Los Angeles, Calif.	666	434	147	42	22	9
South Bend, Ind.	51	35	13	-	3	2	Oakland, Calif.	88	58	20	2	7	3
Toledo, Ohio	106	75	19	3	7	2	Pasadena, Calif.	40	28	8	1	1	2
Youngstown, Ohio	63	42	15	3	3	-	Portland, Oreg.	95	63	19	5	5	2
							Sacramento, Calif.	63	41	16	2	3	2
WEST NORTH CENTRAL	868	543	214	42	34	27	San Diego, Calif.	153	81	38	22	7	1
Des Moines, Iowa	61	39	16	2	1	2	San Francisco, Calif.	182	111	43	13	9	2
Duluth, Minn.	26	19	4	1	1	4	San Jose, Calif.	58	38	13	5	-	-
Kansas City, Kans.	37	20	10	1	3	1	Seattle, Wash.	132	87	29	6	4	4
Kansas City, Mo.	167	105	39	9	11	2	Spokane, Wash.	55	34	14	5	2	2
Lincoln, Neb.	40	24	11	3	-	2	Tacoma, Wash.	44	26	9	5	2	-
Minneapolis, Minn.	104	71	20	7	3	1							
Omaha, Neb.	108	71	28	2	1	2	Total	13,298	7,979	3,542	839	466	408
St. Louis, Mo.	226	133	61	11	8	5	Expected Number	12,390	7,527	3,242	779	403	425
St. Paul, Minn.	65	41	15	4	2	-							
Wichita, Kans.	36	20	10	2	4	8							

†Delayed Report for Week Ending 11/29/75.

DENGUE - Continued

of Health have been greatly strengthened. Aerial application of malathion in ultra low volume will begin about December 11 in the San Juan metropolitan area.

(Reported by A Rivera, MD, San Juan City Hospital; JE Madera, MD, Bayamon Subregional Hospital; AF de Franqui,

MD, A Otero, MD, Bayamon Health Center; R Bermudez, MD, Veterans Admin Hospital; V González, MD, State Epidemiologist, State Dept of Health, Puerto Rico; San Juan Laboratory, Bur of Laboratories, Field Surveillance Branch, Field Services Div, and Viral Diseases Div, Bur of Epidemiology, CDC.)

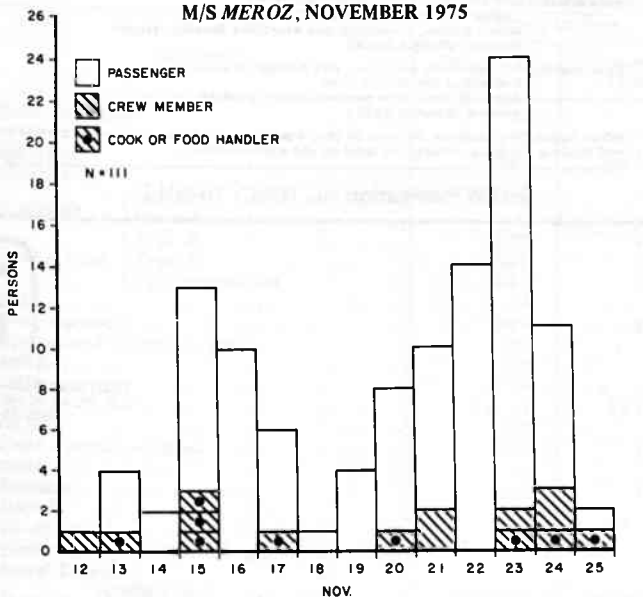
EPIDEMIOLOGIC NOTES AND REPORTS

DIARRHEAL ILLNESS ABOARD A CRUISE SHIP

On the November 13-25 cruise of the M/S *Mermoz*, 100 of 343 passengers (29.2%) and 16 of 256 crew members (6.3%) experienced a diarrheal illness, according to questionnaires these 599 individuals answered at the completion of their journey. Symptoms included abdominal cramps (49%), headache (35%), nausea (34%), vomiting (25%), and fever (17%). The median duration of illness was approximately 2 days. Twenty-nine percent of the ill passengers consulted the ship's medical staff, and 29% were confined to their cabins for at least 1 day because of illness.

One crew member became ill on November 12, the day before the cruise began. Three additional crew members and 9 passengers became ill before the ship's first stop on November 15 (Figure 2). Nine of the 16 crew members who developed diarrhea were food handlers; all but 1 of them continued to work in the kitchen while ill. The questionnaire, completed by 94% of the passengers, demonstrated a statistically significant association between illness and consumption of water aboard the ship (Table 1).

Figure 2
ONSET OF ILLNESS AMONG PASSENGERS AND CREW BY DATE,
M/S MEROZ, NOVEMBER 1975



*DATE OF ONSET OF ILLNESS UNKNOWN FOR 4 PASSENGERS AND 1 CREW MEMBER

TICK-BORNE RELAPSING FEVER - California

On October 4, 1975, a 38-year-old man had an acute onset of shaking chills, fever to 38°C, crampy lower abdominal pain, and nausea without vomiting. After several hours the pain became localized in the right lower quadrant. He improved enough the following day to work, but the return of chills and fever led to his admission to a San Francisco hospital on October 6, with a diagnosis of probable appendicitis. An appendectomy was performed that day, but

the appendix had no gross or microscopic pathologic abnormalities. No intra-abdominal abnormalities were noted at time of surgery. He became afebrile on October 8 without antibiotic treatment. He was discharged on October 11, with marked improvement in abdominal pain.

On October 13, chills, fever to 40°C, and diffuse lower abdominal pain returned. Physical examination revealed sinus tachycardia, and a new grade II/VI systolic ejection

Table 1

Association Between Illness and Average Daily Water Consumption Among Passengers, M/S *Mermoz*, November 13-25, 1975

Glasses per Day	Ill*	Well	% Ill
0	7	41	14.6
≥1	91	164	35.7

Fishers 2-tail test $p = .004$

*Ill passengers were asked how much water they drank before the onset of illness.

Cultures of rectal swabs obtained from ill and well passengers and crew on November 25 were negative for salmonellae, shigellae, and pathogenic vibrios. No coliform bacteria were found in samples from the ship's water distribution and storage system; however, the system had recently been chlorinated.

On October 20, 1975, the U.S. Public Health Service had conducted a routine sanitation inspection of the ship's facilities and found that the ship did not meet the minimum standards recommended by CDC. Multiple deficiencies were found in the potable water system. Among these were that: 1) the water was not chlorinated when it was pumped into the ship; 2) no free chlorine was detectable in the water distribution system; and 3) some potable water faucets were not adequately equipped to prevent back siphonage. The findings and recommendations of the inspection team were given to the ship's captain, the ship's agent, and the shipping company. On November 13, the day the cruise started on which the outbreak occurred, a follow-up inspection revealed that the deficiencies had not been corrected. The deficiencies were again called to the attention of the ship's captain.

A follow-up inspection conducted on December 6, 1975, before the *Mermoz* resumed its cruise schedule, revealed that the major deficiencies in the water system had been corrected, and the remaining items were being repaired.

(Reported by Epidemiologic Investigations Laboratory Branch and Enteric Diseases Branch, Bacterial Diseases Div, Field Services Div, and Quarantine Div, Bur of Epidemiology, CDC.)
Editorial Note

Epidemiologic investigation found an association between diarrheal illness and consumption of drinking water on board the ship. The multiple deficiencies in the water system noted on 2 previous inspections may have contributed to this outbreak.

RELAPSING FEVER — Continued

murmur. There was abdominal tenderness with voluntary guarding, making delineation of the liver and spleen impossible. There was no skin eruption. The remainder of the physical examination was unremarkable.

Laboratory studies showed hemoglobin 11.2 gm/dl, white cell count of 7,200/mm³ with 73 neutrophils, 8 bands, 5 lymphocytes, and 4 monocytes. Urinalysis was normal. Liver function tests included SGOT 32 (normal 12-55), alkaline phosphatase 154 (20-90 U/ml), total bilirubin of 0.6 mg/dl, and albumin of 313 gm/dl. Examination of a blood smear prepared with Wright's stain revealed many thread-like spiral organisms resembling *Borrelia*, with a density of 1-2 organisms per high power field. A centrifuged layer of white blood cells was examined under dark field and phase contrast microscopy. The characteristic forward and backward motion of spirochetes, with bending and looping, was demonstrated.

After relapsing fever was diagnosed, the patient was treated with 3 doses of 600,000 units of procaine penicillin IM, followed the next day by 500 mg of tetracycline by mouth every 6 hours. He became afebrile on the second day of antibiotic treatment, and on the fourth day he was discharged with instructions to continue tetracycline therapy for a total of 10 days.

Questioning revealed that on September 26 the patient had hiked 20 miles in Yellowstone Park during a trip from Connecticut to California. His only animal contact was with a porcupine, which he had attempted to catch. During the process, his sweater touched the animal; he did not. The patient did not recall being bitten by any insects or having found any ticks in his clothing.

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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 cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials.

(Reported by C Engle, MT, D Berkeley, MD, W Lee, PhD, and R Leonards, MD, Children's Hospital of San Francisco; and Special Pathogens Branch, Bacterial Diseases Div, Bur of Epidemiology, CDC.)

Editorial Note

In the United States sporadic relapsing fever is transmitted from animals to man by ticks. Rodents and insectivores are the usual sylvan hosts, but other animals have been implicated, including porcupines. It is not unusual for a patient to be unaware of a previous tick bite, because ticks of the genus *Ornithodoros*, which transmit *Borrelia*, usually cause painless bites and leave their hosts after a short blood meal, usually after 30 to 60 minutes.

Tick-borne relapsing fever is endemic, although of low incidence, throughout the western United States as well as many other countries. It should be suspected in a patient with a febrile illness from those areas, especially if the illness is recurrent. Diagnosis is best made by examination of a blood smear for helical organisms which are 8-30 μ long and 0.3 to 0.5 μ wide. The characteristic motion should be observed on wet mount. Confirmation is best provided by inoculation of 1-2 ml of blood intraperitoneally into young mice or guinea pigs. Examination of their blood at daily intervals for 5 days will reveal the typical organisms.

References

1. Felsenfeld O: *Borrelia*: St. Louis, Warren H. Green, Ind., 1971
2. Southern PM: Relapsing fever. *Medicine* 48:129, 1969

Erratum, Vol. 24, No. 48, p 411

In the last footnote to Table 1, Results of Screening in Childhood Lead Poisoning Control Projects, delete 12/31/75, and insert 12/31/74.

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