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# Morbidity and Mortality

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

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INTERNATIONAL NOTES  
LASSA FEVER - Liberia

Between March 2 and 26, 1972, 11 cases of Lassa Fever occurred among patients and staff members in a hospital in Zorzor District, Liberia, West Africa (Figure 1). All cases were in adult females hospitalized or working on the obstetrical ward. The incubation periods ranged from 5-14 days. Four persons died, for a case fatality ratio of 37%.

The index case was in a woman who had been admitted to the obstetrical ward on March 2 with a history of fever, vomiting, abdominal pain, and vaginal bleeding for several days. On March 3, she aborted twins (at approximately 16 weeks gestation), underwent a dilation and curettage (D&C), and was placed on the post-partum ward. She had symptoms compatible with Lassa Fever until March 10 and convalesced on the ward until March 19. The secondary cases, all with common exposure to the index case, occurred within 1 week of her date of discharge.

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Illness in all cases began gradually with fever, chills, generalized malaise, myalgia, headache, anorexia, and nausea. Subsequently, the severity of symptoms increased, with high fever, dizziness, sore throat, cough, pleuritic pain, abdominal pain, and frequent loose stools. Physical findings included agitation, stupor, facial puffiness, injected conjunctivae, pharyngitis, rales, generalized lymphadenopathy, maculopapular rash, and abnormal bleeding from intravenous and cut-down

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

DISEASE	28th WEEK ENDING		MEDIAN 1967-1971	CUMULATIVE, FIRST 28 WEEKS		
	July 15, 1972	July 17, 1971		1972	1971	MEDIAN 1967-1971
Aseptic meningitis . . . . .	45	126	119	1,111	1,516	1,020
Brucellosis . . . . .	3	4	4	84	84	112
Chickenpox . . . . .	1,126	---	---	109,610	---	---
Diphtheria . . . . .	4	---	1	56	90	90
Encephalitis, primary:						
Arthropod-borne and unspecified . . . . .	12	36	31	447	654	602
Encephalitis, post-infectious . . . . .	8	9	9	164	222	262
Hepatitis, serum (Hepatitis B) . . . . .	133	148	84	4,961	4,559	2,767
Hepatitis, infectious (Hepatitis A) . . . . .	905	1,061	828	29,887	32,860	25,026
Malaria . . . . .	4	60	54	603	1,899	1,423
Measles (rubeola) . . . . .	325	994	498	25,514	66,155	37,322
Meningococcal infections, total . . . . .	21	34	36	858	1,561	1,591
Civilian . . . . .	21	32	36	825	1,379	1,435
Military . . . . .	---	2	1	33	182	166
Mumps . . . . .	663	1,164	---	53,157	94,214	---
Rubella (German measles) . . . . .	121	864	431	19,449	36,353	41,009
Tetanus . . . . .	4	2	3	59	54	71
Tuberculosis, new active . . . . .	606	---	---	17,773	---	---
Tularemia . . . . .	11	11	8	70	78	79
Typhoid fever . . . . .	5	11	9	162	160	155
Typhus, tick-borne (Rky. Mt. spotted fever) . . . . .	24	21	16	213	172	152
Venereal Diseases:†						
Gonorrhea . . . . .	14,610	14,202	---	373,999	332,831	---
Syphilis, primary and secondary . . . . .	448	465	---	12,803	12,544	---
Rabies in animals . . . . .	80	56	57	2,389	2,408	2,046

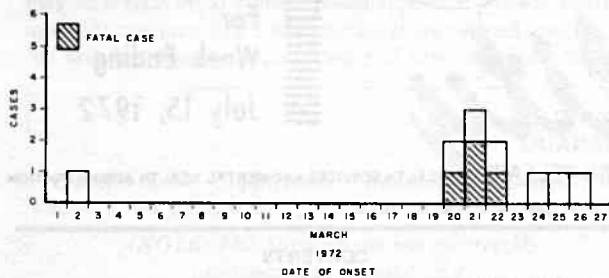
TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax: . . . . .	---	Poliomyelitis, total: . . . . .	8
Botulism: . . . . .	---	Paralytic: . . . . .	8
Congenital rubella syndrome: . . . . .	21	Psittacosis: Ala. - 1, Tex. - 1 . . . . .	21
Leprosy: Calif. - 3 . . . . .	65	Rabies in man: . . . . .	1
Leptospirosis: Calif. - 1 . . . . .	13	Trichinosis: N.Y.C. - 1 . . . . .	44
Plague: . . . . .	1	Typhus, murine: Hawaii - 1 . . . . .	10

†Numbers for 1971 are estimated from quarterly reports to the Venereal Disease Branch, CDC

## LASSA FEVER – Continued

Figure 1  
CASES OF LASSA FEVER, BY DATE OF ONSET  
ZORZOR DISTRICT, LIBERIA, WEST AFRICA – MARCH 1-27, 1972



sites. Low pulse pressures were noted in all cases. Low peripheral white blood cell counts and albuminuria were noted in some patients. Five cases were confirmed serologically using the complement fixation test on paired or single sera.

In the fatal cases, severe toxicity, "cold" shock, and low urinary output, hypothermia, and generalized convulsions developed; death occurred on the 11-15th day of illness. Autopsies were performed on three patients; peritoneal effusion, edematous bowel, and black hemorrhagic material in the gastrointestinal tract were the prominent findings.

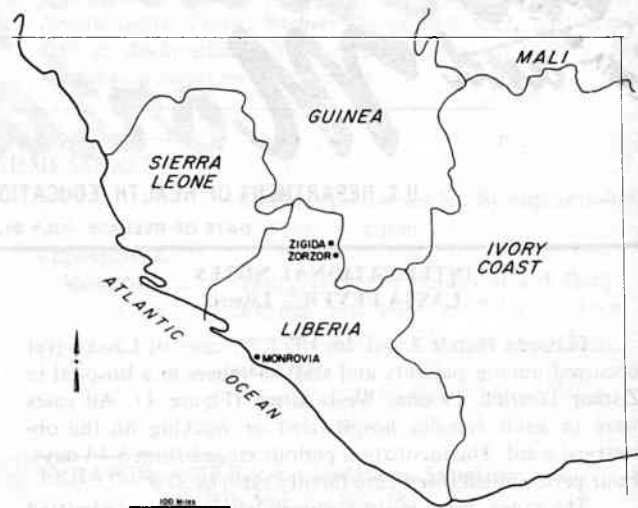
The hospital staff was followed closely for signs of illness, and blood specimens were obtained on April 10 and 19, 11 and 20 days after full isolation and precautions had been instituted.

The index case lived in the village of Zigida (27 miles northeast of Zorzor) (Figure 2) and had not traveled outside the village in the month preceding her illness. Rodents are plentiful and are seen or heard nightly around the dwellings. People readily admit to eating them; however, active trapping for food was discontinued 2 years ago. No unusual increase in rodent populations has been noted. Unprovoked bites occur occasionally, usually when the persons are asleep. The patient had no known contact with rodents. No similar illnesses have occurred recently in Zigida.

One of the secondary cases was in the bed next to the index case. Two other secondary cases were exposed to the index case on the post-partum ward. The remaining seven cases were in hospital staff members, including nurses, midwives, midwifery students, and an aide. All of them had close contact with the index case, performing hygienic duties, such as changing maternity pads and handling and measuring urine. One of the fatal cases was in an American missionary nurse. She had performed the D&C on the index case and had gotten blood and lochia on open varicose ulcers on her legs.

A total of 129 persons hospitalized on the post-partum ward and exposed to either the index case or to secondary cases were identified by review of hospital records. Visits were made to 21 villages in an attempt to locate these contacts. A total of 55 contacts were eventually located, and blood specimens were obtained; 37 lived in Guinea or in

Figure 2  
LOCATION OF LASSA FEVER CASES  
LIBERIA, WEST AFRICA – MARCH 1972



areas outside Zorzor District. Results of laboratory tests are pending.

Approximately 250 snap and 30-40 Sherman traps were set nightly for 8 nights in Zigida village proper and in surrounding farms. In addition, mist nets were set in the village, in surrounding fruit plantations, and over watering places. A total of 164 mammals were collected. Tissues (liver, spleen, heart, lung, kidney) and, when possible, serum and urine were preserved for virus isolation. The results are pending.

(Reported by Paul E. Mertens, M.D., Curran Lutheran Hospital, Zorzor, Liberia; Robert Patton, M.D., Chief of Medicine, JFK Memorial Hospital, Monrovia, Liberia; The Honorable Mai Padmore, Minister of Health, Education, and Social Welfare, National Public Health Service, Monrovia; the Laboratory Division, and the Smallpox Eradication Program, CDC.)

## Editorial Note

Although rodents are suspected of being a natural reservoir for Lassa virus, no field studies to date have provided evidence of the presence of virus or antibodies in wild rodents. The index case undoubtedly acquired her infection in Zigida, an area where rodent populations were high, as indicated by the high yield per trap night. Insectivorous bats are also plentiful and live in the eaves of huts; if infected, they could provide another possible source of infection. The index case probably represents sporadic infection, since no deaths and similar illnesses occurred in her village recently. If peridomestic rodents or bats are involved, either few animals are infected or capable of shedding virus, or transmission to man is difficult. The possibility of a sylvan reservoir as opposed to a peri-domestic reservoir must also be considered.

## GASTROENTERITIS SUSPECTED AS CHOLERA – Curaçao

On approximately July 19, 1972, several cases of diarrhea occurred among crew members of a British tanker traveling across the Atlantic Ocean bound for Curaçao in the Netherlands Antilles. By the time the ship reached the Caribbean area, two-thirds of the crew of 45 had experienced diarrhea.

One man of undetermined age died 2 days after the onset of diarrhea. The tanker made an unscheduled stop in Trinidad where a postmortem examination revealed no specific cause of death.

After the tanker arrived in Curaçao, cholera was sus-

pected, and rectal specimens were obtained from recently affected crew members. The cultures grew sucrose fermenting colonies on thiosulphate citrate bile salts (TCBS) agar (1) which were interpreted as being morphologically similar to *Vibrio cholerae*. On July 3, the slide agglutination test of these colonies was positive in commercially prepared polyvalent cholera antisera.

Further investigation, however, revealed that two hospitalized crew members were infected with falciparum malaria, and stool specimens from three recently affected members of the crew yielded group B salmonella.

Before leaving for Curaçao, the tanker had visited three West African ports and obtained food and supplies.

The colonies on TCBS which had agglutinated in the commercial antisera in Curaçao did not agglutinate in CDC's antisera.\* The morphologic appearance of these colonies pro-

\*Obtained from the *Vibrio* Reference Laboratory, Jefferson Medical College, Philadelphia, Pennsylvania

duced gas on TSI slants and gave a negative string test (2, 3). (Reported by J. M. Th. Gielen, M.D., Director of Health, R. T. deJongh, M.D., Chief, Microbiology Laboratory, H. Weiland, M.D., Chief, Serology Laboratory, Laboratorium Voor de Volksgezondheid, Curaçao, Netherlands Antilles; and the Bacterial Diseases Branch, Epidemiology Program, CDC.)

#### Editorial Note

The diarrheal illness aboard the tanker was probably due to salmonella, and the crewman's death was most likely due to falciparum malaria. This incident illustrates that laboratory confirmation of suspected cases is extremely important.

#### References

1. Kobayashi T, Enomoto S, Sakazaki R: [A new selective isolation medium for the *Vibrio* group; on a modified Nakanishi's medium (TCBS agar medium)]. Jap J Bact 18:387, 1963 (Jap)
2. Smith HL: A presumptive test for vibrios: the "string" test. Bull WHO 42:817-818, 1970
3. Ballows A, Hermann GJ, DeWitt WE: The isolation and identification of *Vibrio cholerae* - A review. Health Lab Sci 8:167-175, 1970

### TYPHOID FEVER - United Kingdom

On June 1, 1972, a 57-year-old man from the United Kingdom was hospitalized in Stoke-on-Trent, Staffs, England, with fever, malaise, anorexia, and headache. His illness was diagnosed as typhoid fever.

Stool and blood specimens were cultured and yielded *Salmonella typhi*, which was resistant to chloramphenicol, tetracycline, streptomycin, and sulfadiazine. Phage typing revealed a degraded Vi (A) pattern. The patient was initially treated with chloramphenicol and later with sulfamethoxazole-trimethoprim. His illness was complicated by intestinal hemorrhage and other difficulties, but he did recover.

The patient had recently taken a world cruise, stopping for a few hours in Acapulco, Mexico, on April 29. While in Acapulco, he ate no food, but he did share 2½ bottles of "cheap red wine" with a companion. The ship took aboard food supplies there, including fruits, but these were not considered likely sources of infection. The ship made no other stops in Mexico. There were no other known cases of typhoid fever among the passengers; however, epidemiologic studies

are still in progress.

(Reported by Dr. J. H. L. Berry, Principal Medical Officer, Department of Health and Social Security, United Kingdom; Epidemiological Bulletin, Public Health Laboratory Service, June 17, 1972, United Kingdom; the Foreign Quarantine Program, and the Bacterial Diseases Branch, Epidemiology Program, CDC.)

#### Editorial Note

This typhoid strain has not been previously reported in Acapulco; however, it is likely that the patient acquired his infection there, although the mode of acquisition is uncertain. This case is similar to those which have recently occurred in the United States (MMWR, Vol. 21, Nos. 21, 23, 24), since the strain of *S. typhi* has the characteristic drug-susceptibility pattern seen in the Shiga dysentery strain. It also has the same phage pattern of *S. typhi* strains isolated in the current Mexican outbreak. The characteristic resistance pattern is mediated by an episome from both *Shiga dysenteriae* type 1 and the *S. typhi* strains from the central Mexican outbreak.

### EPIDEMIOLOGIC NOTES AND REPORTS

#### TRICHINOSIS - Missouri

On May 11, 1972, a 43-year-old woman in St. Louis, Missouri, had onset of nausea, vomiting, and diarrhea. The following day, she consulted her physician who made a diagnosis of intestinal "flu" and gave her an intramuscular injection of 600,000 units of penicillin. On May 15, the patient experienced general weakness, leg edema, and joint stiffness, and 3 days later she was admitted to a local hospital.

On admission, examination revealed a temperature of 100°F., a 3+ ankle and 1+ thigh edema, marked proximal muscle weakness, sinus tachycardia, and decreased triceps reflexes. Laboratory tests the same day disclosed a white blood cell (WBC) count of 12,540 with 22% eosinophils, erythrocyte sedimentation rate of 41, SGOT 107, creatinine phosphokinase 27, and negative antinuclear antibodies and lupus erythematosus preparations. A stool examination for ova and parasites was negative. Eosinophilia reached a peak of 33% (WBC 11,329) on May 19. The patient became increasingly febrile, weak, and edematous and experienced severe

myalgia on May 23. A left quadriceps muscle biopsy was performed on May 28, and numerous trichina larvae were detected on microscopic examination. Corticosteroid therapy was initiated immediately, but the patient died on May 29 of a cardio-pulmonary arrest.

Postmortem examination revealed *Trichinella spiralis* invasion of the diaphragm and major muscle masses with accompanying inflammatory changes. Also noted were cardiomegaly with multiple foci of myocardial necrosis and accumulations of lymphocytes and eosinophils, a left ventricular mural thrombus, bilateral bronchopneumonia, recent splenic infarcts, ascites, fatty metamorphosis of the liver, and lower leg edema.

In the first week in June, the patient's 12-year-old daughter complained of abdominal discomfort and nausea. Her WBC was 8,800 with 20% eosinophils. She denied having fever, myalgia, orbital edema, and arthritis. On the evening

(Continued on page 244)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
 FOR WEEKS ENDING JULY 15, 1972 AND JULY 17, 1971 (28th WEEK)

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post In- fectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
						1972	1971	1972	1972	1972	1971
UNITED STATES	45	3	1,126	4	56	12	36	8	133	905	1,061
NEW ENGLAND	3	—	227	—	—	—	1	—	2	47	52
Maine *	—	—	8	—	—	—	—	—	—	—	12
New Hampshire	—	—	12	—	—	—	—	—	—	2	2
Vermont	—	—	3	—	—	—	—	—	—	8	5
Massachusetts	—	—	82	—	—	—	—	—	—	24	14
Rhode Island	3	—	39	—	—	—	1	—	1	4	10
Connecticut	—	—	83	—	—	—	—	—	1	9	9
MIDDLE ATLANTIC	1	—	124	1	2	—	4	1	35	99	146
Upstate New York	—	—	4	—	1	—	1	1	8	23	29
New York City	1	—	119	1	1	—	2	—	10	25	31
New Jersey	—	—	NN	—	—	—	1	—	17	51	47
Pennsylvania *	—	—	1	—	—	—	—	—	—	—	39
EAST NORTH CENTRAL	2	—	505	—	3	3	14	1	27	125	160
Ohio	—	—	47	—	—	1	9	—	6	36	38
Indiana	—	—	30	—	—	—	1	—	2	17	8
Illinois	1	—	—	—	2	1	4	1	11	24	40
Michigan	1	—	71	—	1	1	—	—	8	44	72
Wisconsin	—	—	357	—	—	—	—	—	—	4	2
WEST NORTH CENTRAL	1	—	19	—	9	—	—	—	2	28	50
Minnesota	—	—	—	—	—	—	—	—	—	2	4
Iowa	—	—	7	—	—	—	—	—	—	4	2
Missouri	—	—	8	—	—	—	—	—	—	4	17
North Dakota	1	—	4	—	—	—	—	—	—	—	4
South Dakota	—	—	—	—	6	—	—	—	—	3	3
Nebraska	—	—	—	—	3	—	—	—	—	1	2
Kansas	—	—	—	—	—	—	—	—	2	14	18
SOUTH ATLANTIC	10	1	102	—	9	4	7	—	15	136	188
Delaware	—	—	1	—	—	—	—	—	—	—	—
Maryland	—	—	2	—	1	—	—	—	4	11	25
District of Columbia	—	—	9	—	—	—	—	—	—	—	1
Virginia	2	1	27	—	—	—	1	—	4	29	51
West Virginia	1	—	61	—	—	—	—	—	—	6	10
North Carolina	1	—	NN	—	—	1	—	—	2	35	36
South Carolina	—	—	2	—	1	—	—	—	—	4	9
Georgia	—	—	—	—	2	—	—	—	—	11	22
Florida	6	—	—	—	5	3	6	—	5	40	34
EAST SOUTH CENTRAL	1	1	29	—	2	1	2	2	5	42	67
Kentucky	—	—	28	—	—	—	—	—	—	15	19
Tennessee	1	1	NN	—	—	—	1	1	4	16	32
Alabama	—	—	1	—	2	—	1	—	1	10	10
Mississippi	—	—	—	—	—	1	—	1	—	1	6
WEST SOUTH CENTRAL	15	1	20	2	23	1	6	2	9	144	127
Arkansas	—	—	—	—	—	—	—	—	—	4	4
Louisiana	3	—	NN	—	4	1	—	—	3	15	18
Oklahoma	4	—	—	—	—	—	1	—	1	7	21
Texas	8	1	20	2	19	—	5	2	5	118	84
MOUNTAIN	2	—	58	—	5	1	—	—	6	85	75
Montana	—	—	15	—	—	—	—	—	—	3	6
Idaho	—	—	—	—	2	—	—	—	—	6	7
Wyoming	—	—	—	—	—	—	—	—	—	—	1
Colorado	—	—	—	—	—	—	—	—	5	24	19
New Mexico	—	—	13	—	1	1	—	—	—	19	11
Arizona	1	—	30	—	2	—	—	—	—	12	21
Utah	1	—	—	—	—	—	—	—	1	8	10
Nevada	—	—	—	—	—	—	—	—	—	13	—
PACIFIC	10	—	42	1	3	2	2	2	32	199	196
Washington	1	—	13	1	2	—	—	—	1	15	25
Oregon	—	—	—	—	—	—	—	—	—	40	17
California	9	—	—	—	1	2	2	2	26	129	145
Alaska	—	—	4	—	—	—	—	—	1	4	1
Hawaii	—	—	25	—	—	—	—	—	3	11	8
Guam	—	—	—	—	—	—	---	—	—	—	---
Puerto Rico	—	—	11	—	—	—	—	—	1	7	38
Virgin Islands	—	—	—	—	—	—	—	—	—	—	1

 \*Delayed reports: Aseptic meningitis: Pa. 2  
 Chickenpox: Me. 21, Pa. 4

 Encephalitis, primary: Pa. 3  
 Hepatitis B: Me. 1

# Morbidity and Mortality Weekly Report

**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JULY 15, 1972 AND JULY 17, 1971 (28th WEEK) - Continued**

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1972	Cum. 1972	1972	Cumulative		1972	Cumulative		1972	Cum. 1972	1972	Cum. 1972
				1972	1971		1972	1971				
UNITED STATES	4	603	325	25,514	66,155	21	858	1,561	663	53,157	121	19,449
NEW ENGLAND	-	15	69	2,948	3,326	1	36	68	27	2,255	10	911
Maine *	-	1	1	237	1,444	-	3	8	8	254	-	65
New Hampshire	-	3	2	224	194	1	3	10	3	177	1	32
Vermont	-	-	-	120	103	-	-	-	-	111	-	68
Massachusetts	-	5	55	613	229	-	17	27	4	541	-	421
Rhode Island	-	-	-	517	237	-	10	3	2	361	-	87
Connecticut	-	6	11	1,237	1,119	-	3	20	10	811	9	238
MIDDLE ATLANTIC	-	47	12	872	7,255	2	105	203	96	2,740	11	1,800
Upstate New York	-	9	7	123	592	-	25	56	NN	NN	4	225
New York City	-	7	4	217	3,625	1	35	41	79	1,414	4	180
New Jersey	-	15	1	479	1,170	-	20	48	7	682	2	1,151
Pennsylvania *	-	16	-	53	1,868	1	25	58	10	644	1	244
EAST NORTH CENTRAL	-	59	129	10,527	14,515	2	113	175	148	14,680	34	5,244
Ohio	-	9	1	225	3,865	2	44	54	21	2,098	2	373
Indiana	-	1	5	1,195	2,619	-	11	13	22	934	6	607
Illinois	-	23	46	3,903	2,832	-	25	49	25	2,630	15	988
Michigan	-	24	32	1,900	2,090	-	29	49	11	2,514	6	1,211
Wisconsin	-	2	45	3,304	3,109	-	4	10	69	6,504	5	2,065
WEST NORTH CENTRAL	2	42	3	913	6,710	-	65	121	26	8,143	3	1,243
Minnesota	-	4	-	18	51	-	16	20	-	667	-	487
Iowa	-	3	3	644	2,229	-	2	8	5	5,645	1	378
Missouri	2	12	-	158	2,578	-	20	44	12	467	2	104
North Dakota	-	1	-	49	226	-	-	5	9	307	-	21
South Dakota	-	4	-	5	211	-	2	5	-	115	-	12
Nebraska	-	3	-	18	62	-	9	14	-	244	-	50
Kansas	-	15	-	21	1,353	-	16	25	-	698	-	191
SOUTH ATLANTIC	-	85	31	2,028	7,066	3	194	274	141	4,908	17	1,464
Delaware	-	-	1	48	34	-	1	2	3	73	-	7
Maryland	-	5	-	15	522	-	33	42	9	284	1	42
District of Columbia	-	2	-	2	13	1	8	10	1	18	-	6
Virginia	-	4	1	58	1,382	-	43	26	95	1,038	3	65
West Virginia	-	1	2	245	479	-	6	7	15	2,240	-	365
North Carolina	-	33	1	29	1,891	-	25	46	NN	NN	2	27
South Carolina	-	10	3	211	887	-	18	20	2	162	1	50
Georgia	-	20	-	153	201	-	6	23	-	14	-	56
Florida	-	10	23	1,267	1,657	2	54	98	16	1,079	10	846
EAST SOUTH CENTRAL	-	157	8	1,004	8,020	5	72	135	27	2,785	10	1,434
Kentucky	-	138	5	507	3,836	2	22	37	5	432	5	809
Tennessee	-	-	2	188	983	2	28	51	22	1,775	5	475
Alabama	-	15	1	129	1,796	1	14	28	-	469	-	39
Mississippi	-	4	-	180	1,405	-	8	19	-	109	-	111
WEST SOUTH CENTRAL	-	67	14	1,363	12,158	3	107	136	73	4,447	9	1,381
Arkansas	-	5	-	13	768	-	9	5	3	157	-	29
Louisiana	-	5	-	82	1,655	3	34	47	4	282	-	84
Oklahoma	-	4	-	9	745	-	6	7	1	155	-	33
Texas	-	53	14	1,259	8,990	-	58	77	65	3,853	9	1,235
MOUNTAIN	1	41	15	1,703	3,079	1	14	47	19	2,746	4	1,016
Montana	-	2	-	12	904	-	2	5	1	159	-	28
Idaho	-	3	-	19	258	1	4	7	-	194	1	25
Wyoming	-	1	-	51	84	-	1	2	-	218	-	8
Colorado	1	27	5	506	795	-	2	7	4	720	-	511
New Mexico	-	1	1	106	326	-	1	3	-	545	1	82
Arizona	-	5	9	856	382	-	1	8	14	739	2	335
Utah	-	2	-	153	323	-	2	12	-	126	-	24
Nevada	-	-	-	-	7	-	1	3	-	45	-	3
PACIFIC	1	90	44	4,156	4,026	4	152	402	106	10,453	23	4,956
Washington	-	-	1	965	942	-	11	23	10	3,525	-	817
Oregon	-	10	5	103	361	-	12	29	38	1,379	4	337
California	1	69	38	2,986	2,376	4	121	344	56	5,229	19	3,736
Alaska	-	2	-	11	52	-	5	-	-	94	-	19
Hawaii	-	9	-	91	295	-	3	6	2	226	-	47
Guam	-	2	-	4	---	-	11	---	-	2	-	6
Puerto Rico	-	3	2	524	400	-	4	4	25	662	4	16
Virgin Islands	-	-	-	1	11	-	2	-	5	128	-	3

\*Delayed reports: Measles: Me. 1, Pa. 4  
Mumps: Me. 9, Pa. 41  
Meningococcal infections: Pa. 1  
Rubella: Pa. 2

## Morbidity and Mortality Weekly Report

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JULY 15, 1972 AND JULY 17, 1971 (28th WEEK) - Continued

AREA	TETANUS	TB (New Active)	TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
	1972	1972	1972	Cum. 1972	1972	Cum. 1972	1972	Cum. 1972	GONOR- RHEA	SYPHILIS (Pri. & Sec.)	1972	Cum. 1972
									1972	1972		
UNITED STATES .....	4	606	11	70	5	162	24	213	14,610	448	80	2,389
NEW ENGLAND .....	-	25	-	-	-	7	-	-	260	7	1	76
Maine*	-	-	-	-	-	-	-	-	21	-	1	61
New Hampshire*	-	-	-	-	-	1	-	-	11	-	-	2
Vermont	-	1	-	-	-	-	-	-	10	-	-	8
Massachusetts	-	15	-	-	-	4	-	-	-	-	-	2
Rhode Island	-	1	-	-	-	-	-	-	20	1	-	1
Connecticut	-	8	-	-	-	2	-	-	198	6	-	2
MIDDLE ATLANTIC .....	1	69	-	1	1	31	3	15	2,069	101	1	51
Upstate New York	-	17	-	-	1	10	-	4	226	5	-	23
New York City	-	19	-	-	-	17	1	1	1,394	71	-	-
New Jersey	1	33	-	1	-	3	2	6	235	16	-	-
Pennsylvania*	-	-	-	-	-	1	-	4	214	9	1	28
EAST NORTH CENTRAL .....	-	103	-	1	-	13	1	14	1,710	28	3	240
Ohio*	-	31	-	1	-	5	1	14	753	9	-	70
Indiana	-	4	-	-	-	-	-	-	247	4	-	56
Illinois	-	44	-	-	-	2	-	-	27	4	-	44
Michigan	-	21	-	-	-	5	-	-	545	10	-	4
Wisconsin	-	3	-	-	-	1	-	-	138	1	3	66
WEST NORTH CENTRAL .....	-	26	4	16	-	4	-	8	1,053	7	34	652
Minnesota	-	1	-	-	-	-	-	-	197	2	10	140
Iowa	-	3	-	-	-	-	-	1	79	-	10	207
Missouri	-	9	3	14	-	3	-	5	497	3	4	54
North Dakota	-	1	-	-	-	-	-	-	22	-	1	91
South Dakota*	-	2	-	1	-	-	-	1	31	-	-	75
Nebraska	-	-	1	1	-	-	-	-	53	1	-	8
Kansas	-	10	-	-	-	1	-	1	174	1	9	77
SOUTH ATLANTIC .....	2	130	1	8	-	21	16	121	3,490	122	8	207
Delaware	-	1	-	-	-	-	-	1	26	2	-	-
Maryland	-	17	-	-	-	5	-	23	249	9	-	5
District of Columbia	-	10	-	-	-	2	-	-	252	18	-	-
Virginia	1	21	1	6	-	7	3	30	406	22	2	55
West Virginia*	-	10	-	-	-	1	-	1	40	-	-	42
North Carolina	1	19	-	-	-	-	9	46	513	5	-	-
South Carolina	-	-	-	-	-	-	-	11	300	11	-	8
Georgia	-	11	-	1	-	1	4	9	772	28	3	59
Florida	-	41	-	1	-	5	-	-	932	27	3	38
EAST SOUTH CENTRAL .....	1	45	-	3	1	17	1	29	1,827	27	6	470
Kentucky*	-	13	-	-	-	4	-	1	181	7	3	181
Tennessee	-	12	-	2	1	6	1	23	593	10	3	242
Alabama	1	10	-	1	-	2	-	2	786	6	-	46
Mississippi	-	10	-	-	-	5	-	3	267	4	-	1
WEST SOUTH CENTRAL .....	-	99	3	33	-	23	2	23	1,927	57	10	501
Arkansas	-	16	-	20	-	8	-	3	96	-	1	71
Louisiana*	-	13	-	2	-	4	-	-	465	20	2	26
Oklahoma	-	10	3	8	-	1	2	18	274	2	2	212
Texas	-	60	3	3	-	10	-	2	1,092	35	5	192
MOUNTAIN .....	-	17	2	6	1	5	1	3	327	7	6	49
Montana*	-	1	-	-	-	-	1	1	41	-	-	-
Idaho	-	2	-	-	-	-	-	2	14	-	-	-
Wyoming	-	-	-	-	-	-	-	-	10	2	1	1
Colorado	-	5	-	2	-	-	-	-	162	4	-	-
New Mexico	-	1	-	-	-	1	-	-	26	-	4	15
Arizona*	-	8	1	2	-	2	-	-	72	1	1	31
Utah	-	-	1	2	1	2	-	-	2	-	-	1
Nevada	-	-	-	-	-	-	-	-	-	-	-	1
PACIFIC .....	-	92	1	2	2	41	-	-	1,947	92	11	143
Washington*	-	-	-	-	-	2	-	-	209	-	-	-
Oregon	-	4	1	1	-	-	-	-	82	3	-	-
California	-	78	-	-	2	36	-	-	1,582	81	11	136
Alaska	-	-	-	1	-	-	-	-	52	8	-	7
Hawaii	-	10	-	-	-	3	-	-	22	-	-	-
Guam	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	3	15	-	-	-	5	-	-	50	23	4	34
Virgin Islands	-	-	-	-	-	-	-	-	11	-	-	-

\*Delayed reports: Tuberculosis: Me. 1, Ohio delete 1, Ky. 1, Mont. 1, Ariz. delete 1  
Typhoid: Ariz. 1

Gonorrhea: Pa. 865, La. delete 13, Wash. 10

Syphilis: Pa. 13, Ky. 1

Rabies in animals: N.H. 1, S. Dak. 43, W. Va. 2, Ariz. delete 1

# Morbidity and Mortality Weekly Report

**TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING JULY 15, 1972**

Week No.  
28

(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	Under 1 year			All Ages	65 years and over	Under 1 year	
<b>NEW ENGLAND</b>	645	389	22	35	<b>SOUTH ATLANTIC</b>	1,204	644	41	33
Boston, Mass.	173	87	5	13	Atlanta, Ga.	105	55	4	—
Bridgeport, Conn.	51	31	5	2	Baltimore, Md.	255	124	8	2
Cambridge, Mass.	22	16	1	3	Charlotte, N. C.	66	29	4	—
Fall River, Mass.	18	12	2	—	Jacksonville, Fla.	85	43	3	1
Hartford, Conn.	68	43	3	—	Miami, Fla.	102	66	5	3
Lowell, Mass.	28	18	—	3	Norfolk, Va.	72	29	4	2
Lynn, Mass.	33	23	—	2	Richmond, Va.	91	49	2	7
New Bedford, Mass.	20	14	—	1	Savannah, Ga.	42	21	1	3
New Haven, Conn.	50	29	3	2	St. Petersburg, Fla.	79	64	3	1
Providence, R. I.	50	25	—	2	Tampa, Fla.	88	60	2	3
Somerville, Mass.	11	8	—	—	Tampa, Fla.	175	83	2	7
Springfield, Mass.	32	21	2	4	Washington, D. C.	44	21	3	4
Waterbury, Conn.	33	17	—	—	<b>EAST SOUTH CENTRAL</b>	696	387	21	22
Worcester, Mass.	56	45	1	3	Birmingham, Ala.	105	62	1	—
<b>MIDDLE ATLANTIC</b>	3,020	1,763	81	95	Chattanooga, Tenn.	44	25	2	3
Albany, N. Y.	47	26	—	—	Knoxville, Tenn.	37	23	—	—
Allentown, Pa.	30	15	2	1	Louisville, Ky.	110	70	6	5
Buffalo, N. Y.	137	71	5	5	Memphis, Tenn.	186	89	4	2
Camden, N. J.	62	36	3	1	Mobile, Ala.	66	37	3	2
Elizabeth, N. J.	19	13	—	1	Montgomery, Ala.	39	20	—	3
Erie, Pa.	42	27	2	3	Nashville, Tenn.	109	61	5	7
Jersey City, N. J.	54	32	2	4	<b>WEST SOUTH CENTRAL</b>	1,269	662	68	39
Newark, N. J.	85	37	3	2	Austin, Tex.	34	24	1	3
New York City, N. Y.**	1,522	894	36	46	Baton Rouge, La.	45	26	2	3
Paterson, N. J.	36	21	1	4	Corpus Christi, Tex.	26	15	3	—
Philadelphia, Pa.	408	221	14	2	Dallas, Tex.	185	97	7	5
Pittsburgh, Pa.	200	114	8	10	El Paso, Tex.	45	18	2	2
Reading, Pa.	38	30	—	1	Fort Worth, Tex.	86	42	3	3
Rochester, N. Y.	104	70	2	8	Houston, Tex.	267	126	17	8
Schenectady, N. Y.	25	17	1	—	Little Rock, Ark.	50	31	3	2
Scranton, Pa.	37	24	—	3	New Orleans, La.	158	82	11	4
Syracuse, N. Y.	77	46	—	1	Oklahoma City, Okla.**	90	51	5	2
Trenton, N. J.	34	22	1	1	San Antonio, Tex.	169	83	8	1
Utica, N. Y.	32	26	1	2	Shreveport, La.	59	35	1	2
Yonkers, N. Y.	31	21	—	—	Tulsa, Okla.	55	32	5	4
<b>EAST NORTH CENTRAL</b>	2,596	1,459	126	55	<b>MOUNTAIN</b>	518	274	32	21
Akron, Ohio	69	46	3	—	Albuquerque, N. Mex.	72	30	5	3
Canton, Ohio	45	28	2	2	Colorado Springs, Colo.	45	16	2	4
Chicago, Ill.	636	349	39	10	Denver, Colo.	122	70	9	2
Cincinnati, Ohio	156	94	7	4	Ogden, Utah	21	15	1	1
Cleveland, Ohio	214	103	6	1	Phoenix, Ariz.	103	48	8	3
Columbus, Ohio	138	83	6	5	Pueblo, Colo.	29	21	—	3
Dayton, Ohio	112	58	1	1	Salt Lake City, Utah	63	39	4	2
Detroit, Mich.	354	192	12	6	Tucson, Ariz.	63	35	3	3
Evansville, Ind.	31	20	2	1	<b>PACIFIC</b>	1,605	999	41	34
Flint, Mich.**	52	28	4	1	Berkeley, Calif.	21	16	—	—
Fort Wayne, Ind.	41	25	3	3	Fresno, Calif.	51	21	2	2
Gary, Ind.	26	9	2	1	Glendale, Calif.	28	19	—	—
Grand Rapids, Mich.	45	25	—	3	Honolulu, Hawaii**	51	26	3	1
Indianapolis, Ind.	202	106	12	2	Long Beach, Calif.	108	70	2	3
Madison, Wis.	47	24	2	2	Los Angeles, Calif.	405	244	7	6
Milwaukee, Wis.	111	76	6	3	Oakland, Calif.	77	51	3	—
Peoria, Ill.	38	21	6	1	Pasadena, Calif.	26	17	2	1
Rockford, Ill.	37	23	3	1	Portland, Ore.	151	104	4	4
South Bend, Ind.	58	35	1	5	Sacramento, Calif.	66	35	3	—
Toledo, Ohio	122	79	4	3	San Diego, Calif.	108	67	2	2
Youngstown, Ohio	62	35	5	—	San Francisco, Calif.	195	125	6	5
<b>WEST NORTH CENTRAL</b>	784	511	41	20	San Jose, Calif.	40	24	—	2
Des Moines, Iowa	67	54	1	4	Seattle, Wash.	175	110	3	6
Duluth, Minn.	40	26	1	1	Spokane, Wash.	59	41	—	1
Kansas City, Kans.	35	19	7	1	Tacoma, Wash.	44	29	4	1
Kansas City, Mo.	131	90	4	2	<b>Total</b>	12,337	7,088	473	354
Lincoln, Nebr.	21	16	—	—	<b>Expected Number</b>	12,343	6,951	571	411
Minneapolis, Minn.	119	72	9	1	<b>Cumulative Total</b> (includes reported corrections for previous weeks)	361,199	210,874	14,184	15,095
Omaha, Nebr.	64	38	3	—					
St. Louis, Mo.	201	117	12	6					
St. Paul, Minn.	64	46	—	4					
Wichita, Kans.	42	33	4	1					
Las Vegas, Nev.*	16	5	—	2					

\*Mortality data are being collected from Las Vegas, Nev., for possible inclusion in this table, however, for statistical reasons, these data will be listed only and not included in the total, expected number, or cumulative total, until 5 years of data are collected.

\*\*Estimate based on average percent of divisional total

**TRICHINOSIS – Continued**

of June 6, however, the nausea and vomiting became worse, and she was hospitalized.

A complete blood cell count at that time revealed a WBC of 12,000 with 25% eosinophils; stool examinations for ova and parasites were negative. On physical examination, a pelvic mass was palpated, and an emergency abdominal radiograph showed a 4- to 5-month-old intrauterine fetus. Intrauterine infection with *T. spiralis* has been known to cause abortions, but the use of thiabendazole in pregnant women has not been evaluated. Therefore, the decision was made to follow the pregnancy closely without instituting thiabendazole therapy.

In early June, the 5-year-old son experienced nausea, vomiting, fever, sore throat, and earache; however, subsequent examination revealed tonsillitis and otitis with a slight leukopenia (WBC 5,400). No eosinophils were seen.

Epidemiologic investigation revealed that the mother had frequently served pork chops and a meat loaf prepared

from equal portions of ground pork and ground beef. The daughter said her mother often sampled the meat loaf preparation raw to make sure it was fresh. The daughter helped prepare dinner each night, and she also sampled the same raw meats. The stepfather and son always ate their meat thoroughly cooked. The stepfather remained asymptomatic.

The family never ate out nor ate any wild game. They purchased all pork and beef products from either of two grocery stores in St. Louis. Samples of pork were obtained from both stores but were negative for *T. spiralis*. None of the household foods prepared before the mother's illness were available for laboratory examination.

(Reported by Paul Lui, M.D., pathologist, St. Louis, Missouri; Dean Baker, Chief, Food Control, Helen Bruce, M.D., Director, Communicable Disease Control, William Banton, M.D., Commissioner of Health, St. Louis City Division of Health; and an EIS Officer.)

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**INTERNATIONAL NOTES  
QUARANTINE MEASURES**

The following change should be made in the "Supplement – Vaccination Certificate Requirements for International Travel," MMWR, Vol. 20, No. 11:

**Christmas, I. (Indian Ocean)**

Delete all information concerning cholera, and insert: Cholera – A certificate is also required from all countries any parts of which are infected.

The following change should be made in the "Supplement – United States Designated Yellow Fever Vaccination Centers," MMWR, Vol. 21, No. 20 (NOTE: This Supplement was incorrectly numbered as Volume 20.):

**NEW YORK****Jamaica**

Pan American World Airways, Inc.

Change telephone no. to: 212, 632-5552

The Morbidity and Mortality Weekly Report, circulation 28,000, is published by the Center for Disease Control, Atlanta, Ga.

Director, Center for Disease Control  
Director, Epidemiology Program, CDC  
Editor, MMWR  
Managing Editor

David J. Sencer, M.D.  
Philip S. Brachman, M.D.  
Michael B. Gregg, M.D.  
Susan J. Dillon

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 investigation 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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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION  
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