



# Morbidity and Mortality

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EPIDEMIOLOGIC NOTES AND REPORTS

PLAGUE CASE - Navajo Reservation - Kayenta, Arizona

On July 10, an 8-year-old Navajo Indian girl, living near Kayenta, Arizona, developed a febrile illness. On the third day of her illness, she developed a painful left inguinal swelling and was hospitalized at the Tuba City PHS Indian Hospital on July 13 with a clinical diagnosis of bubonic plague. The child was started on tetracycline therapy on admission, and streptomycin was added to the regimen on July 15. She has since shown a gradual but definite improvement in her symptoms.

A culture of a bloody material aspirated from the vicinity of the inguinal adenopathy, that was obtained at the Tuba City PHS Hospital and sent to the Gallup PHS

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Hospital for further analysis, yielded a Gram-negative bipolar organism somewhat atypical, but fluorescent antibody positive for *Pasteurella pestis*. This organism was subsequently identified as *P. pestis* by phage typing.

Investigation of the area around the girl's home in Tsegi Canyon, Arizona, has revealed no evidence of a

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

DISEASE	29th WEEK ENDED		MEDIAN 1963 - 1967	CUMULATIVE, FIRST 29 WEEKS		
	July 20, 1968	July 22, 1967		1968	1967	MEDIAN 1963 - 1967
Aseptic meningitis . . . . .	120	50	51	1,140	1,039	901
Brucellosis . . . . .	6	4	5	106	152	152
Diphtheria . . . . .	-	1	1	90	58	90
Encephalitis, primary:						
Arthropod-borne & unspecified . . . . .	26	33	---	507	748	---
Encephalitis, post-infectious . . . . .	10	16	---	307	511	---
Hepatitis, serum . . . . .	100	40	617	2,303	1,157	23,131
Hepatitis, infectious . . . . .	807	601	3	24,188	21,587	57
Malaria . . . . .	36	28	1,911	1,184	1,098	234,172
Measles (rubeola) . . . . .	276	356	39	18,468	56,052	1,711
Meningococcal infections, total . . . . .	40	30	---	1,769	1,505	---
Civilian . . . . .	36	27	---	1,599	1,397	---
Military . . . . .	4	3	---	170	108	---
Mumps . . . . .	960	---	---	119,335	---	---
Poliomyelitis, total . . . . .	2	2	2	31	15	41
Paralytic . . . . .	2	2	2	31	13	37
Rubella (German measles) . . . . .	353	438	---	41,358	38,319	---
Streptococcal sore throat & scarlet fever . . . . .	4,319	4,707	4,144	270,055	292,106	263,425
Tetanus . . . . .	3	10	8	78	112	132
Tularemia . . . . .	5	6	6	118	92	137
Typhoid fever . . . . .	10	11	11	166	220	209
Typhus, tick-borne (Rky. Mt. spotted fever) . . . . .	18	14	17	118	142	118
Rabies in animals . . . . .	48	109	75	2,083	2,558	2,558

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax: Calif.-1 . . . . .	3	Rabies in man: . . . . .	-
Botulism: . . . . .	3	Rubella, Congenital Syndrome: Ill.-1 . . . . .	4
Leptospirosis: Ohio-1 . . . . .	15	Trichinosis:* Calif.-1, Colo.-1, Mass.-1 . . . . .	40
Plague: . . . . .	1	Typhus, murine: Tex.-3 . . . . .	14
Psittacosis: Calif.-1 . . . . .	28		

\*Delayed reports: Pa. 2 cases 1967, delete 1 case 1968

### PLAGUE CASE – (Continued from front page)

rodent die-off or other possible source for her infection. The girl denied any contact with wild animals, and no evidence of prairie dogs or their burrows was found. Residents of the area deny that prairie dogs have inhabited the area for the past year. Investigations are continuing to

determine the source of the girl's infection.

(Reported by Robert C. Vander Wagen, M.D., Deputy Director, Navajo Indian Health Area Office, Window Rock, Arizona; and Ecological Investigations Program, NCDC, Kansas City, Kansas.)

### FOLLOW-UP PLAGUE – Denver, Colorado

No additional human cases of plague have been reported from Denver (MMWR, Vol. 17, Nos. 27 and 28). To date, of 272 processed dead squirrels, 52 were positive for plague by fluorescent antibody (FA) studies, and 15 of these 52 were also positive on culture. An additional three squirrels that had been negative by FA tests were positive

for *Pasteurella pestis* on culture. Of 50 other mammals tested, none were positive for plague.

(Reported by Cecil S. Mollohan, M.D., M.P.H., Chief, Section of Epidemiology, Colorado Department of Health; and Ecological Investigations Program, NCDC, Kansas City, Kansas.)

### FATAL MALARIA CASE – California

On May 23, 1968, 24 hours after returning from service in Vietnam, a 22-year-old white male American marine, complaining of headache, fatigue, nausea, and vomiting, of 5 days duration, presented himself to the emergency room at a military hospital. He denied any fever. He did not give a history of malaria or other serious illnesses while in Vietnam, and he reported having taken his malaria chemoprophylaxis regularly. On physical examination the patient appeared moderately ill and had a temperature of 102.4°F. There was slight scleral icterus, and the liver was enlarged and mildly tender; there was no splenomegaly. Initial laboratory studies revealed a hematocrit of 47 percent, a bilirubin of 3.2 mg percent, and an SGOT of 262. No malaria parasites were noted at this time on a routine blood smear.

had risen to 37 percent, and his electrolyte abnormalities had been corrected. Examination of blood films at this time revealed only a few malaria parasites. Peritoneal dialysis was discontinued. That evening the patient developed pulmonary edema which responded to treatment with digoxin, morphine, rotating tourniquets, and ethacrynic acid. On the evening of the ninth hospital day, the patient again developed pulmonary edema which did not respond to treatment, and he expired. Three hours prior to his death, his serum potassium level was 6.0 meq/L. No malaria parasites could be found in blood films taken on the day of his death.

Postmortem examination revealed dilatation of both cardiac ventricles, marked pulmonary edema, congestive hepatosplenomegaly, and swollen bile-stained kidneys which showed focal evidence of tubular necrosis. Re-examination of the blood smears obtained on the day of the patient's admission to the hospital revealed the presence of numerous trophozoites of *P. falciparum*.

(Reported by Philip K. Condit, M.D., M.P.H., Chief, Bureau of Communicable Disease Control, California State Department of Public Health; and George I. Smith, Major, U.S. Air Force Medical Corps.)

#### Editorial Note:

This patient developed four complications of falciparum malaria: cerebral involvement, intravascular hemolysis, renal failure, and pulmonary edema. The fact that he died despite a parasitic response to therapy suggests that severe infection with falciparum malaria may produce irreversible tissue damage and emphasizes the importance of prompt diagnosis and treatment of this disease.

The patient was hospitalized with a diagnosis of infectious hepatitis. He experienced daily fever spikes of 104°F. On the sixth hospital day, he became semicomatose; examination of peripheral blood smears then revealed a 70 percent parasitemia with *Plasmodium falciparum*. Laboratory values at that time included the following: hematocrit 26 percent, bilirubin 23.6 per mg percent, BUN 120 mg percent, Na 118 meq/L., K 2.0 meq/L., Cl 64 meq/L., and CO<sub>2</sub> 8 meq/L. Hemoglobin was detected in the urine. Intravenous antimalarial therapy with quinine and chloroquine was immediately instituted. In addition, dexamethasone, heparin, and transfusions of packed red cells were administered. Because of the electrolyte imbalance and progressive azotemia, peritoneal dialysis was instituted on the seventh hospital day. On the eighth day, the patient had once again become lucid, his hematocrit

### OUTBREAK OF TUBERCULOSIS – Buffalo, New York

On January 11, 1968, a 32-year-old woman in Buffalo, New York, was found to have far advanced pulmonary tuberculosis by chest X-ray examination. Microscopic examination and cultures of her sputum were subsequently found positive for *Mycobacterium tuberculosis*.

The woman had been employed since September 13, 1967, as a teacher's assistant in two classes (one morning and one afternoon), located in a church building. She was in close contact with the 26 students, age 3 to 5 years old, in these two classes for 2 1/2 hours each day

while she supervised their play and teaching activities and helped them with their outdoor clothing. She had contact with 29 other students in an adjoining classroom because she frequently led her students through this room to the single restroom, used by both classes. The woman aided all 55 students with their meals. There was limited ventilation in both rooms because windows were closed during the cold weather. The woman left her employment on December 21, 1967, because of her illness.

After tuberculosis was diagnosed in this woman, all 55 students, nine adult school personnel, eight parents and siblings of the school children, and four church employees were tuberculin tested on January 26. An additional 21 close contacts and 14 casual contacts outside the school were tuberculin tested within the following 3 weeks. The Mantoux method with 5 tuberculin units of PPD was used and 10 mm of induration was considered a positive reaction. All students, both teachers, and the other teacher's assistant were considered close contacts to the woman. Her close contacts outside the school either lived in her household or lived elsewhere but had a similar degree of contact. All others with significant contact were considered her casual contacts including the remaining seven adult school personnel.

Of the 111 contacts of the woman, 28 had a positive reaction (Table 1). Based on both a positive tuberculin test and chest X-ray evidence of enlarged hilar lymph nodes, eight new active cases of primary tuberculosis were identified. Two of these were documented tuberculin converters within the previous year; the other six had no record of a previous test. There were three other documented tuberculin converters with negative chest X-rays found on initial testing and one additional converter with a neg-

ative X-ray found on repeat testing 8 weeks later. Three of these six converters were under 5 years of age. Primary tuberculosis, the activity of which could not be determined at the initial examination, was diagnosed in an additional four contacts, and 12 others had inactive or probably inactive tuberculosis. No other converters were identified on retesting in May of the negative contacts although 23 of the 83 negative contacts were not available for reexamination.

The closeness of contact appeared to be related to the incidence of new infection in this outbreak. All eight active primary cases were considered close contacts as were two of the converters without active disease. Four of the active cases were students in the index case's classroom, one was a student in the adjoining classroom, and three were her own children. Based on available attendance records, the duration of contact did not seem to be a factor in the outbreak. Each of the four students with active primary tuberculosis in the source case's room had an average of 142 cumulative hours of contact (range 118 to 162) and the case in the adjoining room had only 36 hours of contact, while each of the 21 tuberculin negative students had an average of 148 cumulative hours of contact (range 87.5 to 180 hours).

It is of interest to note that the index case in this outbreak failed to submit to chest X-ray prior to beginning her teaching duties.

(Reported by William E. Mosher, M.D., M.P.H., Commissioner of Health, and A. Arthur Grabau, M.D., F.C.C.P., Director, Division of Tuberculosis Control, Erie County Department of Health, New York; Tuberculosis Program, NCDC; and a Tuberculosis Medical Officer.)

Table 1  
Contacts of the Teacher's Assistant with a Positive Reaction to Tuberculin Test  
Buffalo, New York - January - May 1968

Age (Years)	Primary Active Cases		Converters		Primary Cases, Activity Undetermined		Inactive or Probably Inactive Cases		Total	
	<5	>5	<5	>5	<5	>5	<5	>5	<5	>5
Close Contacts	6	2	3*	1	2	0	0	2	9	5
Casual Contacts	0	0	0	2	0	2	0	10	0	14
Total	6	2	3*	3	2	2	0	12	9	19

\*Includes 2 cases already classified as primary active cases

#### SUBHUMAN PRIMATE-ASSOCIATED HEPATITIS - Oakland County, Michigan

Between May 10 and June 13, 1968, three animal handlers, who had contact with tropical and exotic animals at an animal brokerage near Detroit, Michigan, developed hepatitis, and a fourth animal handler had possible hepatitis.

The first case was in a 17-year-old male who had onset of illness on May 16. Although he began work at the brokerage on May 2, he had frequent contact with young chimpanzees during visits to the brokerage in April. On June 13 after a 3-week prodrome of headache, fatigue, fever, abdominal pain, and anorexia, he developed jaundice and had abnormal liver function tests. He had not received immune serum globulin (ISG) prior to or after becoming employed at the brokerage.

The second case was in an 18-year-old male who became ill on May 16. He had begun work at the brokerage

February 17 and had not received globulin prophylaxis since his employment. He experienced a 2-week prodrome of headache, malaise, anorexia, and developed dark urine and jaundice on May 31 when liver function tests including an SGOT and LDH were abnormal.

The third case was a 24-year-old male who began work at the brokerage on May 13. He became ill on June 13 with headache, fever, chills, and anorexia. He subsequently developed dark urine which lasted 1 week, but he denied jaundice and yellow sclerae. Tests of liver function were not performed. Prior to working at the brokerage, this patient had been employed as an animal handler at a zoo, and according to zoo policy, he had received ISG in November 1967.

(Continued on page 276)

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
 FOR WEEKS ENDED  
 JULY 20, 1968 AND JULY 22, 1967 (29th WEEK)

AREA	ASEPTIC MENINGITIS		BRUCELLOSIS	DIPHTHERIA	ENCEPHALITIS			HEPATITIS		MALARIA	
	1968	1967			Primary including unsp. cases	Post-Infectious	Serum	Infectious			
								1968	1967		1968
UNITED STATES...	120	50	6	-	26	33	10	100	807	601	36
NEW ENGLAND.....	6	5	1	-	1	3	1	-	38	36	-
Maine.*.....	-	-	-	-	-	-	1	-	-	3	-
New Hampshire.....	-	1	-	-	-	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	-	1	-	-	1	1	-	-	19	13	-
Rhode Island.....	6	2	-	-	-	1	-	-	1	2	-
Connecticut.....	-	1	1	-	-	1	-	-	18	18	-
MIDDLE ATLANTIC.....	18	-	-	-	6	-	-	35	116	78	5
New York City.....	7	-	-	-	2	-	-	23	39	30	-
New York, up-State.....	-	-	-	-	1	-	-	-	24	24	1
New Jersey.....	11	-	-	-	1	-	-	10	26	13	3
Pennsylvania.....	-	-	-	-	2	-	-	2	27	11	1
EAST NORTH CENTRAL...	19	6	-	-	6	10	2	3	95	89	4
Ohio.....	19	-	-	-	5	8	-	1	38	20	-
Indiana.....	-	1	-	-	-	2	-	1	5	8	1
Illinois.....	-	1	-	-	1	-	2	-	22	34	1
Michigan.....	-	4	-	-	-	-	-	1	22	23	2
Wisconsin.....	-	-	-	-	-	-	-	-	8	4	-
WEST NORTH CENTRAL...	4	2	1	-	-	1	1	4	43	55	4
Minnesota.....	4	1	-	-	-	-	-	3	12	8	-
Iowa.....	-	-	-	-	-	-	-	-	6	10	1
Missouri.....	-	-	-	-	-	-	-	1	18	28	-
North Dakota.....	-	-	-	-	-	-	-	-	-	-	-
South Dakota.....	-	-	1	-	-	-	-	-	-	-	-
Nebraska.....	-	-	-	-	-	-	-	-	-	-	-
Kansas.....	-	1	-	-	-	1	1	-	7	9	3
SOUTH ATLANTIC.....	17	3	2	-	1	10	2	6	72	58	7
Delaware.....	-	-	-	-	-	-	-	-	3	2	-
Maryland.....	2	2	-	-	1	1	-	-	14	21	1
Dist. of Columbia..	1	-	-	-	-	-	-	-	1	3	-
Virginia.*.....	13	-	-	-	-	2	-	-	8	6	-
West Virginia.....	1	-	-	-	-	-	-	-	6	2	-
North Carolina.....	-	1	-	-	-	4	-	-	6	8	6
South Carolina.....	-	-	-	-	-	-	-	-	1	1	-
Georgia.....	-	-	2	-	-	-	-	-	14	-	-
Florida.....	-	-	-	-	-	2	2	6	19	15	-
EAST SOUTH CENTRAL...	6	5	-	-	1	1	1	-	70	54	3
Kentucky.....	3	-	-	-	-	1	-	-	24	21	3
Tennessee.....	3	-	-	-	-	-	1	-	26	15	-
Alabama.....	-	5	-	-	-	-	-	-	3	6	-
Mississippi.....	-	-	-	-	1	-	-	-	17	12	-
WEST SOUTH CENTRAL...	18	17	1	-	3	5	1	1	50	65	1
Arkansas.....	-	1	-	-	-	-	-	-	5	3	-
Louisiana.....	3	3	-	-	3	2	-	1	8	15	1
Oklahoma.....	4	1	1	-	-	2	-	-	4	5	-
Texas.....	11	12	-	-	-	1	1	-	33	42	-
MOUNTAIN.....	1	1	-	-	-	1	-	2	41	31	5
Montana.....	1	-	-	-	-	1	-	-	6	3	-
Idaho.....	-	-	-	-	-	-	-	-	2	-	-
Wyoming.....	-	-	-	-	-	-	-	-	2	-	-
Colorado.....	-	-	-	-	-	-	-	2	15	16	5
New Mexico.....	-	-	-	-	-	-	-	-	4	10	-
Arizona.....	-	1	-	-	-	-	-	-	8	-	-
Utah.....	-	-	-	-	-	-	-	-	3	2	-
Nevada.....	-	-	-	-	-	-	-	-	1	-	-
PACIFIC.....	31	11	1	-	8	2	2	49	282	135	7
Washington.....	2	-	-	-	1	-	-	-	23	2	-
Oregon.....	4	-	-	-	1	-	-	2	26	8	-
California.....	25	9	1	-	6	2	2	46	232	121	4
Alaska.....	-	-	-	-	-	-	-	-	1	-	-
Hawaii.....	-	2	-	-	-	-	-	1	-	4	3
Puerto Rico.*.....	-	-	-	-	-	-	-	5	16	7	-

\* Delayed reports: Brucellosis: Va. delete 1  
 Hepatitis, infectious: Me. 1, P.R. 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDED  
JULY 20, 1968 AND JULY 22, 1967 (29th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS	POLIOMYELITIS			RUBELLA
	Cumulative			Cumulative				Total	Paralytic		
	1968	1968	1967	1968	1968	1967			1968	1968	
UNITED STATES...	276	18,468	56,052	40	1,769	1,505	960	2	2	31	353
NEW ENGLAND.....	20	1,116	800	2	90	58	112	-	-	1	58
Maine.*.....	-	35	233	-	6	3	-	-	-	-	3
New Hampshire.....	-	141	74	-	7	2	1	-	-	-	-
Vermont.....	1	2	34	-	1	-	-	-	-	-	-
Massachusetts.*....	10	358	312	2	40	29	83	-	-	1	35
Rhode Island.....	-	1	60	-	7	4	16	-	-	-	9
Connecticut.....	9	579	87	-	29	20	12	-	-	-	11
MIDDLE ATLANTIC.....	104	3,630	2,156	15	319	241	115	-	-	-	59
New York City.....	84	1,719	417	2	67	40	97	-	-	-	45
New York, Up-State.*	9	1,164	538	6	54	59	NN	-	-	-	13
New Jersey.....	6	596	477	5	116	86	18	-	-	-	1
Pennsylvania.....	5	151	724	2	82	56	NN	-	-	-	-
EAST NORTH CENTRAL...	29	3,568	5,077	3	212	194	235	-	-	1	61
Ohio.....	4	283	1,118	2	58	67	13	-	-	-	5
Indiana.....	4	620	584	-	28	21	-	-	-	-	11
Illinois.....	11	1,330	879	-	47	45	21	-	-	1	12
Michigan.....	-	238	878	-	61	46	25	-	-	-	5
Wisconsin.....	10	1,097	1,618	1	18	15	176	-	-	-	28
WEST NORTH CENTRAL...	5	366	2,792	3	89	64	41	-	-	1	22
Minnesota.....	-	15	128	2	21	16	-	-	-	-	-
Iowa.....	1	94	743	-	6	12	19	-	-	-	10
Missouri.....	1	81	330	-	31	12	9	-	-	1	8
North Dakota.....	1	124	825	-	3	1	9	-	-	-	3
South Dakota.....	-	4	52	-	4	6	NN	-	-	-	-
Nebraska.....	2	38	621	-	6	11	4	-	-	-	1
Kansas.....	-	10	93	1	18	6	-	-	-	-	-
SOUTH ATLANTIC.....	33	1,404	6,668	9	360	290	95	-	-	1	22
Delaware.....	1	15	43	1	7	5	3	-	-	-	-
Maryland.....	3	85	145	-	26	34	17	-	-	-	1
Dist. of Columbia..	-	6	22	1	14	10	-	-	-	-	-
Virginia.....	1	290	2,090	-	28	35	17	-	-	-	6
West Virginia.....	9	258	1,342	-	9	20	39	-	-	-	15
North Carolina.....	-	281	838	4	73	63	NN	-	-	1	-
South Carolina.....	-	13	504	1	56	27	-	-	-	-	-
Georgia.....	-	4	32	-	61	44	-	-	-	-	-
Florida.....	19	452	1,652	2	86	52	19	-	-	-	-
EAST SOUTH CENTRAL...	3	541	5,045	1	149	122	85	-	-	1	36
Kentucky.....	3	172	1,298	1	58	34	5	-	-	1	22
Tennessee.....	-	55	1,785	-	49	50	69	-	-	-	13
Alabama.....	-	85	1,307	-	22	25	11	-	-	-	1
Mississippi.....	-	229	655	-	20	13	-	-	-	-	-
WEST SOUTH CENTRAL...	59	4,538	16,953	3	290	211	-	1	1	17	38
Arkansas.....	1	3	1,404	-	20	28	-	-	-	-	1
Louisiana.....	-	2	149	-	81	82	-	-	-	-	-
Oklahoma.....	-	110	3,320	-	49	16	-	-	-	1	-
Texas.....	58	4,423	12,080	3	140	85	-	1	1	16	37
MOUNTAIN.....	10	948	4,509	-	27	26	104	-	-	-	21
Montana.....	-	66	275	-	3	-	6	-	-	-	1
Idaho.....	-	20	374	-	11	1	7	-	-	-	1
Wyoming.....	1	51	178	-	-	1	-	-	-	-	-
Colorado.....	2	481	1,502	-	8	11	23	-	-	-	3
New Mexico.....	3	88	573	-	-	3	5	-	-	-	-
Arizona.....	4	216	983	-	1	4	24	-	-	-	14
Utah.....	-	21	355	-	1	4	39	-	-	-	2
Nevada.....	-	5	269	-	3	2	-	-	-	-	-
PACIFIC.....	13	2,357	12,052	4	233	299	173	1	1	9	36
Washington.....	-	514	5,391	-	37	25	12	1	1	1	2
Oregon.....	3	457	1,523	1	18	24	15	-	-	-	11
California.....	9	1,349	4,856	3	165	237	127	-	-	8	19
Alaska.....	-	2	130	-	2	9	11	-	-	-	2
Hawaii.....	1	35	152	-	11	4	8	-	-	-	2
Puerto Rico.....	7	354	2,049	-	19	10	12	-	-	-	4

\* Delayed reports: Measles: Mass. delete 4, N. Y. Ups. 1 case 1967, 6 cases 1968  
Mumps: Me. 6  
Rubella: Me. 8, N. Y. Ups. 73

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDED  
JULY 20, 1968 AND JULY 22, 1967 (29th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
		1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968	1968
UNITED STATES...	4,319	3	78	5	118	10	166	18	118	48	2,083
NEW ENGLAND.....	534	1	2	-	46	-	5	-	-	-	65
Maine..*.....	3	-	-	-	-	-	-	-	-	-	50
New Hampshire.....	5	-	-	-	-	-	1	-	-	-	2
Vermont.....	19	-	-	-	46	-	-	-	-	-	10
Massachusetts.....	43	1	1	-	-	-	2	-	-	-	2
Rhode Island.....	52	-	-	-	-	-	-	-	-	-	-
Connecticut.....	412	-	1	-	-	-	2	-	-	-	1
MIDDLE ATLANTIC.....	116	2	12	-	7	-	13	-	7	2	22
New York City.....	5	1	6	-	-	-	7	-	-	-	-
New York, Up-State*	102	-	4	-	7	-	3	-	1	1	15
New Jersey.....	NN	-	-	-	-	-	-	-	1	-	-
Pennsylvania.....	9	1	2	-	-	-	3	-	5	1	7
EAST NORTH CENTRAL...	381	-	8	1	8	1	25	1	4	8	192
Ohio..*.....	46	-	-	-	1	1	12	-	2	3	75
Indiana.....	150	-	1	-	1	-	3	-	-	5	65
Illinois.....	84	-	5	1	5	-	9	1	2	-	23
Michigan.....	52	-	2	-	1	-	-	-	-	-	9
Wisconsin.....	49	-	-	-	-	-	1	-	-	-	20
WEST NORTH CENTRAL...	160	-	3	1	9	-	8	-	3	10	515
Minnesota.....	19	-	1	-	-	-	-	-	-	6	142
Iowa.....	10	-	-	-	-	-	1	-	-	-	86
Missouri.....	7	-	2	1	7	-	3	-	1	1	77
North Dakota.....	57	-	-	-	-	-	-	-	-	2	82
South Dakota.*.....	8	-	-	-	1	-	1	-	1	-	79
Nebraska.....	59	-	-	-	-	-	3	-	1	-	23
Kansas.....	-	-	-	-	1	-	-	-	-	1	26
SOUTH ATLANTIC.....	446	-	14	-	7	2	41	11	65	2	222
Delaware.....	1	-	-	-	-	-	-	-	-	-	-
Maryland.....	58	-	1	-	-	1	8	1	7	1	4
Dist. of Columbia..	9	-	1	-	-	-	2	-	-	-	-
Virginia.*.....	112	-	2	-	1	-	8	2	24	-	87
West Virginia.....	161	-	1	-	-	-	-	-	-	-	29
North Carolina.....	3	-	2	-	2	-	2	5	21	-	9
South Carolina.....	7	-	1	-	-	-	-	-	2	-	-
Georgia.....	1	-	-	-	2	1	10	3	9	1	34
Florida.....	94	-	6	-	2	-	11	-	2	-	59
EAST SOUTH CENTRAL...	638	-	9	-	6	2	21	5	22	6	474
Kentucky.....	77	-	1	-	1	-	5	3	6	4	231
Tennessee.....	508	-	2	-	4	-	11	2	14	2	221
Alabama.....	33	-	3	-	-	-	-	-	1	-	21
Mississippi.....	20	-	3	-	1	2	5	-	1	-	1
WEST SOUTH CENTRAL...	599	-	16	2	28	3	17	1	14	9	370
Arkansas.....	4	-	4	-	5	1	4	-	1	1	43
Louisiana.....	7	-	5	-	5	1	3	-	-	1	34
Oklahoma.....	14	-	-	-	6	-	4	1	7	2	109
Texas.....	574	-	7	2	12	1	6	-	6	5	184
MOUNTAIN.....	916	-	-	1	6	-	9	-	2	1	52
Montana.....	18	-	-	-	-	-	-	-	-	-	-
Idaho.....	95	-	-	-	-	-	-	-	-	-	-
Wyoming.....	7	-	-	-	1	-	1	-	-	-	2
Colorado.....	503	-	-	1	3	-	2	-	2	-	3
New Mexico.....	110	-	-	-	-	-	6	-	-	-	20
Arizona.....	29	-	-	-	-	-	-	-	-	1	27
Utah.....	154	-	-	-	2	-	-	-	-	-	-
Nevada.*.....	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	529	-	14	-	1	2	27	-	1	10	171
Washington.....	11	-	1	-	-	1	1	-	-	-	-
Oregon.....	74	-	1	-	1	-	3	-	-	-	3
California.....	360	-	12	-	-	1	23	-	1	10	168
Alaska.....	19	-	-	-	-	-	-	-	-	-	-
Hawaii.....	65	-	-	-	-	-	-	-	-	-	-
Puerto Rico.....	5	1	6	-	-	-	1	-	-	-	16

\* Delayed reports: SST: Me. 2, N. Y. Ups. 25 cases 1967, 119 cases 1968, Ohio delete 1, Va. 1, Nev. 6  
Rabies in animals: S. D. 45

Week No.  
29

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED JULY 20, 1968

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

Area	All Causes		Pneumonia and Influenza All Ages	Under 1 year All Causes	Area	All Causes		Pneumonia and Influenza All Ages	Under 1 year All Causes
	All Ages	65 years and over				All Ages	65 years and over		
<b>NEW ENGLAND:</b>	711	442	43	33	<b>SOUTH ATLANTIC:</b>	1,119	539	43	70
Boston, Mass.-----	222	132	20	8	Atlanta, Ga.-----	109	56	3	3
Bridgeport, Conn.-----	43	28	5	3	Baltimore, Md.-----	242	107	4	19
Cambridge, Mass.-----	26	18	-	2	Charlotte, N. C.-----	53	25	3	1
Fall River, Mass.-----	33	25	-	-	Jacksonville, Fla.-----	50	29	1	3
Hartford, Conn.-----	51	28	-	4	Miami, Fla.-----	122	60	2	4
Lowell, Mass.-----	35	18	1	2	Norfolk, Va.-----	53	28	4	1
Lynn, Mass.-----	16	14	-	-	Richmond, Va.-----	75	39	6	4
New Bedford, Mass.-----	26	16	-	2	Savannah, Ga.-----	24	8	1	4
New Haven, Conn.-----	42	23	1	-	St. Petersburg, Fla.-----	64	51	3	-
Providence, R. I.-----	65	35	2	5	Tampa, Fla.-----	53	28	10	2
Somerville, Mass.-----	14	8	-	-	Washington, D. C.-----	244	93	4	29
Springfield, Mass.-----	50	40	7	1	Wilmington, Del.-----	30	15	2	-
Waterbury, Conn.-----	27	16	1	2	<b>EAST SOUTH CENTRAL:</b>	642	336	31	31
Worcester, Mass.-----	61	41	6	4	Birmingham, Ala.-----	88	48	1	5
<b>MIDDLE ATLANTIC:</b>	3,516	2,127	138	149	Chattanooga, Tenn.-----	66	36	3	4
Albany, N. Y.-----	70	45	2	2	Knoxville, Tenn.-----	38	25	6	1
Allentown, Pa.-----	43	27	1	3	Louisville, Ky.-----	138	76	7	4
Buffalo, N. Y.-----	167	99	6	10	Memphis, Tenn.-----	126	64	6	6
Camden, N. J.-----	45	29	1	2	Mobile, Ala.-----	42	21	-	4
Elizabeth, N. J.-----	32	15	-	-	Montgomery, Ala.-----	39	20	4	2
Erie, Pa.-----	50	26	1	3	Nashville, Tenn.-----	105	46	4	5
Jersey City, N. J.-----	65	38	2	5	<b>WEST SOUTH CENTRAL:</b>	1,077	577	40	57
Newark, N. J.-----	99	48	6	2	Austin, Tex.-----	51	31	11	3
New York City, N. Y.-----	1,687	1,037	73	53	Baton Rouge, La.-----	38	19	-	-
Paterson, N. J.-----	36	22	2	3	Corpus Christi, Tex.-----	21	11	2	1
Philadelphia, Pa.-----	581	329	17	44	Dallas, Tex.-----	152	84	4	10
Pittsburgh, Pa.-----	183	101	10	5	El Paso, Tex.-----	32	14	-	1
Reading, Pa.-----	41	26	2	2	Fort Worth, Tex.-----	78	43	-	5
Rochester, N. Y.-----	143	95	5	5	Houston, Tex.-----	195	99	3	16
Schenectady, N. Y.-----	25	20	-	1	Little Rock, Ark.-----	58	28	5	8
Scranton, Pa.-----	52	41	5	2	New Orleans, La.-----	137	64	1	6
Syracuse, N. Y.-----	89	63	2	3	Oklahoma City, Okla.-----	82	46	-	-
Trenton, N. J.-----	38	17	2	1	San Antonio, Tex.-----	107	63	1	3
Utica, N. Y.-----	31	19	1	-	Shreveport, La.-----	63	32	6	3
Yonkers, N. Y.-----	39	30	-	3	Tulsa, Okla.-----	63	43	7	1
<b>EAST NORTH CENTRAL:</b>	2,516	1,460	72	111	<b>MOUNTAIN:</b>	418	225	23	33
Akron, Ohio-----	69	42	-	4	Albuquerque, N. Mex.-----	44	18	6	7
Canton, Ohio-----	40	23	4	-	Colorado Springs, Colo.-----	26	19	3	2
Chicago, Ill.-----	775	422	18	37	Denver, Colo.-----	125	68	5	14
Cincinnati, Ohio-----	144	86	1	2	Ogden, Utah-----	12	7	1	1
Cleveland, Ohio-----	182	94	5	9	Phoenix, Ariz.-----	85	42	1	2
Columbus, Ohio-----	132	72	4	8	Pueblo, Colo.-----	26	15	2	2
Dayton, Ohio-----	75	46	3	3	Salt Lake City, Utah-----	59	34	1	4
Detroit, Mich.-----	332	185	8	16	Tucson, Ariz.-----	41	22	4	1
Evansville, Ind.-----	22	18	3	-	<b>PACIFIC:</b>	1,594	951	28	70
Flint, Mich.-----	49	28	3	1	Berkeley, Calif.-----	20	16	-	1
Fort Wayne, Ind.-----	39	27	1	1	Fresno, Calif.-----	65	38	1	1
Gary, Ind.-----	42	26	3	3	Glendale, Calif.-----	33	20	-	1
Grand Rapids, Mich.-----	51	30	3	6	Honolulu, Hawaii-----	50	22	1	7
Indianapolis, Ind.-----	151	88	3	13	Long Beach, Calif.-----	100	63	4	1
Madison, Wis.-----	42	27	1	1	Los Angeles, Calif.-----	521	321	9	21
Milwaukee, Wis.-----	108	80	1	3	Oakland, Calif.-----	71	35	1	2
Peoria, Ill.-----	39	26	-	-	Pasadena, Calif.-----	44	28	-	1
Rockford, Ill.-----	32	19	2	1	Portland, Oreg.-----	124	79	3	9
South Bend, Ind.-----	40	27	3	-	Sacramento, Calif.-----	55	32	-	3
Toledo, Ohio-----	93	57	3	1	San Diego, Calif.-----	92	54	-	4
Youngstown, Ohio-----	59	37	3	2	San Francisco, Calif.-----	143	79	2	6
<b>WEST NORTH CENTRAL:</b>	831	471	32	55	San Jose, Calif.-----	35	19	-	2
Des Moines, Iowa-----	50	31	4	2	Seattle, Wash.-----	154	81	6	9
Duluth, Minn.-----	22	15	4	-	Spokane, Wash.-----	52	40	1	1
Kansas City, Kans.-----	34	13	2	7	Tacoma, Wash.-----	35	24	-	1
Kansas City, Mo.-----	136	82	3	9	<b>Total</b>	<b>12,424</b>	<b>7,128</b>	<b>450</b>	<b>609</b>
Lincoln, Nebr.-----	30	15	1	2	Cumulative Totals including reported corrections for previous weeks				
Minneapolis, Minn.-----	128	74	3	7	All Causes, All Ages -----	376,694			
Omaha, Nebr.-----	65	39	1	5	All Causes, Age 65 and over-----	218,743			
St. Louis, Mo.-----	239	127	4	12	Pneumonia and Influenza, All Ages-----	16,080			
St. Paul, Minn.-----	54	32	3	3	All Causes, Under 1 Year of Age-----	17,396			
Wichita, Kans.-----	73	43	7	8					

HEPATITIS - (Continued from page 271)

All three patients denied ingestion of raw shellfish or contact with a known hepatitis case during the 2 months prior to their illnesses. All three gave no history of transfusions of blood or blood products or use of parenteral drugs in the 6 months prior to illness.

There was a fourth possible hepatitis case in a 17-year-old male who began work at the brokerage in January 1968 and who became ill on June 11 with nausea, vomiting, and diarrhea. He subsequently developed fatigue, loss of taste for cigarettes, and anorexia. He denied dark urine and jaundice, and although he was hospitalized for 4 days beginning June 13, bilirubin and transaminase determinations were not performed. He had received 10 cc of gamma globulin in February 1968.

The four handlers had been responsible for the care and cleaning of all animals housed at the brokerage. Primates housed at the brokerage comprised a variety of species, including chimpanzees (implicated in previous hepatitis outbreaks<sup>1</sup>), Celebes apes, and woolly monkeys. No cases of jaundice had occurred among the chimpanzees and other primates at the brokerage, and there had not been a higher than expected death rate among the animals.

Prior to these four cases, five cases of hepatitis with jaundice had occurred among the owners and employees of the brokerage. These cases occurred between 1960 when the brokerage entered into chimpanzee importation and supply and June 1966 when the brokerage began administering ISG at 3- to 4-month intervals to all employees. However, since January 1968, ISG had not been regularly administered to personnel at the brokerage.

(Reported by Thomas McInerney, M.D., Physician, William Beaumont Hospital; Frank Condon, M.D., M.P.H., Deputy Director, and Theodore M. Barr, D.V.M., Veterinarian, Oakland County Health Department; Donald B. Coohon, D.V.M., Deputy Chief, Bureau of Epidemiology, Michigan State Department of Public Health; and an EIS Officer.)

Reference:

<sup>1</sup>Hillis, William D.: An Outbreak of Infectious Hepatitis Among Chimpanzee Handlers at a United States Air Force Base. Amer J Hyg 73 (3):316-328, 1961.

CURRENT TRENDS  
ARBOVIRUS DISEASE - United States

No human cases of arbovirus disease have been reported to NCDC to date in 1968; however, arboviruses, known to cause disease in man, have been isolated from mosquitos in Wisconsin (California Group virus) and west Texas (Western equine encephalitis virus). Cases of equine encephalitis have been reported from Arkansas, California, North Carolina, and Texas, although in most cases the etiology has not been determined.

Because of the unusual amount of rainfall noted this spring and subsequent increase in the mosquito population and the presence of a susceptible vertebrate host reservoir, conditions now exist that favor an outbreak of arbovirus infection.

(Reported by Arkansas State Board of Health; California State Department of Public Health; North Carolina State Board of Health; Texas State Department of Health; Wisconsin State Department of Health and Social Services; and Laboratory Program and Epidemiology Program, NCDC.)

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 17,000, IS PUBLISHED AT THE NATIONAL COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

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MORBIDITY AND MORTALITY WEEKLY REPORT

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