

Morbidity and Mortality



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REPORT

For
Week Ending
August 1, 1970

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE / PUBLIC HEALTH SERVICE HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION
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EPIDEMIOLOGIC NOTES AND REPORTS HUMAN RABIES - Arizona and South Dakota

Two unrelated fatal cases of human rabies were recently reported to the CDC: one from Arizona and one from South Dakota.

Case 1: At 1 a.m. on June 29 near McNary, in the Mogollon Rim area of Arizona, a skunk entered the tent and sleeping bag of an 11-year-old boy and bit him four times on the right shoulder and left hand. The skunk was captured and on July 1 was found to be rabid by the fluorescent antibody (FRA) test. On July 2 the boy was begun on the 14-dose series of duck embryo rabies vaccine. He also received one dose of tetanus toxoid initially.

On July 22 he developed stiff neck, sore throat, and malaise. He was admitted with these complaints to the Tucson Medical Center on July 26. One day after admission, paresthesia developed in his left hand. In the hos-

CONTENTS

Epidemiologic Notes and Reports	
Human Rabies - Arizona and South Dakota	293
Fatal Shipboard Malaria - Virginia	294
Salmonellosis - Clarksville, Tennessee	295
International Notes	
Quarantine Measures	296
Surveillance Summary	
Leptospirosis - 1969	297
Current Trends	
Plague - United States	298

AUG 6 1970

pital his temperature fluctuated between 98 and 105°F., and progressive weakness of the left arm, fatigue, dysphagia, dysarthria, and focal rhythmic motor activity developed. On July 29 he lapsed into coma, and in the early morning of July 30 he died.

(Continued on page 294)

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

DISEASE	30th WEEK ENDED		MEDIAN 1965 - 1969	CUMULATIVE, FIRST 30 WEEKS		
	August 1, 1970	July 26, 1969		1970	1969	MEDIAN 1965 - 1969
Aseptic meningitis	159	105	87	1,485	1,098	1,098
Brucellosis	4	7	5	120	130	130
Diphtheria	2	3	2	192	84	88
Encephalitis, primary:						
Arthropod-borne & unspecified	44	22	34	682	577	782
Encephalitis, post-infectious	7	5	16	281	190	470
Hepatitis, serum	118	100	697	4,090	2,967	23,441
Hepatitis, infectious	1,280	843		32,185	26,692	
Malaria	64	51	28	1,990	1,548	1,149
Measles (rubeola)	393	259	286	38,231	19,308	56,338
Meningococcal infections, total	40	34	34	1,683	2,166	2,127
Civilian	35	33	34	1,509	1,968	1,952
Military	5	1	1	174	198	175
Mumps	799	780	---	71,745	64,586	---
Poliomyelitis, total	2	1	1	17	6	29
Paralytic	2	1	1	17	6	25
Rubella (German measles)	251	422	---	47,793	46,987	---
Tetanus	3	5	5	64	79	92
Tularemia	5	6	4	76	86	96
Typhoid fever	5	7	7	148	156	194
Typhus, tick-borne (Rky. Mt. spotted fever)	25	31	16	200	258	153
Rabies in animals	55	76	77	1,832	2,158	2,532

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Psittacosis: Mich.-1, Minn.-1	21
Botulism:	5	Rabies in Man:	—
Leptosy: La.-1, Tex.-2	77	Rubella congenital syndrome: Cal.-1	43
Leptospirosis:	21	Trichinosis:	59
Plague:	6	Typhus, murine: Tex.-1	24

*Delayed Reports: Leptospirosis: Iowa 1

HUMAN RABIES - (Continued from front page)

Laboratory tests of serum obtained from the patient on July 26 showed a rabies antibody titer of 1:64. Sections of brain examined postmortem were positive by the FRA technique.

Epidemiologic investigation showed that specimens of four other skunks submitted to the Arizona laboratory this year from the same camping area where the patient had been bitten were positive for rabies. There has been a 3-fold increase in the number of animal specimens positive for rabies submitted to the laboratory this year from the Mogollon Rim area in central Arizona.

A prevalence study of skunk rabies in central Arizona is underway in conjunction with the state health department and the state and federal fish and wildlife services. **Case 2:** On June 23, 1970, a 4-year-old boy in Chamberlain, South Dakota, was severely bitten about the upper extremities by a wild skunk which had been living in his backyard and had recently had a litter. The child's mother had considerable difficulty in dislodging the skunk and finally had to hit it over the head with a pipe. The child was immediately taken to a physician who cleaned the wounds, administered equine rabies antiserum, and began the 14-day course of duck embryo vaccine. The course of therapy was complicated by the development of giant urticaria after the 10th and 11th doses, which responded to small doses of steroids and antihistamines. The subsequent doses were well tolerated. He remained well until July 26 when he developed intermittent headache. On July 28 he developed sore throat and fever and was noted to have a markedly injected posterior pharynx and swelling in the area of the left submaxillary gland when seen by his physician on the following day. He was started on antibiotics. He was hospitalized on July 30 with the appearance of nuchal rigidity and signs of pulmonary congestion. Increasing lethargy and disorientation on the next day and increasing pulmonary congestion prompted his transfer to a hospital in Sioux Falls, South Dakota, where tracheostomy and ventilatory assistance were required. Progressively deepening coma led to death on August 2. Postmortem examination of the brain at the state laboratories revealed Negri bodies, and fluorescent antibody staining for rabies virus was also strongly positive. (Reported by Louis C. Kossuth, M.D., Commissioner of Health, Philip M. Hotchkiss, D.V.M., Acting Assistant Commissioner of Health for Epidemiology, and H. G. Credilius, Ph.D., Director of Laboratories, Arizona State

Department of Health; Clarence Robbins, M.D., Tuberculosis Control Officer, Pima County Health Department; Vincent Fulginiti, M.D., Professor of Pediatrics, University of Arizona College of Medicine; L. W. Holland, M.D., Attending Physician, Chamberlain; Harry Farrell, M.D., Attending Physician, Sioux Falls; John S. Barlow, M.D., Pathologist, Sioux Valley; Robert Hayes, M.D., State Health Officer, and B. E. Diamond, Director of Laboratories, South Dakota State Department of Health; and two EIS Officers).

Editorial Comment (1):

These two cases serve to emphasize the continual risk to the general population of rabies exposure by contact with wildlife reservoirs. Even though there have been only 11 cases in humans in the past 7 years, some 30,000 persons each year receive rabies post-exposure prophylaxis.

In the United States, the number of cases of rabies in wild animals has exceeded those in domestic animals each year since 1959. Since 1964, wild animals have accounted for approximately two-thirds of the total animal cases reported each year. Skunks, foxes, bats, and raccoons are the major wildlife reservoirs in the United States. In 1969, there were 2,672 cases of rabies reported in wild animals (76 percent of the total), including 1,156 skunks, 888 foxes, and 321 bats. Skunks have been the most frequently infected species since 1961. In 1969 rabid skunks were reported in 32 states and accounted for 43 percent of the wildlife cases for that year.

The increase in wildlife rabies, especially in skunks, has resulted in an increase in the risk of human exposure from wild animal bites. Since 1950 there have been 24 human rabies cases in the United States resulting from the bites of rabid wildlife: nine from skunks, seven from foxes, six from bats, and one from a bobcat.

The risk of rabies from wild animals is not limited to exposures incurred in the field. Wild animals trapped and sold as pets have on several occasions been responsible for human exposures (MMWR, Vol. 19, Nos. 28 and 29).

The Recommendation of the Public Health Service Advisory Committee on Immunization Practices for the management of possible rabies exposure was published in MMWR, Vol. 18, No. 43.

References

1. National Communicable Disease Center: Zoonoses Surveillance - Annual Rabies Summary, 1969

FATAL SHIPBOARD MALARIA - Virginia

On July 20, 1970, a Norwegian bulk cargo ship made a radio request to the Foreign Quarantine Program, CDC, for medical assistance for two seamen who became ill while crossing the Atlantic. The ship departed from Takoradi, Ghana, on July 6 after a 6-day stay, made a 4-hour stop at Cape Verde Islands for refueling on July 11, and docked

at Newport News, Virginia, on July 21, where the ill crewmen were admitted to a local hospital.

The first patient, the chief officer, a 45-year-old Norwegian, experienced vomiting and right upper quadrant abdominal and right costovertebral angle pain radiating to the right leg on July 16. On the following day a high fever

began, and he was treated with aspirin and opium tablets. On July 19 his fever subsided and he felt better, but he fainted when he attempted to return to his duties. On July 20 the fever resumed, and he complained of back pain.

On admission to the hospital he complained of weakness, nausea, diarrhea, headaches, fever, and right upper quadrant pain. His temperature was 105°F., and he appeared slightly dehydrated and icteric. Hepatosplenomegaly was not observed. The initial impression was acute infectious hepatitis, and intravenous fluid therapy was begun. On July 22 while examining a routine peripheral blood smear, a medical technologist observed that approximately 75 percent of the red cells contained trophozoites of *Plasmodium falciparum*. Some cells contained as many as four ring forms, and an occasional cell with schizonts was seen. Therapy was begun with intravenous quinine hydrochloride and intravenous corticosteroids. On the following day he became stuporous, then comatose, uremic, and oliguric. Pulmonary edema developed, and small ecchymotic patches were seen in the posterior pharynx. Quinine was discontinued; he was given intramuscular chloroquine hydrochloride, digitalis, and diuretics, and peritoneal dialysis was initiated. In spite of these measures, the patient died early on July 24.

On the same day as the first patient, a 29-year-old Spanish seaman experienced onset of a similar illness, characterized by headache, back pain, fever, and nausea. At the time of admission to the hospital his temperature was 104°F., and he complained of right upper quadrant tenderness. He also was diagnosed initially as having infectious hepatitis and received the same therapy as the first patient. On July 22 he became disoriented, hypotensive, uremic, and oliguric. His peripheral smear also was found to contain red cells heavily parasitized with

P. falciparum. Therapy was begun with quinine, corticosteroids, mannitol, diuretics, and aramine. On July 23 he became comatose, and chloroquine was substituted for quinine. On July 24 the percentage of parasitized red blood cells had fallen from 50 to 10 percent. His hemoglobin fell to 3.6 gm percent, albumin 1.6 g percent, and sodium 119 mEq/L. Edema and a rigid, tender abdomen were noted. On July 28 the patient became alert, and his parasitemia had decreased to less than 1 percent of the red blood cells.

The ship proceeded from Newport News to New Orleans, Louisiana, before the diagnosis of falciparum malaria had been established. The ship was boarded by public health personnel in New Orleans, but no further illnesses were encountered. Thick smears on all remaining crew members were negative for malaria parasites.

(Reported by Ralph Price, M.D., and Grover Thompkins, M.D., Physicians, Newport News, Virginia; H. E. Gillespie, M.D., Director, Bureau of Epidemiology, Virginia State Department of Health; Charles T. Caraway, D.V.M., Chief, Section of Epidemiology, Louisiana State Department of Health; the Foreign Quarantine Program, CDC; and two EIS Officers.)

Editorial Comment:

Ghana was the only African country visited by this ship in the past 5 months. The time period from this visit to the onset of both illnesses is within the usual range of 7 to 27 days for incubation of falciparum malaria.

This is the second malaria fatality reported in 1970 in the United States. Both were in Norwegian seamen whose ships had visited ports in West Africa and then sailed to the east coast of the United States. No malarial chemosuppressives had been taken by crew members of either ship.

SALMONELLOSIS - Clarksville, Tennessee

On July 6, 1970, an outbreak of febrile gastroenteritis was reported to health officials in Clarksville, Montgomery County, Tennessee. At least 303 persons were known to have developed symptoms of acute febrile gastroenteritis including diarrhea (87 percent), abdominal cramps (70 percent), temperature above 101°F. (68 percent), nausea (53 percent), vomiting (53 percent), chills (38 percent), headache (36 percent), and bloody diarrhea (4 percent). Fifty-four persons were hospitalized. There were 12 secondary cases including three nurses who had cared for the hospitalized persons. There were no deaths. *Salmonella thompson* was cultured from the stools of 17 of the hospitalized patients.

Questioning of a group of hospitalized patients revealed that all had consumed barbecued pork prepared by a local restaurant on the July Fourth weekend. Of 189 individuals interviewed who were exposed to barbecued pork, 166 had eaten the meat; 80 percent of these became ill. The mean incubation period was 40 hours (Figure 1).

Rectal cultures were obtained from 151 of the 189 persons interviewed. Of these 106 (70 percent) were posi-

tive for *S. thompson*. Only four isolates were recovered from asymptomatic individuals. Blood for serologic study was also obtained. Titers of agglutinating antibodies were determined using an antigen prepared from an isolate of *S. thompson* recovered from one of the hospitalized patients. Seropositivity correlated directly with bacteriologic results. Agglutinating antibodies were present in significantly higher titer in persons who consumed the meat and became clinically ill than in those persons who ate the meat and did not report illness.

The barbecued pork was further implicated as the vehicle of infection in that only family members who consumed barbecue became ill; members who did not consume the meat remained well. One individual reported that two of his dogs died after eating leftover barbecue, but the third animal, not fed barbecue, remained well. Finally, high coliform counts were determined in the meat by the state laboratory, and *S. thompson* was recovered from the meat.

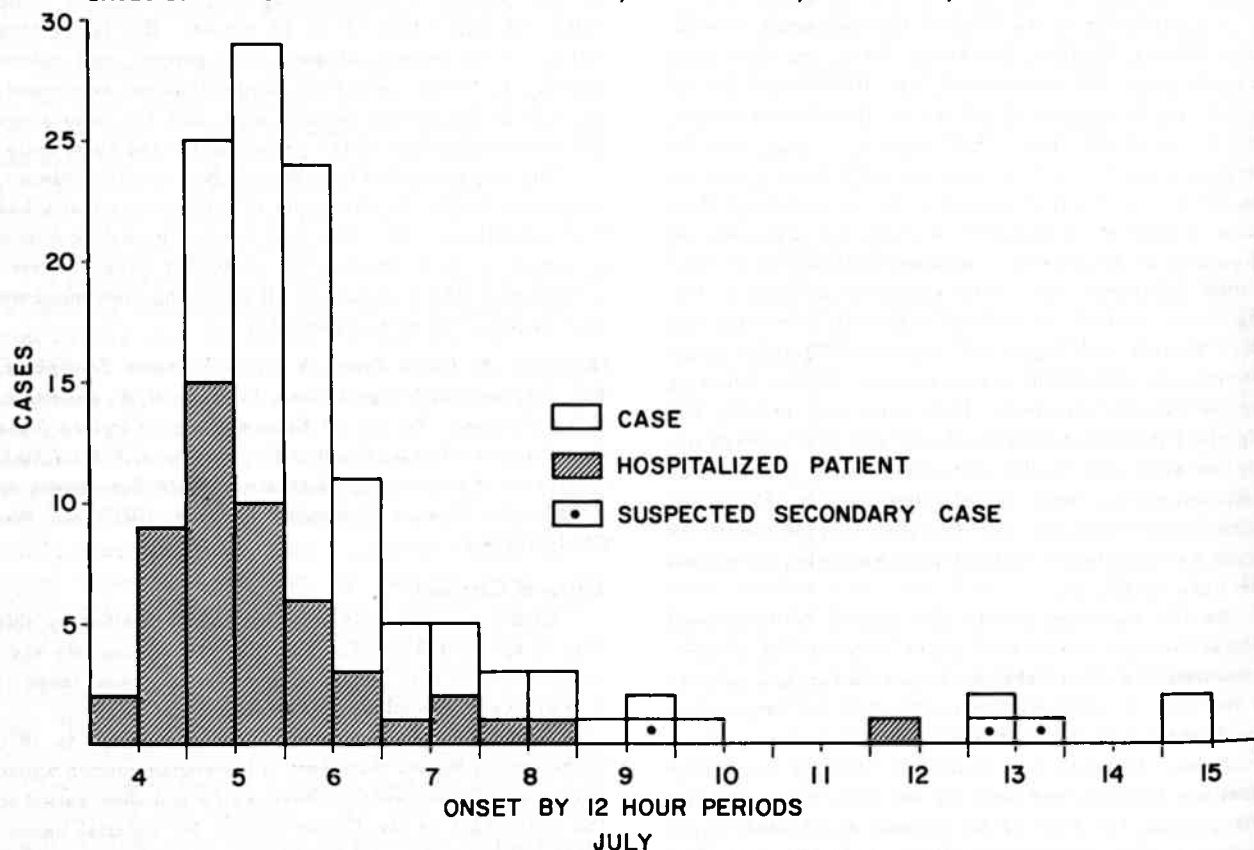
Improper facilities and procedures for storage of both raw and cooked meat and inadequate environmental sanitation

(Continued on page 296)

SALMONELLOSIS - (Continued from page 295)

Figure 1

CASES OF SALMONELLOSIS BY DATE OF ONSET, CLARKSVILLE, TENNESSEE, JULY 4-JULY 15, 1970



tion were found during investigation of the implicated restaurant. Two of the four restaurant employees cultured were bacteriologically positive for *S. thompson*, the other two were both bacteriologically and serologically negative; all four had consumed at least one sandwich of barbecue on the July Fourth weekend. An estimated 4,000 persons had access to contaminated meat.

The most likely explanation for the outbreak is that inadequate sanitary practices in handling the barbecued pork permitted the survival, dissemination, and replication of contaminating salmonellae. It is not yet unclear how the restaurant originally became contaminated. Investigations

of the three meat plants which supply the restaurant are currently underway by U.S. Department of Agriculture officials.

(Reported by Eugene W. Fowinkle, Commissioner, William H. Arnes, Jr., M.D., Deputy Commissioner of Health, and J. Howard Barrick, Ph.D., Director, Laboratories, Tennessee Department of Public Health; Edward Cutter, M.D., Director, and James Powell, Sanitarian, Montgomery County Health Department; James A. Edgett, D.V.M., Epidemiologist, Consumer Protection Program, USDA, Beltsville, Maryland; W. Curlette, Regional Office, Food and Drug Administration, Atlanta; and a team from CDC.)

INTERNATIONAL NOTES QUARANTINE MEASURES

Recently a booklet, Vaccination Certificate Requirements for International Travel, was published as a supplement to the Morbidity and Mortality Weekly Report, Vol. 19, No. 21, for the week ending May 30, 1970. This booklet, designed primarily for the use of health departments and physicians, contains immunization requirements of individual countries.

The Foreign Quarantine Program, CDC, has prepared a new booklet entitled Health Information for International

Travel (PHS Publication No. 2045) which provides detailed information on required and recommended immunizations for travel to most countries. PHS Publication No. 2045 replaces the booklet Immunization Information for International Travel (PHS Publication No. 384) and is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, at 10 cents per copy or \$6.50 per 100 copies.

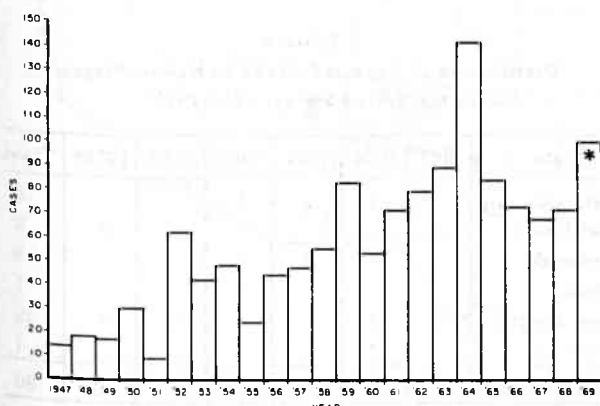
(Reported by the Foreign Quarantine Program, CDC.)

SURVEILLANCE SUMMARY

LEPTOSPIROSIS - 1969

In 1969, 22 states reported a total of 100 cases (five fatal) of leptospirosis in humans. This was an increase of 41 percent over the 71 cases recorded in 17 states during 1968 (Figure 2). California, Florida, Iowa, and Ohio accounted for 51 of the 100 cases. Individual case reports were received on 69 of the 100 patients.

Figure 2
HUMAN LEPTOSPIROSIS - UNITED STATES, 1947-1969



*PROVISIONAL DATA
SOURCE: MORBIDITY AND MORTALITY WEEKLY REPORT

The month of onset was known in 58 cases; almost half of these cases occurred in June, July, and August. Of 62 patients on whom sex and age data were received, 51 were males (Table 1). In 49 patients on whom clinical manifestations were recorded, fever (57 percent), headache (41 percent), and jaundice (41 percent) were the predominant symptoms (Table 2). In 43 cases where a possible source was noted, the most commonly implicated source of infection was water and involved 19 cases (Table 3); dogs were associated with eight of the cases.

Table 1
Age and Sex of 62 Patients with Leptospirosis
United States, 1969

Age Group (Years)	Sex		Total	Percent of Total
	Male	Female		
0-9	2	3	5	8.1
10-19	9	2	11	17.7
20-29	13	1	14	22.6
30-39	7	0	7	11.3
40-49	11	3	14	22.6
50-59	3	0	3	4.8
60+	6	2	8	12.9
Total	51	11	62	100.0

Table 2
Clinical Manifestations of 49 Patients with Leptospirosis
United States, 1969

Symptom	Number of Cases	Percent of Total
Fever	28	57.1
Headache	20	40.8
Jaundice	20	40.8
Chills	14	28.6
Elevated BUN	13	26.5
Albuminuria	13	26.5
Elevated CSF Cell Count	12	24.5
Hematuria	11	22.4
Nausea or Vomiting	11	22.4
Stiff Neck	9	18.4
Lethargy or Malaise	9	18.4
Anuria	9	18.4
Elevated CSF Protein	8	16.3
Myalgia	8	16.3
Sweating	5	10.2
Conjunctivitis	5	10.2

Table 3
Most Probable Sources of Infection in 69 Cases of
Leptospirosis in Humans - United States, 1969

Most Probable Source	Number of Cases
Rodents	3
Dogs	8
Cattle	3
Swine	4
Cattle or Swine	2
Other	2
Water	19
Sewage	2
Unknown	26
Total	69

In 24 of the 69 reports received, *Leptospira canicola* was serologically implicated as the infecting serotype. Serotype *icterohaemorrhagiae* followed with 10 cases (14 percent), and *grippityphosa* and *pomona* were implicated in eight cases and seven cases, respectively. (Reported by the Office of Veterinary Public Health Service, Epidemiology Program, CDC.)

A copy of the report from which these data were derived is available on request from the

Center for Disease Control
Attn: Chief, Office of Veterinary Public Health Service,
Epidemiology Program
Atlanta, Georgia 30333

CURRENT TRENDS PLAGUE - United States

For 1970 through July 28, six cases of bubonic plague - all wild rodent associated - have been reported in the United States (Table 4) (MMWR, Vol. 19, Nos. 20, 21, 23, 25, 27, and 28). The last urban rodent associated cases were in 1924 when an outbreak occurred in Los Angeles. Since 1924, 72 cases of plague have been reported. Only one patient was known to have been exposed in an urban area, and he acquired infection in Denver, Colorado, from an introduced species of wild rodent, an Eastern Fox squirrel (MMWR, Vol. 17, Nos. 27-29).

Of the 25 human cases reported from 1924 through 1949, 20 were from the Pacific states. Of the 46 cases reported since 1950, 80 percent occurred in the Rocky Mountain states, with 28 cases reported from New Mexico. The increase in cases noted since 1965 (Figure 3) possibly reflects a larger number of persons being exposed to wild rodent activity, either by their living styles or recreational activities, particularly camping.

From 1965 to the present (Table 5, Figure 4) 30 cases in humans have been reported from Arizona, California, Colorado, Idaho, New Mexico, and Utah. Infection in rodents has been reported from Texas and Wyoming as well. The cases in humans occurred in the summer and fall, with

over half the cases occurring in June and July (Figure 5). Persons under 15 years of age were the primary group affected, with no male or female predominance in this group (Figure 6). Association with prairie dogs accounted for more than half of the cases when a source was known (Table 6).

(Reported by the Zoonoses Section, Ecological Investigations Program, CDC, Fort Collins, Colorado, and the Special Pathogens Section, Bacterial Diseases Branch, Epidemiology Program, CDC, Atlanta.)

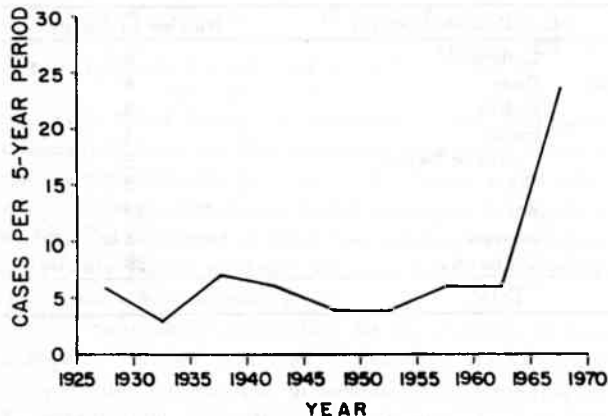
Table 5
Distribution of Reported Cases of Human Plague
in the United States, 1965-1970*

State	1965	1966	1967	1968	1969	1970*	Total
Arizona		1	1	1			3
California	1					2	3
Colorado			2	1			3
Idaho				1			1
New Mexico	7	3			5	4	19
Utah		1					1
Yearly Total	8	5	3	3	5	6	30

*Current only through July 28, 1970; Official Case Reports

Figure 3

WILD RODENT ASSOCIATED HUMAN BUBONIC PLAGUE
BY 5-YEAR PERIODS, UNITED STATES, 1925-1970*



* THROUGH JULY 28, 1970

Table 6
Human Plague in the United States
1965 - 1970*

Probable Contact	Number of Cases
Prairie Dog	8
Ground Squirrel	2
Tree Squirrel	1
Pinon Mouse	1
Snowshoe Hare	1
Chipmunk	1
Unknown	16
Total	30

*Current only through July 28, 1970; Official Case Reports

Table 4
Human Cases of Bubonic Plague in the United States, 1970*

Case No.	Date of Onset	Age	Sex	Place of Exposure	Laboratory Data	Outcome
1	May 16	39	M	Sandoval Co., N.M.	Positive Blood Culture	Recovered
2	May 30	8	M	Shasta Co., Calif.	Positive Blood Culture	Recovered
3	June 7	13	M	Rio Arriba Co., N.M.	HA Titer 1:256 to Fraction 1 of <i>Y. pestis</i>	Recovered
4	June 26	16	M	Bernalillo Co., N.M.	Positive Blood and Node Aspirate Culture	Recovered
5	July 7	45	M	Plumas Co., Calif.	Positive Node Aspirate Culture	Recovered
6	July 12	7	F	Rio Arriba Co., N.M.	Positive Node Aspirate Culture	Recovered

*Through July 28, 1970; Official Case Reports

Figure 4
GEOGRAPHIC DISTRIBUTION OF HUMAN PLAGUE, UNITED STATES, 1965-1970

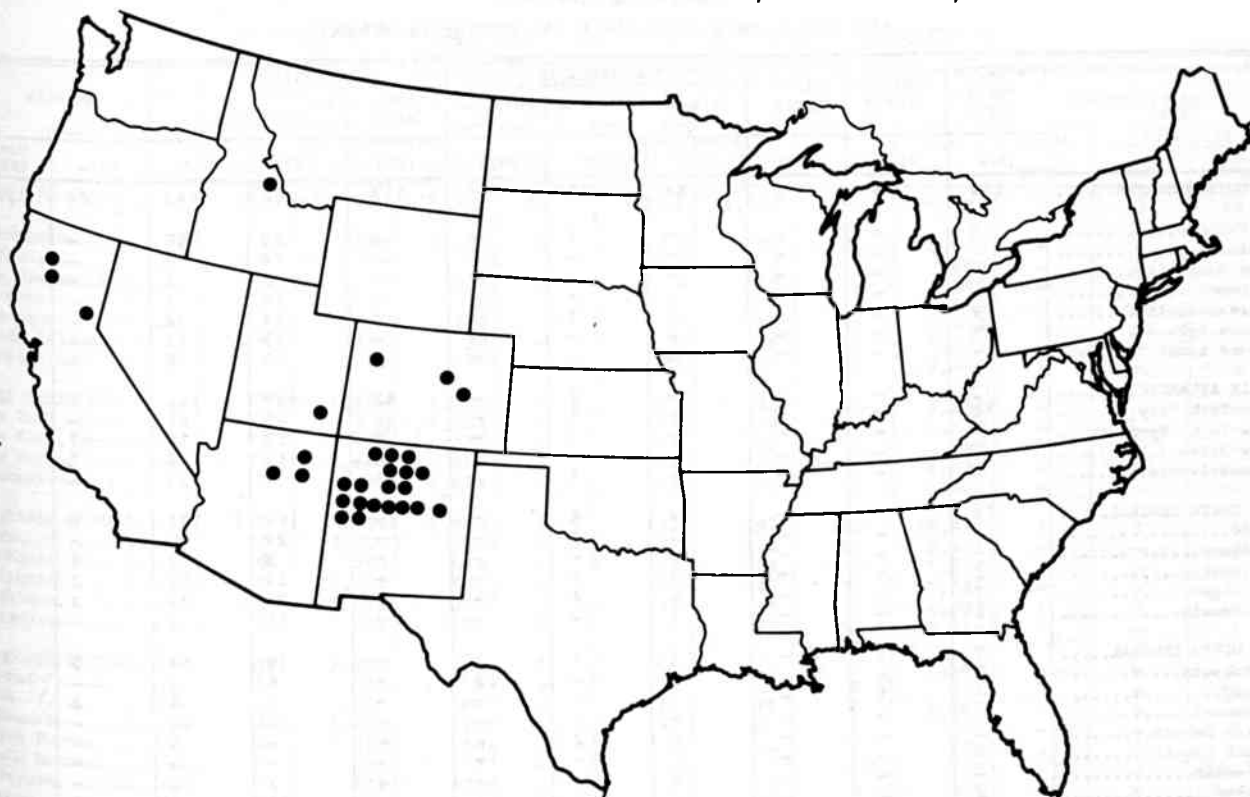
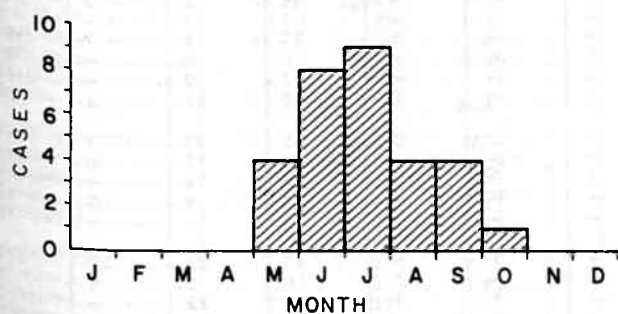


Figure 5
REPORTED CASES OF HUMAN PLAGUE BY MONTH,
UNITED STATES, 1965-1970*



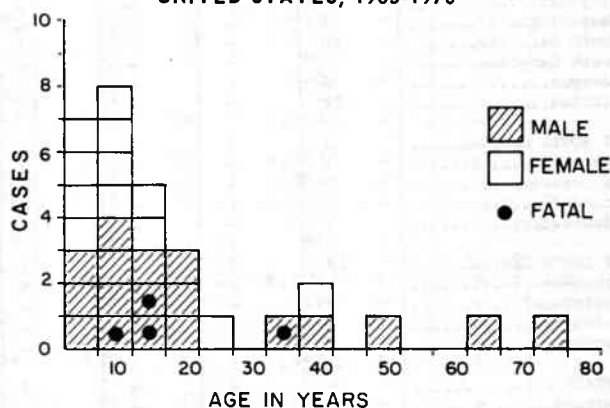
* THROUGH JULY 28, 1970

Editorial Comment (1):

Tetracyclines for a minimum of 10 days are considered the drugs of choice for treatment of bubonic plague. They minimize the risk, occasionally seen with streptomycin treatment, of a schwartzman-like reaction in the patient with a massive gram negative bacteremia. The penicillins, although often demonstrating activity against *Yersinia pestis* on *in vitro* testing, are not effective against the clinical disease in humans.

Diagnosis of bubonic plague is best accomplished by culture of material aspirated directly from a fluctuant bubo or, if the bubo is not fluctuant, from sterile saline injected

Figure 6
REPORTED HUMAN PLAGUE CASES BY AGE AND SEX,
UNITED STATES, 1965-1970*



* THROUGH JULY 28, 1970

and withdrawn. Slides of the aspirated material should be examined with a polychromatic stain (Giemsa or Wayson's) to demonstrate the bipolar characteristics of *Y. pestis*. Paired sera, preferably drawn 3 weeks apart, can be tested by passive hemagglutination for antibodies to fraction 1 of *Y. pestis*.

Reference

1. World Health Organization: 4th Report of the Expert Committee on Plague (WHO Techn Rep No. 447). Geneva, 1970

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED
AUGUST 1, 1970 AND JULY 26, 1969 (30th WEEK)

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	DIPH- THERIA	ENCEPHALITIS			HEPATITIS			MALARIA	
				Primary including unsp. cases		Post In- fectious	Serum	Infectious		1970	Cum. 1970
				1970	1969	1970	1970	1969			
UNITED STATES.....	159	4	2	44	22	7	118	1,280	843	64	1,990
NEW ENGLAND.....	3	-	-	-	1	-	4	90	65	-	57
Maine.....	-	-	-	-	-	-	-	14	7	-	5
New Hampshire.....	-	-	-	-	-	-	-	3	1	-	3
Vermont.....	-	-	-	-	-	-	-	14	3	-	3
Massachusetts.....	2	-	-	-	1	-	1	31	34	-	30
Rhode Island.....	1	-	-	-	-	-	-	17	12	-	8
Connecticut.....	-	-	-	-	-	-	3	11	8	-	8
MIDDLE ATLANTIC.....	12	-	-	-	2	-	42	229	140	8	221
New York City.....	10	-	-	-	1	-	22	62	69	-	26
New York, Up-State...	1	-	-	-	-	-	3	58	19	1	63
New Jersey*.....	-	-	-	-	-	-	16	62	24	7	61
Pennsylvania.....	1	-	-	-	1	-	1	47	28	-	71
EAST NORTH CENTRAL.....	15	-	-	14	6	-	19	164	121	5	109
Ohio.....	1	-	-	7	1	-	-	27	17	-	22
Indiana.....	-	-	-	-	-	-	-	8	12	1	11
Illinois.....	2	-	-	1	1	-	-	34	53	2	30
Michigan.....	7	-	-	6	4	-	19	77	33	2	46
Wisconsin.....	5	-	-	-	-	-	-	18	6	-	-
WEST NORTH CENTRAL.....	7	1	-	1	3	2	-	38	54	5	158
Minnesota.....	3	-	-	-	-	2	-	6	6	-	18
Iowa*.....	-	1	-	1	-	-	-	2	9	2	17
Missouri.....	-	-	-	-	-	-	-	16	28	-	17
North Dakota.....	-	-	-	-	2	-	-	-	1	-	1
South Dakota.....	-	-	-	-	-	-	-	-	-	-	2
Nebraska.....	-	-	-	-	-	-	-	3	2	-	2
Kansas.....	4	-	-	-	1	-	-	11	8	3	101
SOUTH ATLANTIC.....	69	-	-	11	3	-	15	311	106	15	379
Delaware.....	-	-	-	-	-	-	-	3	1	1	2
Maryland.....	6	-	-	-	-	-	2	181	15	2	38
Dist. of Columbia....	15	-	-	-	-	-	-	2	6	-	2
Virginia.....	7	-	-	-	-	-	-	56	5	3	48
West Virginia.....	1	-	-	-	-	-	-	5	3	-	6
North Carolina.....	10	-	-	1	-	-	5	27	14	7	154
South Carolina.....	-	-	-	-	1	-	-	5	6	-	31
Georgia.....	6	-	-	-	-	-	-	2	7	-	62
Florida.....	24	-	-	10	2	-	8	30	49	2	36
EAST SOUTH CENTRAL.....	3	1	-	5	1	2	3	55	33	1	144
Kentucky.....	1	-	-	1	-	-	-	9	11	-	119
Tennessee.....	1	1	-	-	1	2	3	28	16	-	-
Alabama*.....	-	-	-	-	-	-	-	13	6	1	15
Mississippi.....	1	-	-	4	-	-	-	5	-	-	10
WEST SOUTH CENTRAL.....	14	2	2	1	-	1	6	83	86	21	371
Arkansas.....	-	-	-	1	-	-	1	6	5	1	8
Louisiana*.....	7	-	2	-	-	1	1	9	23	-	23
Oklahoma*.....	-	1	-	-	-	-	-	6	11	4	62
Texas.....	7	1	-	-	-	-	4	62	47	16	278
MOUNTAIN.....	-	-	-	1	1	-	2	35	27	4	158
Montana.....	-	-	-	-	1	-	-	2	-	2	8
Idaho.....	-	-	-	-	-	-	-	3	1	-	3
Wyoming.....	-	-	-	-	-	-	-	-	-	-	-
Colorado*.....	-	-	-	1	-	-	-	13	-	-	133
New Mexico.....	-	-	-	-	-	-	-	2	10	1	5
Arizona.....	-	-	-	-	-	-	-	8	9	-	6
Utah.....	-	-	-	-	-	-	2	6	2	1	3
Nevada.....	-	-	-	-	-	-	-	1	5	-	-
PACIFIC.....	36	-	-	11	5	2	27	275	211	5	393
Washington.....	-	-	-	-	-	-	-	9	38	-	33
Oregon.....	-	-	-	-	-	-	1	11	16	-	14
California.....	31	-	-	11	5	2	26	221	153	4	253
Alaska.....	3	-	-	-	-	-	-	28	2	-	-
Hawaii.....	2	-	-	-	-	-	-	6	2	1	93
Puerto Rico*.....	-	-	-	-	-	-	5	3	10	-	7
Virgin Islands.....	-	-	-	-	-	-	-	-	-	-	-

*Delayed Reports: Encephalitis, Primary: Colo. 2
Hepatitis, Serum: N.J. Delete 5
Hepatitis, Infectious: N.J. Delete 4, Ala. 2, La. Delete 1, P.R. 1
Malaria: R.I. Delete 1, Iowa 1, Okla. 1

Morbidity and Mortality Weekly Report

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

AUGUST 1, 1970 AND JULY 26, 1969 (30th WEEK) — CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		POLIOMYELITIS		
	1970	Cumulative		1970	Cumulative		1970	Cum. 1970	Total 1970	Paralytic Cum. 1970	
		1970	1969		1970	1969				1970	1970
UNITED STATES.....	393	38,231	19,308	40	1,683	2,166	799	71,745	2	2	17
NEW ENGLAND.....	8	869	1,036	—	73	71	42	8,613	—	—	—
Maine.....	4	197	7	—	3	6	3	658	—	—	—
New Hampshire.....	—	49	237	—	7	2	—	315	—	—	—
Vermont.....	—	8	3	—	6	—	2	575	—	—	—
Massachusetts.*.....	3	417	190	—	32	31	15	2,703	—	—	—
Rhode Island.....	—	118	22	—	5	6	12	1,432	—	—	—
Connecticut.....	1	80	577	—	20	26	10	2,930	—	—	—
MIDDLE ATLANTIC.....	77	4,669	7,226	4	297	343	68	7,202	—	—	—
New York City.....	11	818	4,781	—	74	70	47	2,547	—	—	—
New York, Up-State...	33	250	576	3	57	56	NN	NN	—	—	—
New Jersey.....	23	1,669	850	—	114	142	11	2,029	—	—	—
Pennsylvania.....	10	1,932	1,019	1	52	75	10	2,626	—	—	—
EAST NORTH CENTRAL.....	135	9,473	1,983	3	191	297	248	18,997	1	1	2
Ohio.....	39	3,729	354	2	77	113	66	3,418	—	—	—
Indiana.....	6	263	455	—	18	34	8	1,706	—	—	—
Illinois.....	8	3,002	429	—	42	41	17	1,665	—	—	—
Michigan.....	64	1,615	219	—	46	91	39	4,753	1	1	1
Wisconsin.....	18	864	526	1	8	18	118	7,455	—	—	1
WEST NORTH CENTRAL.....	5	3,740	504	1	86	115	18	3,665	—	—	1
Minnesota.....	1	37	5	—	12	25	2	341	—	—	—
Iowa.*.....	—	1,050	324	—	11	15	2	2,262	—	—	—
Missouri.....	3	1,250	22	—	51	51	7	254	—	—	1
North Dakota.....	—	315	10	—	3	—	5	260	—	—	—
South Dakota.....	—	91	3	—	—	1	—	36	—	—	—
Nebraska.....	1	924	133	—	5	9	2	376	—	—	—
Kansas.....	—	73	7	1	4	14	—	136	—	—	—
SOUTH ATLANTIC.....	59	7,001	2,407	4	347	383	125	8,125	—	—	1
Delaware.....	1	257	373	—	3	7	8	273	—	—	—
Maryland.....	13	1,371	65	—	33	35	24	870	—	—	—
Dist. of Columbia....	—	342	—	2	3	—	—	182	—	—	—
Virginia.....	17	1,953	872	—	35	49	35	1,893	—	—	—
West Virginia.....	3	289	174	—	7	18	29	1,981	—	—	1
North Carolina.....	11	830	306	2	71	67	NN	NN	—	—	—
South Carolina.....	3	550	108	—	44	53	5	783	—	—	—
Georgia.....	—	13	1	—	30	64	—	—	—	—	—
Florida.....	11	1,396	508	—	121	82	24	2,143	—	—	—
EAST SOUTH CENTRAL.....	19	1,229	104	3	130	137	106	4,151	—	—	—
Kentucky.....	3	690	60	—	45	49	63	1,501	—	—	—
Tennessee.....	16	364	17	2	56	52	42	2,373	—	—	—
Alabama.....	—	87	4	—	21	21	1	231	—	—	—
Mississippi.....	—	88	23	1	8	15	—	46	—	—	—
WEST SOUTH CENTRAL.....	39	7,345	4,290	5	231	294	66	6,900	1	1	13
Arkansas.....	1	30	16	—	19	29	—	116	—	—	—
Louisiana.....	3	92	120	1	59	78	—	25	—	—	—
Oklahoma.....	—	438	136	1	19	29	2	2,390	—	—	—
Texas.....	35	6,785	4,018	3	134	158	64	4,369	1	1	13
MOUNTAIN.....	11	1,454	784	5	35	39	18	3,210	—	—	—
Montana.....	9	49	16	—	1	6	6	660	—	—	—
Idaho.....	—	32	88	—	5	6	—	86	—	—	—
Wyoming.....	—	11	—	—	1	—	—	30	—	—	—
Colorado.....	—	168	136	4	12	7	2	1,039	—	—	—
New Mexico.....	1	184	232	—	—	6	7	623	—	—	—
Arizona.....	1	957	304	1	14	10	2	651	—	—	—
Utah.....	—	32	7	—	2	2	1	121	—	—	—
Nevada.....	—	21	1	—	—	2	—	—	—	—	—
PACIFIC.....	40	2,451	974	15	293	487	108	10,882	—	—	—
Washington.....	4	499	58	1	39	51	34	4,147	—	—	—
Oregon.....	8	222	196	1	22	11	—	934	—	—	—
California.....	27	1,419	683	13	230	404	56	4,429	—	—	—
Alaska.....	1	135	8	—	—	11	—	375	—	—	—
Hawaii.....	—	176	29	—	2	10	18	997	—	—	—
Puerto Rico.....	11	868	1,285	—	4	15	5	668	—	—	—
Virgin Islands.....	—	6	36	—	1	—	—	1	—	—	—

*Delayed Reports: Measles: Mass. Delete 4, Iowa 4

Morbidity and Mortality Weekly Report

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

AUGUST 1, 1970 AND JULY 26, 1969 (30th WEEK) — CONTINUED

AREA	RUBELLA		TETANUS		TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
	1970	Cum. 1970	1970	Cum. 1970	1970	Cum. 1970	1970	Cum. 1970	1970	Cum. 1970	1970	Cum. 1970
UNITED STATES.....	251	47,793	3	64	5	76	5	148	25	200	55	1,832
NEW ENGLAND.....	10	2,315	-	3	-	-	-	5	-	-	1	66
Maine.....	-	379	-	-	-	-	-	-	-	-	1	23
New Hampshire.....	-	150	-	-	-	-	-	-	-	-	-	-
Vermont.....	-	49	-	-	-	-	-	-	-	-	-	39
Massachusetts.....	9	1,109	-	2	-	-	-	3	-	-	-	1
Rhode Island.....	-	88	-	-	-	-	-	-	-	-	-	1
Connecticut.....	1	540	-	1	-	-	-	2	-	-	-	2
MIDDLE ATLANTIC.....	21	3,836	-	5	-	1	1	38	-	8	7	175
New York City.....	6	542	-	2	-	-	-	11	-	-	-	-
New York, Up-State..	6	390	-	-	-	1	1	13	-	4	7	164
New Jersey.....	2	841	-	2	-	-	-	6	-	2	-	-
Pennsylvania.....	7	2,063	-	1	-	-	-	8	-	2	-	11
EAST NORTH CENTRAL....	49	9,905	-	13	-	18	2	22	2	2	2	138
Ohio.....	6	1,991	-	1	-	2	2	10	2	2	-	39
Indiana.....	9	1,755	-	5	-	13	-	1	-	-	1	11
Illinois.....	2	1,672	-	3	-	2	-	3	-	-	1	47
Michigan.....	25	2,535	-	4	-	-	-	7	-	-	-	12
Wisconsin.....	7	1,952	-	-	-	1	-	1	-	-	-	29
WEST NORTH CENTRAL....	10	3,228	-	4	2	16	-	5	1	2	15	346
Minnesota.....	-	116	-	1	-	-	-	1	-	-	2	64
Iowa.....	4	1,990	-	1	-	-	-	1	-	-	3	63
Missouri.....	5	400	-	1	1	13	-	1	1	2	5	63
North Dakota.....	1	125	-	-	-	1	-	-	-	-	-	25
South Dakota.....	-	1	-	1	-	1	-	-	-	-	-	60
Nebraska.....	-	541	-	-	-	-	-	2	-	-	-	6
Kansas.....	-	55	-	-	1	1	-	-	-	-	5	65
SOUTH ATLANTIC.....	28	6,084	3	15	-	8	-	22	13	139	9	378
Delaware.....	-	41	-	-	-	-	-	-	-	4	-	1
Maryland.....	2	309	-	-	-	-	-	6	-	9	-	-
Dist. of Columbia...	-	18	-	1	-	-	-	-	-	-	-	-
Virginia.....	3	675	1	1	-	1	-	2	6	38	1	170
West Virginia.....	2	1,220	-	-	-	-	-	-	-	4	4	91
North Carolina.....	1	38	1	2	-	4	-	2	6	52	-	1
South Carolina.....	11	617	-	1	-	-	-	-	1	28	-	-
Georgia.....	-	-	-	1	-	2	-	7	-	4	2	63
Florida.....	9	3,166	1	9	-	1	-	5	-	-	2	52
EAST SOUTH CENTRAL....	15	2,497	-	4	-	2	-	9	5	22	6	142
Kentucky.....	4	893	-	-	-	1	-	1	1	2	2	82
Tennessee.....	7	1,268	-	1	-	1	-	5	3	13	3	41
Alabama.....	4	258	-	3	-	-	-	3	1	4	1	19
Mississippi.....	-	78	-	-	-	-	-	-	-	3	-	-
WEST SOUTH CENTRAL....	45	8,485	-	11	2	21	-	11	3	20	12	333
Arkansas.....	-	34	-	3	1	9	-	2	-	5	1	59
Louisiana.....	1	147	-	2	-	2	-	1	-	-	4	51
Oklahoma.....	1	807	-	-	-	7	-	-	2	13	1	67
Texas.....	43	7,497	-	6	1	3	-	8	1	2	6	156
MOUNTAIN.....	29	1,895	-	-	-	5	-	8	1	6	-	55
Montana.....	10	311	-	-	-	-	-	1	-	1	-	1
Idaho.....	1	175	-	-	-	-	-	-	1	2	-	-
Wyoming.....	-	133	-	-	-	-	-	-	-	1	-	1
Colorado.....	9	380	-	-	-	-	-	2	-	2	-	30
New Mexico.....	4	198	-	-	-	-	-	5	-	-	-	9
Arizona.....	4	539	-	-	-	-	-	-	-	-	-	11
Utah.....	1	159	-	-	-	5	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-	3
PACIFIC.....	44	9,548	-	9	1	5	2	28	-	1	3	199
Washington.....	-	4,574	-	2	1	2	1	4	-	-	-	2
Oregon.....	13	796	-	3	-	-	-	-	-	-	-	1
California.....	28	3,884	-	4	-	3	1	21	-	1	3	196
Alaska.....	1	94	-	-	-	-	-	2	-	-	-	-
Hawaii.....	2	200	-	-	-	-	-	1	-	-	-	-
Puerto Rico.....	-	26	-	5	-	-	-	3	-	-	-	32
Virgin Islands.....	-	-	-	-	-	-	-	-	-	-	-	-

*Delayed Reports: Tularemia: Va. 3

Rabies in Animals: Mass. 1

Morbidity and Mortality Weekly Report

303

Week No.
30

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED AUGUST 1, 1970

(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		
NEW ENGLAND:	774	473	54	35	SOUTH ATLANTIC:	1,090	562	49	77
Boston, Mass.-----	234	136	24	11	Atlanta, Ga.-----	121	53	4	6
Bridgeport, Conn.-----	40	24	2	4	Baltimore, Md.-----	209	106	1	15
Cambridge, Mass.-----	19	13	5	—	Charlotte, N. C.-----	41	17	—	—
Fall River, Mass.-----	35	23	—	—	Jacksonville, Fla.-----	75	37	—	5
Hartford, Conn.-----	77	48	2	3	Miami, Fla.-----	100	61	—	5
Lowell, Mass.-----	26	16	4	3	Norfolk, Va.-----	40	20	6	3
Lynn, Mass.-----	20	12	1	1	Richmond, Va.-----	80	48	5	2
New Bedford, Mass.-----	32	23	1	2	Savannah, Ga.-----	30	12	4	1
New Haven, Conn.-----	51	30	—	2	St. Petersburg, Fla.-----	71	62	5	—
Providence, R. I.-----	65	33	6	2	Tampa, Fla.-----	67	38	14	6
Somerville, Mass.-----	14	12	—	1	Washington, D. C.-----	208	85	9	33
Springfield, Mass.-----	48	27	4	2	Wilmington, Del.-----	48	23	1	1
Waterbury, Conn.-----	47	32	—	1	EAST SOUTH CENTRAL:	606	322	18	32
Worcester, Mass.-----	66	44	5	3	Birmingham, Ala.-----	95	46	—	9
MIDDLE ATLANTIC:	3,273	1,888	135	125	Chattanooga, Tenn.-----	52	28	2	2
Albany, N. Y.-----	59	34	4	1	Knoxville, Tenn.-----	36	26	2	—
Allentown, Pa.-----	26	15	3	—	Louisville, Ky.-----	115	60	10	8
Buffalo, N. Y.-----	144	74	3	3	Memphis, Tenn.-----	143	70	2	9
Camden, N. J.-----	42	24	6	5	Mobile, Ala.-----	36	22	—	—
Elizabeth, N. J.-----	27	13	4	—	Montgomery, Ala.-----	24	13	2	—
Erie, Pa.-----	46	30	5	3	Nashville, Tenn.-----	105	57	—	4
Jersey City, N. J.-----	60	34	6	3	WEST SOUTH CENTRAL:	1,168	595	32	101
Newark, N. J.-----	61	32	3	3	Austin, Tex.-----	34	18	—	3
New York City, N. Y.-----	1,645	937	57	57	Baton Rouge, La.-----	34	14	—	1
Paterson, N. J.-----	32	18	2	1	Corpus Christi, Tex.-----	43	22	—	3
Philadelphia, Pa.-----	502	290	8	29	Dallas, Tex.-----	139	80	1	11
Pittsburgh, Pa.-----	194	106	11	11	El Paso, Tex.-----	47	29	3	4
Reading, Pa.-----	59	39	3	1	Fort Worth, Tex.-----	72	44	—	3
Rochester, N. Y.-----	125	83	6	2	Houston, Tex.-----	278	124	10	42
Schenectady, N. Y.-----	28	19	4	—	Little Rock, Ark.-----	56	24	3	5
Scranton, Pa.-----	36	23	2	3	New Orleans, La.-----	126	63	3	7
Syracuse, N. Y.-----	80	56	1	1	Oklahoma City, Okla.-----	92	46	—	9
Trenton, N. J.-----	41	19	2	—	San Antonio, Tex.-----	122	62	2	9
Utica, N. Y.-----	31	19	1	1	Shreveport, La.-----	57	30	6	3
Yonkers, N. Y.-----	35	23	4	1	Tulsa, Okla.-----	68	39	4	1
EAST NORTH CENTRAL:	2,540	1,446	61	134	MOUNTAIN:	526	305	26	31
Akron, Ohio-----	60	36	—	11	Albuquerque, N. Mex.-----	61	32	6	1
Canton, Ohio-----	35	24	3	2	Colorado Springs, Colo.-----	30	16	4	2
Chicago, Ill.-----	749	404	14	35	Denver, Colo.-----	123	72	6	12
Cincinnati, Ohio-----	160	93	5	11	Ogden, Utah-----	21	16	3	1
Cleveland, Ohio-----	204	107	1	13	Phoenix, Ariz.-----	120	59	2	6
Columbus, Ohio-----	135	72	—	7	Pueblo, Colo.-----	22	16	1	—
Dayton, Ohio-----	76	40	2	3	Salt Lake City, Utah-----	68	42	2	4
Detroit, Mich.-----	297	161	3	14	Tucson, Ariz.-----	81	52	2	5
Evansville, Ind.-----	37	29	—	—	PACIFIC:	1,499	876	29	56
Flint, Mich.-----	74	41	1	5	Berkeley, Calif.-----	17	12	—	—
Fort Wayne, Ind.-----	46	30	2	3	Fresno, Calif.-----	47	25	1	2
Gary, Ind.-----	39	22	6	2	Glendale, Calif.-----	37	28	1	1
Grand Rapids, Mich.-----	49	37	6	1	Honolulu, Hawaii-----	39	20	1	5
Indianapolis, Ind.-----	155	91	5	10	Long Beach, Calif.-----	103	54	1	2
Madison, Wis.-----	40	19	4	5	Los Angeles, Calif.-----	452	267	12	16
Milwaukee, Wis.-----	114	72	4	5	Oakland, Calif.-----	91	47	1	8
Peoria, Ill.-----	42	26	—	1	Pasadena, Calif.-----	32	22	2	1
Rockford, Ill.-----	37	15	2	1	Portland, Oreg.-----	139	87	4	3
South Bend, Ind.-----	38	23	2	1	Sacramento, Calif.-----	55	36	2	1
Toledo, Ohio-----	98	67	1	3	San Diego, Calif.-----	96	46	—	9
Youngstown, Ohio-----	55	37	—	1	San Francisco, Calif.-----	163	103	2	1
WEST NORTH CENTRAL:	836	521	22	52	San Jose, Calif.-----	38	21	1	2
Des Moines, Iowa-----	66	47	—	5	Seattle, Wash.-----	124	66	1	4
Duluth, Minn.-----	22	22	4	—	Spokane, Wash.-----	33	24	—	—
Kansas City, Kans.-----	42	20	1	8	Tacoma, Wash.-----	33	18	—	1
Kansas City, Mo.-----	131	82	—	7	Total	12,312	6,988	426	643
Lincoln, Nebr.-----	30	21	—	2	Expected Number	12,050	6,874	339	499
Minneapolis, Minn.-----	98	61	1	3	Cumulative Total (includes reported corrections for previous weeks)	394,778	225,828	16,090	18,451
Omaha, Nebr.-----	110	60	—	6					
St. Louis, Mo.-----	240	144	9	16					
St. Paul, Minn.-----	52	36	2	4					
Wichita, Kans.-----	45	28	5	1					
Las Vegas, Nev.*	20	11	—	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.

+Delayed report for week ended July 25, 1970

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 21,000 IS PUBLISHED AT THE CENTER FOR DISEASE CONTROL, ATLANTA, GEORGIA.

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IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MORBIDITY AND MORTALITY, THE CENTER FOR DISEASE CONTROL WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS AND WHICH ARE DIRECTLY RELATED TO THE CENTER FOR DISEASE CONTROL. SUCH COMMUNICATIONS SHOULD BE ADDRESSED TO:

CENTER FOR DISEASE CONTROL
ATTN: THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT
ATLANTA, GEORGIA 30333

NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE CDC BY THE INDIVIDUAL 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.

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