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WEEKLY REPORT

For Week Ending March 7, 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

MENINGOCOCCAL INFECTIONS

Fort Leonard Wood, Missouri

In the period Jan. 1 - March 9, 1970, a total of 33 Army recruits and one military dependent at Fort Leonard Wood, Missouri, became ill with meningococcal infections; three of these patients died. *Neisseria meningitidis* was isolated from 80 percent of the patients with clinical evidence of meningococcal infections. All of the isolates from blood or cerebrospinal fluid were serogroup C sulfonamide-resistant strains.

The 33 cases in recruits exceeded the total number of cases annually reported from this base during previous years; 1967, 17 cases; 1968, 25 cases; 1969, 26 cases. Only one death from meningococcal infection was reported from 1967 through 1969. Eighteen of the 33 cases in recruits in 1970 occurred in February, more than double the number of cases for any of the preceding 5 months (Table 1).

CONTENTS

Several recent culture surveys for nasopharyngeal carriage of *N. meningitidis* in recruits have been conducted at this base. In February 1970, an increased nasopharyngeal carriage rate of serogroup C organisms, over previous months, was noted in recruits who had received 6-7 weeks

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

DISEASE	9th WEEK ENDED March 7, 1970	9th WEEK ENDED March 1, 1969	MEDIAN 1965 - 1969	CUMULATIVE, FIRST 9 WEEKS 1970	CUMULATIVE, FIRST 9 WEEKS 1969	CUMULATIVE, FIRST 9 WEEKS MEDIAN 1965 - 1969
Aseptic meningitis	25	32	29	257	268	249
Brucellosis	5	7	4	22	16	30
Diphtheria	15	2	2	78	22	25
Encephalitis, primary:						
Arthropod-borne & unspecified	21	11	19	180	177	195
Encephalitis, post-infectious	8	3	17	60	38	92
Hepatitis, serum	112	106	843	1,086	881	7,286
Hepatitis, infectious	1,232	993		9,814	7,816	
Malaria	80	59	51	603	417	325
Measles (rubeola)	1,293	531	2,834	8,967	3,740	18,885
Meningococcal infections, total	68	86	86	605	723	717
Civilian	63	83	83	577	677	659
Military	5	3	13	28	46	50
Mumps	2,704	2,369	- - -	22,579	19,840	- - -
Poliomyelitis, total	—	—	—	1	1	2
Paralytic	—	—	—	1	1	2
Rubella (German measles)	1,922	1,180	- - -	11,121	6,096	- - -
Tetanus	2	2	2	12	16	18
Tularemia	—	6	2	12	21	21
Typhoid fever	4	3	6	41	36	44
Typhus, tick-borne (Rky. Mt. spotted fever)	—	—	—	—	1	6
Rabies in animals	78	94	94	527	611	648

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	—	Psittacosis:	5
Botulism:	1	Rabies in Man:	—
Leprosy:	14	Rubella congenital syndrome:	13
Leptospirosis:*	9	Trichinosis: Conn.-1, N.Y. Ups.-1	11
Plague:	—	Typhus, murine: Hawaii-1	1

*Delayed reports: Leptospirosis: Okla. 1 (1969), Colo. 1

MENINGOCOCCAL INFECTIONS – *(Continued from front page)*

Table 1
Cases of *Neisseria meningitidis* Infection in Recruits
Fort Leonard Wood, Missouri
Sept. 1, 1969 – March 4, 1970

Year	Month	Total Number of Cases	Deaths
1969	Sept.	0	0
	Oct.	2	0
	Nov.	4	0
	Dec.	5	0
1970	Jan.	7	0
	Feb.	18	3
	March 1-9	8	0

Table 2
Serogroup C, *Neisseria meningitidis*
Nasopharyngeal Carriage Rates in Military Recruits
Fort Leonard Wood, Missouri
December 1969 – February 1970

Time of Survey	Serogroup C, *N. meningitidis* Carriage Rate (Percent) — Stage of Training: On Arrival at Fort	After First 6-7 Weeks of Basic Training	4-8 Weeks After Completion of Basic Training
Dec. 1969	0	31	32
Jan. 1970	2	31	28
Feb. 1970	2	58	24

of training (Table 2). This increased carrier rate of serogroup C organisms may have been directly associated with the increased number of cases. Serogroup B *N. meningitidis* was carried by 6 percent of recruits on arrival and 2 to 11 percent after 6-7 weeks of training. However, in recent months serogroup B strains have not been associated with clinical disease.

Currently, the investigational group C meningococcal polysaccharide vaccine *(1)* is being offered a proportion of the Fort Leonard Wood recruits, on a voluntary basis. In February 1970, 800-1,000 recruits were immunized with this vaccine.

In 1970, through March 9, for the state of Missouri, there has been no significant increase in the number of civilians with meningococcal disease compared with the same time period in the previous 2 years. To date, in 1970, five cases have occurred in civilians compared with six in the first 2 months of 1969 and four in 1968. More than 10 cases of meningitis, due to other etiologic agents have also been reported in 1970. In St. Louis, in 1969, seven persons were treated for meningococcal infections out of a total of 26 patients in whom meningitis, of all etiologies, was diagnosed. Since January 1968, isolates of *N. meningitidis* from Missouri civilians submitted to the NCDC have been predominantly serogroup C sulfonamide-resistant strains.

Two additional patients, from Illinois, were also treated in St. Louis hospitals. One of these became ill on March 4, 2 days after contact with a Fort Leonard Wood serviceman. None of the other six civilians (the five from Missouri and the one from Illinois) with meningococcal disease in 1970 were known to have been directly associated with Fort Leonard Wood.

(Reported by Lt. Col. Gilberto Varela, MC USA, Chief, Preventive Medicine, General Leonard Wood Army Hospital, Fort Leonard Wood, Missouri; Lt. Col. Philip D. Stansifer, MC USA, Commander, Fifth US Army Medical Laboratories, St. Louis, Missouri; Lt. Col. Phillip E. Winter, MC USA, Epidemiology Consultant, and Col. Robert H. Quinn, MC USA, Chief, Communicable Disease Branch, Preventive Medicine Division, Office of the Surgeon General, USA, Washington, D.C.; Malcolm S. Artenstein, M.D., Chief, Department of Bacterial Diseases, Walter Reed Army Institute of Research, Washington, D.C.; E. A. Belden, M.D., State Epidemiologist, Division of Health, Missouri Department of Health and Welfare, Jefferson City, Missouri; Helen Bruce, M.D., Acting Director, Communicable Disease Section and Melvin Tess, M.D., Health Commissioner, City of St. Louis Division of Health, St. Louis, Missouri; and the Bacterial Reference Unit, Special Bacteriology Laboratory, and the Bacterial Immunology Unit, Laboratory Division, NCDC.)

Editorial Comment

In recent years serogroup C sulfonamide-resistant *N. meningitidis* has become the predominant type of meningococcus isolated from military recruits. A parallel trend has also occurred in the civilian population, and such strains have now become the predominant type isolated from civilian cases throughout the United States (MMWR, Vol. 18, No. 16). The monthly incidence of meningococcal disease in both civilian and military populations shows a similar seasonal variation, with peak incidence rates generally occurring in the late winter and early spring months; outbreaks of meningococcal infections are most likely to be reported at that time of the year.

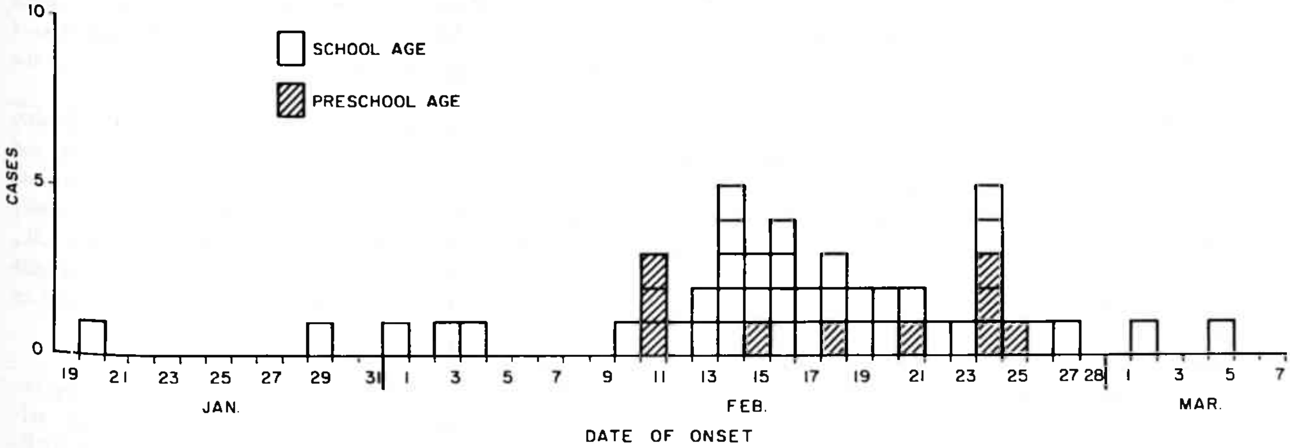
Reference

(1) Artenstein, M. S., Gold, R., Zimmerly, J. G., Wyle, F. A., Schneider, H., and Harkins, C. Prevention of meningococcal disease by group C polysaccharide vaccine. *New Eng J Med, 282:*417-420, 1970.

MEASLES IN PREVIOUSLY IMMUNIZED CHILDREN – Scott City, Kansas

Between Jan. 20 and March 5, 1970, 47 cases of measles occurred in residents of Scott City, Kansas, a town with a population of 4,600 people. Fifteen of these cases were in previously immunized children. All of the 47 cases were clinically and epidemiologically compatible with rubeola. Nearly all patients had a 2- to 3-day prodrome of fever (102-104°F.), associated with cough, coryza, lacrimation, and a generalized rash of 4- to 10-days duration. Koplick spots were noted in several patients. The only complication occurred in a 4-year-old boy who developed

Figure 1
MEASLES CASES BY DATE OF ONSET
SCOTT CITY, KANSAS – JAN. 19-MARCH 7, 1970



secondary otitis media. The index patient (Figure 1). was an unimmunized 7-year-old, second grade boy from whom three generations of spread (35 cases) could be documented. His presumed source of infection was contact at the local bowling alley with children from neighboring communities where outbreaks of measles were occurring.

Of the 47 cases, 15 (32 percent) were in children with documented histories of previous measles immunization. Both Edmonston B and further attenuated measles vaccines had been employed. Although measles immune globulin (MIG) had been used in five cases, the dosages had not been recorded in all instances. Three of the 15 children had been immunized between 8 and 9 months of age, and two of these three had also received MIG. The interval from immunization to onset of illness ranged from 4 months to 7 1/2 years. There was no apparent difference in the clinical illness of vaccinated and unvaccinated children.

A measles immunity survey was conducted after the outbreak, and data were obtained on 65 percent of the population under 18 years of age. (The survey was 80 percent complete in the 5- to 14-year age group.) Based on population estimates from this survey, attack rates by age and immunization status were calculated (Table 3); the overall attack rate for measles susceptible children was 10.4 percent, while that for previously immunized children was 2.0 percent. The attack rate in the 5- to 9-year age group for immunized and unimmunized children was 2.6 and 26.7 percent, respectively. Furthermore, the immunity survey also demonstrated that the elementary school population, which accounted for 35 of the 47 cases, had an immunity level at the onset of the epidemic of 89 percent.

(Reported by E. D. Lyman, M.D., State Director of Health, and Robert A. French, Associate Epidemiologist, Kansas State Department of Health; H. Preston Palmer, M.D., County Health Officer, Scott County, Kansas; and an EIS Officer.)

Editorial Comment:

The 2 percent attack rate in immunized children during this outbreak is consistent with the 3 to 5 percent failure rate which various studies have indicated may occur with the use of live attenuated measles vaccine. *(1, 2)*

References:
(1) Katz, Samuel L. et. al.: Studies on Attenuated Measles-Virus Vaccine. *New Eng J Med, 263:*180, July 28, 1960.
(2) Krugman, Saul et. al.: Studies with Live Attenuated Measles-Virus Vaccine. *Amer J Dis Child, 103:*151, March 1962.

Table 3
Measles Attack Rates by Age and Immunization Status
Scott City, Kansas – January 20-March 5, 1970

Age (Years)	Total Pop.	Estimated Population			Cases of Measles		Attack Rates	
		History of Measles before Jan. 1970	Immunized*	Unimmunized*	Immunized	Unimmunized	Immunized	Unimmunized
<1**	–	–	–	–	0	0	–	–
1-4	312	0	193	119	2***	8	1.0	6.7
5-9	492	69	378	45	10***	12	2.6	26.7
10-14	559	326	154	79	3	11	1.9	13.9
15-18	386	291	31	64	0	1	0	1.6
Total	1,749	686	756	307	15	32	2.0	10.4

*No history of measles before January 1970.
**Age group not included in survey.
***Three children did not receive vaccine in accordance with accepted ACIP recommendations. One child, age 20 months, received vaccine at 9 months of age. Two other children, age 6 and 7, received vaccine between 8 and 9 months of age, with MIG. Adjusting for these three cases would lower the attack rate for immunized children to 1.6.

SALMONELLOSIS – Los Angeles, California

On Dec. 13-14, 1970, four related outbreaks of salmonellosis occurred among approximately 400 persons in Los Angeles County who attended parties catered by a single catering service. Of 207 persons contacted, 128 (62 percent) reported onset of symptoms, including diarrhea (89 percent), abdominal cramps (88 percent), nausea (77 percent), fever (70 percent), and vomiting (41 percent), 3 to 59 hours after the gatherings (mean 18 hours). Attack rates for the individual parties ranged from 34 to 82 percent (Table 4). No deaths were reported. *Salmonella san-diego* was recovered in stool cultures from 109 symptomatic and asymptomatic persons from each of the four parties. Food histories were not obtained.

Samples of six left-over food items from two of the parties were cultured; all yielded *S. san-diego,* including sliced ham, pimento meat loaf, minced ham, and sliced turkey from parties 1 and 2 as well as coleslaw from party 2. Similar food items were served at the two other parties, but no leftovers were available for culture.

Frozen 14-lb. turkey breasts prepared for the parties were reportedly thawed overnight and then roasted at 350°F. for 3 1/2 hours. After cooling for one-half hour at room temperature, the turkey was refrigerated at 50°F. until the time of distribution to the parties on the following day. Although the cold cuts and ham were prepared outside the catering establishment, they were sliced by the caterer and placed on platters in direct contact with turkey slices and then stored. Party 1, which experienced the highest attack rate, left the catered food at room temperature for 3 to 4 hours prior to serving. Undercooked rare inner parts of the turkey were noted by ill persons and inspectors.

(Reported by Ichiro Kamei, M.D., Chief, G. A. Heidbreder, M.D., Health Officer, Robert Murray, Epidemiologist, and Betsy MacCracken, M.D., Epidemiologist, Acute Communicable Disease Control Division, and Ralph Tetreault, Chief Sanitarian, Food and Drug Section, Carl Lawrence, Ph.D., Director, Bureau of Laboratories, and 21 District Health Officers, Los Angeles County Health Department; and an EIS Officer.)

Editorial Comment:

Roasting of turkey at the temperature reported by the caterer would probably destroy any contaminating salmonellae. However, the refrigeration temperature of 50°F. would have been inadequate to prevent stored undercooked food from bacterial multiplication after preparation.

Of the 48 isolations of *S. san-diego* from nonhumans in the United States in 1968, the last year with currently available tabulation of isolates, 40 were from turkeys. The 48 isolations were reported from nine states in different regions of the United States. In 1967, 51 of the 91 *S. san-diego* isolations from nonhumans from 16 states were from turkeys.

Table 4
Symptoms and Mean Incubation Periods in Four Related Outbreaks of Salmonellosis
Los Angeles, California

Party	Number Persons Interviewed	Attack Rate (Percent)	Mean Incubation Period (Hours)	Diarrhea (Percent)	Cramps (Percent)	Nausea (Percent)	Fever (Percent)	Vomiting (Percent)
1	63	82	15.6	94	94	72	88	38
2	32	72	16.5	96	92	65	74	39
3	74	34	18.7	84	80	84	60	36
4	38	74	22.3	86	89	93	50	57
Average		62	18	89	88	77	70	41

INTERNATIONAL NOTES
FOLLOW-UP INFLUENZA – United States and England and Wales

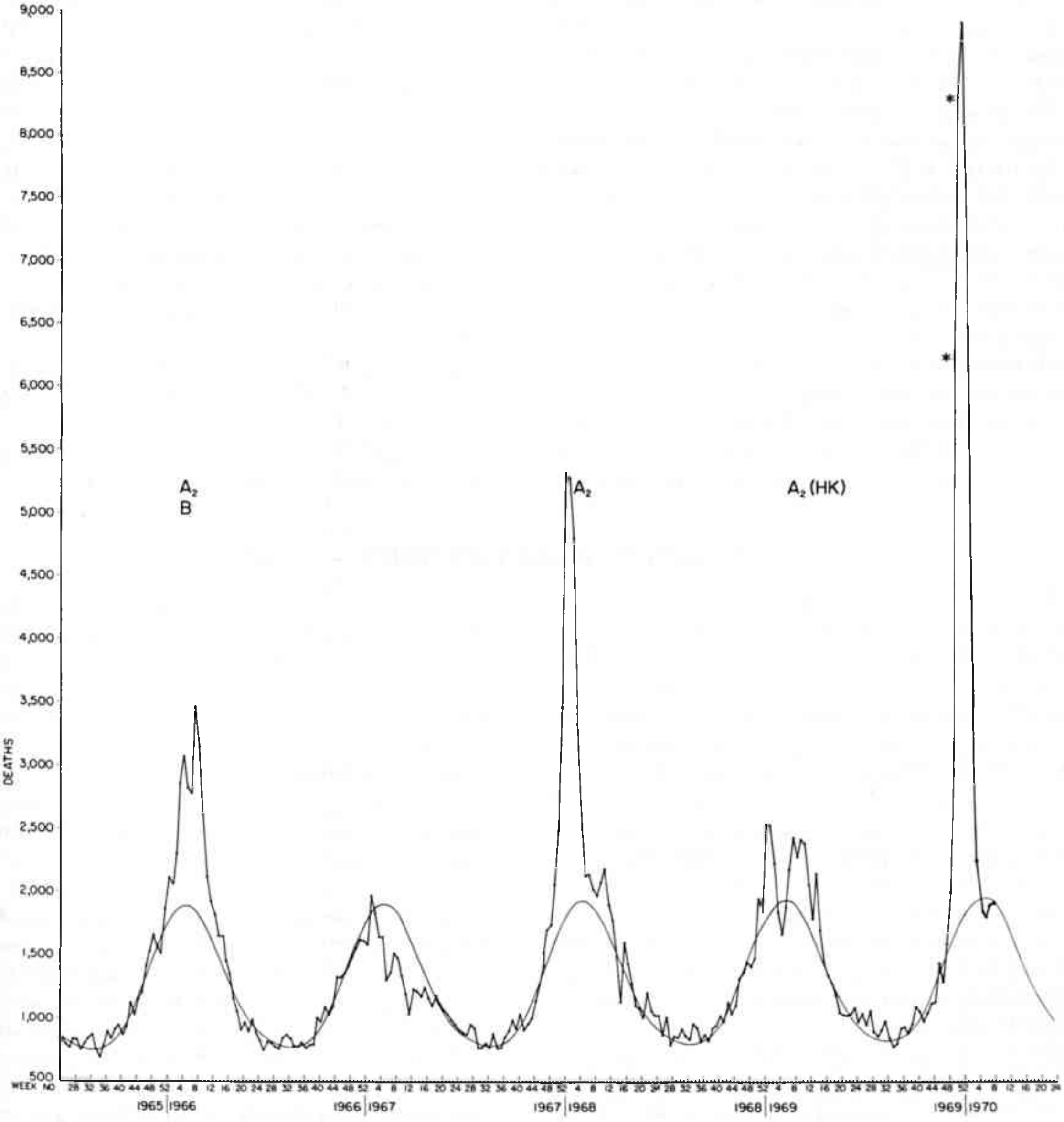
The peak of the influenza season appears passed both in the United States and in England and Wales, and although influenza activity has not stabilized below the epidemic threshold, a comparison of the respiratory mortality of the respective countries can be made. Whereas during the winter of 1968-69, the United States experienced an epidemic of major proportions due to A2/Hong Kong/68 influenza with a sharp peak in respiratory mortality, England and Wales noted only localized outbreaks with only modest irregular increases in respiratory mortality (MMWR, Vol. 19, No. 4). This situation completely reversed during the current influenza season, with England experiencing a sharp increase and the United States only a modest rise. Particularly striking about the English mortality figures was the abruptness with which the peak was reached as well as the equally abrupt decline to near baseline levels. Baseline expected levels were first exceeded during the first week of 1970. By the fifth week of 1970, baseline levels had been achieved again. A modest increase has occurred during the past 2 weeks, but the increase has not exceeded the epidemic threshold (Figure 2).

This influenza season, the United States first noted significant excessive respiratory mortality during the first week of 1970, and while it is still elevated significantly above the baseline, a downward trend has occurred during the past 2 weeks. Of the nine major geographic divisions, two (East South Central and South Atlantic) are currently elevated significantly above expected levels.

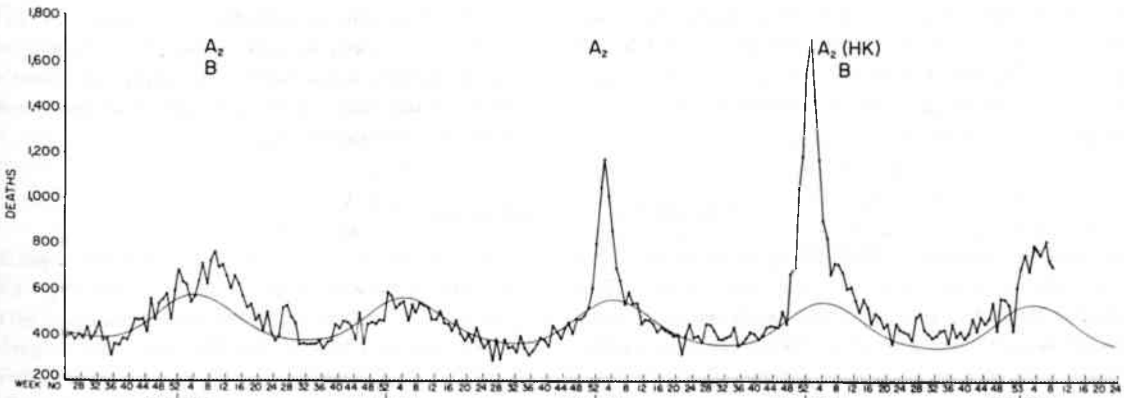
(Reported by Respiratory Diseases Unit, Viral Diseases Branch, and the Statistical Services Activity, Epidemiology Program, NCDC; and Dr. Anthony T. Roden, Principal Medical Officer, Epidemiology Division, Department of Health and Social Security, London.)

Figure 2

PNEUMONIA, INFLUENZA, AND BRONCHITIS DEATHS, ENGLAND AND WALES



PNEUMONIA AND INFLUENZA DEATHS, 122 UNITED STATES CITIES



TULAREMIA – King County, Washington

On Oct. 21, 1969, a 24-year-old man in Washington noted swelling and tenderness of the third finger of his right hand. He had cut this finger on October 16 when he was skinning a bobcat he had shot while deer hunting. The man subsequently had persistent high fever, unilateral epitrochlear and axillary lymphadenopathy, severe pharyngitis, and laryngitis. He saw his physician and was treated with penicillin without amelioration of symptoms. He was referred to another physician on October 27 and was started on a course of chloramphenicol. On October 29, he had a confluent rash with some urticaria. Two days later, his hemoglobin was 16 gram percent and his white blood cell count was 6,000 with 40 percent lymphocytes and 58 percent polymorphonuclear cells. By November 3, his rash, pruritis, and urticaria had disappeared; his temperature had decreased; the finger swelling had resolved; and his throat was less sore. He continued to complain of fatigue, but gradually his symptoms subsided, and when seen on November 7, he was considerably better. By January 21, the patient was entirely asymptomatic and had returned to full activity.

A convalescent serum obtained on December 30 showed a titer of 1:2,560 against *Franciscella tularensis* antigen, as compared with a titer of 1:40 obtained from an acute serum specimen. The sera showed no titer rise against Proteus OX 19, OX 2, OX K, and Typhoid O and H antigens; both serum specimens had Brucella titers of 1:40.

This patient was the second confirmed case of tularemia acquired in Washington in 1969. He was the first patient in the state known to have acquired tularemia from skinning a bobcat and was the first case acquired in King County in recent years.

(Reported by Michael Mahoney, M.D., Auburn, Washington; Fred Christman, B.S., Susan Mills, B.S., and Joseph DiCaprio, M.D., Division of Laboratories, and Byron J. Francis, M.D., Chief, Division of Epidemiology, Washington State Department of Health; and an EIS Officer.)

FOLLOW-UP TULAREMIA OUTBREAK – Vermont

In the spring of 1968, an epidemic of tularemia occurred in west central Vermont (MMWR, Vol. 17, Nos. 18, 21, and 28 and Vol. 18, No. 23). At that time 47 cases were linked to contact with muskrats, all shot or trapped from three streams in Addison County. Subsequent investigations documented a total of 72 cases associated with muskrats taken from these streams. Of these, 49 had onset in the spring of 1968, 16 in the spring of 1969, and 7 could not be precisely dated. One additional patient had tularemia diagnosed in 1947 with a persistent positive titer in 1968. His illness was linked to contact with muskrats taken from a marsh 50 miles north of Addison County. This patient is the only person known to have acquired tularemia in Vermont prior to 1968, and he is the only person known to have developed the disease from contact with animals taken anywhere but in Addison County.

Clinically, the cases varied greatly in severity. Of the 55 symptomatic patients, 89 percent had fever, 69 percent cutaneous lesions, and 65 percent lymphadenopathy; 22 (40 percent) had all three of these signs. Several patients required hospitalization, but no deaths occurred. Eleven patients (20 percent) had no symptoms referable to tularemia, and six others had symptoms compatible with other diseases, possibly not related to tularemia; however, these 17 patients had positive tube agglutination or tularemia antigen skin tests, or both.

All 72 patients had handled wet muskrat pelts or skinned muskrats taken from the three streams that flow into Lake Champlain. Persons who handled more than 50 animals had a significantly greater chance of acquiring the disease. Most of the cases occurred after the muskrat shooting season, April 1-10, the time when the greatest number of muskrats were killed.

Most of the 1968 patients lived near the implicated streams, but many of the 1969 patients were from further away.

(Reported by Donald Bicknell, M.D., Vergennes; Robert B. Aiken, M.D., Commissioner of Health, Linus Leavens, M.D., Director, and William Royster, Communicable Disease Control, Dymitry Pomar, D.V.M., Director, and Terence Macaig, Bureau of Laboratories, Vermont State Department of Health; and the Special Pathogens Section, Bacterial Diseases Branch, Epidemiology Program, and Bacterial Immunology Unit, Laboratory Division, NCDC.)

Editorial Comment

The fact that the patients with disease in 1969 resided further away from the implicated streams than did the patients in 1968, presumable, may reflect increased immunity levels in the high risk local residents as well as awareness of the disease by them.

TULAREMIA – United States 1960-1968

For the 9-year period 1960-1968*, a total of 2,594 cases of tularemia were reported in the United States. The total for each year was less than that of the previous year and was consistent with the steady decline in cases noted since 1939, the year of highest incidence after tularemia became a reportable disease in 1927 (Figure 3). A total of 2,291 cases or 18.5 cases per 1,000,000 population were reported in 1939. The states reporting the largest number of cases for the years 1960-1968 were Arkansas (527), Illinois (208), Tennessee (201), and Missouri (193) (Figure 4). Five states, Maine, New Hampshire, Rhode Island, Connecticut, and Hawaii reported no cases during these years; however,

Figure 3
TULAREMIA INCIDENCE, UNITED STATES, 1927-1968

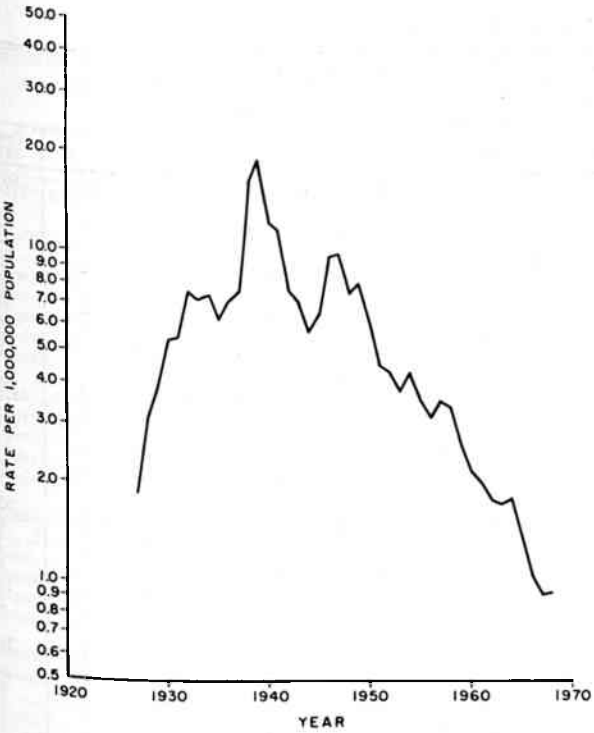


Figure 4
REPORTED CASES OF TULAREMIA BY STATE AND SEASONAL PREDOMINANCE, 1960-1968

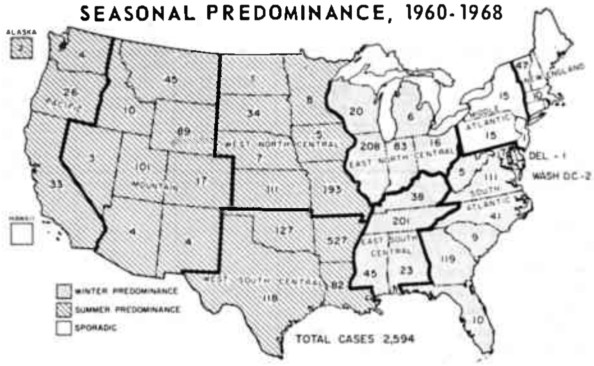
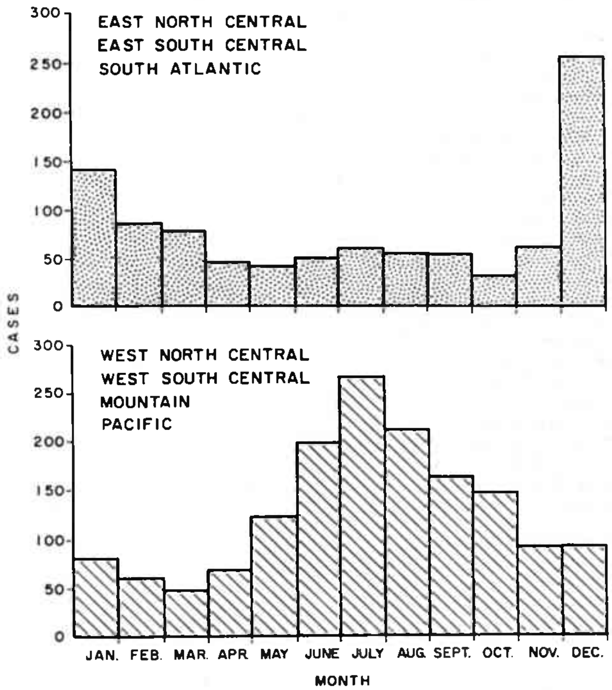


Figure 5
REPORTED CASES OF TULAREMIA BY MONTH AND GEOGRAPHIC AREA
UNITED STATES - 1960-1968



all states except Hawaii had previously reported the disease.

During the 8-year period 1960-1967**, 23 deaths attributable to tularemia were reported for a case fatality ratio of 0.96 percent. This decline was consistent with the continued low mortality rate noted since 1946, the year streptomycin, the most effective drug for treating tularemia, became available. In the decade prior to 1946, the case fatality ratio had been 9.5 percent; while in the decade beginning in 1949, the case fatality ratio was 1.2 percent.

Deaths for the years 1960-1967 were reported from 11 states. Four of these had more than one death: Arkansas (5), Tennessee (4), Oklahoma (4), and Texas (3). The mean age of the 23 patients who died was 55 years, with a range of from 20 to 83 years. Twenty of these patients were male and three were female. Also, 17 resided in rural areas in contrast to six who lived in towns or cities.

The monthly distribution of cases, 1960-1968, for states west of the Mississippi River and those east of the Mississippi, excluding the New England and Middle Atlantic States is presented in Figure 5. In the states west of the Mississippi River, more cases were reported during the summer months; this is consistent with the fact that most tularemia there is transmitted primarily by ticks and other blood-sucking ectoparasites; exposure to these vectors is greatest during the summer months. In Arkansas, for example, in 1961-1965, 85 percent of the 262 cases for which the vector was known were associated with ticks. *(1, 2)* The majority of states east of the Middle Atlantic states, showed a marked predominance of tularemia in the winter months, particularly in December. In this section of the country the principal vector is the cottontail rabbit. In Illinois, Indiana, Georgia, and Tennessee, for example, where the December incidence was highest, the rabbit-hunting season lasts from mid-November to approximately mid-January. The relatively small number of tularemia cases in New England and the Middle Atlantic states occurred sporadically throughout each year for the years 1960-1968, with one major exception, the recent Vermont tularemia outbreak (MMWR, Vol. 17, Nos. 18, 21, and 28 and Vol. 18, No. 23).

(Reported by the Special Pathogens Section, Bacterial Diseases Branch, and the Statistical Services Activity, Epidemiology Program, NCDC.)

(Continued on page 100)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

MARCH 7, 1970 AND MARCH 1, 1969 (9th WEEK)

AREA	ASEPTIC MENIN-GITIS	BRUCEL-LOSIS	DIPH-THERIA	ENCEPHALITIS			HEPATITIS			MALARIA	
				Primary including unsp. cases		Post In-fectious	Serum	Infectious			
	1970	1970	1970	1970	1969	1970	1970	1970	1969	1970	Cum. 1970
UNITED STATES......	25	5	15	21	11	8	112	1,232	993	80	603
NEW ENGLAND...........	–	–	–	3	–	–	6	81	52	1	25
Maine................	–	–	–	–	–	–	–	3	11	–	–
New Hampshire........	–	–	–	–	–	–	–	15	3	–	–
Vermont..............	–	–	–	–	–	–	–	1	2	–	1
Massachusetts........	–	–	–	2	–	–	3	40	23	–	14
Rhode Island.........	–	–	–	1	–	–	–	14	–	1	4
Connecticut..........	–	–	–	–	–	–	3	8	13	–	6
MIDDLE ATLANTIC........	3	2	–	3	2	1	40	236	171	1	80
New York City........	1	–	–	2	–	–	19	73	77	1	15
New York, Up-State...	–	2	–	–	1	–	2	31	22	–	21
New Jersey.*.........	2	–	–	1	–	–	7	51	28	–	23
Pennsylvania.........	–	–	–	–	1	1	12	81	44	–	21
EAST NORTH CENTRAL.....	2	–	2	9	3	2	17	202	166	3	33
Ohio.*...............	–	–	–	3	3	2	4	59	45	–	8
Indiana..............	–	–	–	–	–	–	–	25	16	3	3
Illinois.............	1	–	2	4	–	–	1	40	35	–	4
Michigan.............	1	–	–	2	–	–	12	70	55	–	18
Wisconsin............	–	–	–	–	–	–	–	8	15	–	–
WEST NORTH CENTRAL.....	–	1	–	–	–	–	1	51	33	7	38
Minnesota............	–	–	–	–	–	–	1	10	11	–	–
Iowa.................	–	1	–	–	–	–	–	7	4	–	6
Missouri.............	–	–	–	–	–	–	–	15	2	2	3
North Dakota.........	–	–	–	–	–	–	–	–	6	–	1
South Dakota.........	–	–	–	–	–	–	–	–	–	–	–
Nebraska.............	–	–	–	–	–	–	–	2	3	–	–
Kansas...............	–	–	–	–	–	–	–	17	7	5	28
SOUTH ATLANTIC.........	5	–	–	2	3	1	8	149	87	19	121
Delaware.............	1	–	–	–	–	–	–	3	1	–	1
Maryland.*...........	–	–	–	–	–	–	3	9	14	2	13
Dist. of Columbia....	–	–	–	–	–	–	–	–	–	–	–
Virginia.............	–	–	–	2	1	–	–	13	8	1	9
West Virginia........	–	–	–	–	1	–	–	8	3	–	–
North Carolina.......	2	–	–	–	1	–	1	24	22	10	59
South Carolina.......	–	–	–	–	–	–	–	10	7	6	12
Georgia..............	–	–	–	–	–	–	–	36	12	–	19
Florida..............	2	–	–	–	–	1	4	46	20	–	8
EAST SOUTH CENTRAL.....	1	–	–	–	2	–	1	81	87	3	39
Kentucky.............	1	–	–	–	1	–	–	37	34	2	34
Tennessee............	–	–	–	–	–	–	1	24	31	–	–
Alabama..............	–	–	–	–	–	–	–	10	15	1	5
Mississippi..........	–	–	–	–	1	–	–	10	7	–	–
WEST SOUTH CENTRAL.....	2	1	6	–	–	2	–	73	89	9	120
Arkansas.............	–	–	–	–	–	–	–	4	11	–	–
Louisiana............	–	–	3	–	–	2	–	8	20	3	5
Oklahoma.*...........	1	1	–	–	–	–	–	8	8	6	18
Texas................	1	–	3	–	–	–	–	53	50	–	97
MOUNTAIN...............	–	–	6	2	1	1	3	73	44	29	38
Montana..............	–	–	–	2	–	–	–	2	10	–	–
Idaho................	–	–	–	–	–	1	–	–	4	–	1
Wyoming..............	–	–	–	–	–	–	–	–	–	–	–
Colorado.............	–	–	–	–	1	–	–	33	5	28	34
New Mexico...........	–	–	–	–	–	–	3	12	6	1	1
Arizona.*............	–	–	6	–	–	–	–	9	5	–	2
Utah.................	–	–	–	–	–	–	–	5	14	–	–
Nevada...............	–	–	–	–	–	–	–	12	–	–	–
PACIFIC................	12	1	1	2	–	1	36	286	264	8	109
Washington...........	1	–	1	1	–	–	2	32	32	–	5
Oregon...............	–	–	–	–	–	–	4	26	23	–	7
California...........	11	1	–	1	–	1	29	222	209	8	80
Alaska...............	–	–	–	–	–	–	–	3	–	–	–
Hawaii...............	–	–	–	–	–	–	1	3	–	–	17
Puerto Rico.*..........	---	---	---	---	–	---	---	---	29	---	–
Virgin Islands.........	–	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Aseptic meningitis: Ohio delete 5 (1969)
Brucellosis: Okla. 1 (1969)
Encephalitis, primary: Ohio delete 10 (1969)
Hepatitis, serum: N.J. delete 1, Md. 1 (1969), Ariz. 1
Hepatitis, infectious: N.J. delete 5, P.R. 19

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

MARCH 7, 1970 AND MARCH 1, 1969 (9th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		POLIOMYELITIS		
		Cumulative			Cumulative			Cum.	Total	Paralytic	
	1970	1970	1969	1970	1970	1969	1970	1970	1970	1970	Cum. 1970
UNITED STATES......	1,293	8,967	3,740	68	605	723	2,704	22,579	–	–	1
NEW ENGLAND..........	28	169	166	3	29	21	190	3,042	–	–	–
Maine..............	–	–	2	–	–	1	8	433	–	–	–
New Hampshire........	2	9	37	–	3	–	3	175	–	–	–
Vermont............	1	1	–	2	3	–	11	149	–	–	–
Massachusetts*......	23	121	22	1	10	10	87	904	–	–	–
Rhode Island*........	1	12	7	–	3	3	40	310	–	–	–
Connecticut..........	1	26	98	–	10	7	41	1,071	–	–	–
MIDDLE ATLANTIC........	273	1,403	1,115	12	99	113	197	2,293	–	–	–
New York City........	23	198	677	4	26	18	70	667	–	–	–
New York, Up-State...	4	51	100	1	20	17	–	4	–	–	–
New Jersey*..........	127	647	206	5	28	51	8	682	–	–	–
Pennsylvania*........	119	507	132	2	25	27	119	940	–	–	–
EAST NORTH CENTRAL.....	392	2,150	381	7	83	84	773	5,639	–	–	–
Ohio*..............	125	676	42	4	42	27	108	752	–	–	–
Indiana.............	36	95	79	2	8	12	111	515	–	–	–
Illinois............	180	1,075	72	1	16	11	70	539	–	–	–
Michigan............	28	152	51	–	15	28	181	1,320	–	–	–
Wisconsin...........	23	152	137	–	2	6	303	2,513	–	–	–
WEST NORTH CENTRAL.....	35	1,073	108	3	12	37	220	1,513	–	–	–
Minnesota...........	–	4	1	2	4	7	11	172	–	–	–
Iowa...............	3	24	51	–	3	4	134	940	–	–	–
Missouri*...........	2	119	11	1	5	14	9	33	–	–	–
North Dakota.........	2	45	2	–	–	–	29	146	–	–	–
South Dakota.........	–	36	–	–	–	–	–	1	–	–	–
Nebraska............	26	801	43	–	–	2	22	205	–	–	–
Kansas..............	2	44	–	–	–	10	15	16	–	–	–
SOUTH ATLANTIC.........	179	1,230	739	21	139	141	299	2,192	–	–	–
Delaware............	14	96	6	–	2	3	2	49	–	–	–
Maryland............	18	198	6	–	11	15	13	157	–	–	–
Dist. of Columbia....	44	238	–	–	1	2	19	59	–	–	–
Virginia............	30	232	243	–	8	22	45	433	–	–	–
West Virginia........	4	56	67	–	1	5	82	746	–	–	–
North Carolina.......	19	151	46	10	30	18	NN	NN	–	–	–
South Carolina.......	28	59	46	–	6	16	48	190	–	–	–
Georgia.............	–	2	–	2	24	26	–	–	–	–	–
Florida.............	22	198	325	9	56	34	90	558	–	–	–
EAST SOUTH CENTRAL.....	14	118	28	4	38	32	137	1,581	–	–	–
Kentucky............	3	68	8	1	12	8	50	633	–	–	–
Tennessee...........	10	25	6	2	18	15	75	858	–	–	–
Alabama.............	–	12	–	1	5	7	12	81	–	–	–
Mississippi.........	1	13	14	–	3	2	–	9	–	–	–
WEST SOUTH CENTRAL.....	244	1,991	940	7	102	96	251	2,158	–	–	1
Arkansas............	–	11	2	1	9	11	–	27	–	–	–
Louisiana...........	1	8	2	–	24	30	1	3	–	–	–
Oklahoma............	–	61	101	–	8	8	98	704	–	–	–
Texas...............	243	1,911	835	6	61	47	152	1,424	–	–	1
MOUNTAIN..............	55	366	72	–	6	20	125	995	–	–	–
Montana.............	–	9	2	–	–	1	17	150	–	–	–
Idaho...............	1	5	–	–	–	3	–	47	–	–	–
Wyoming.............	–	–	–	–	–	–	–	10	–	–	–
Colorado............	–	9	7	–	3	3	49	365	–	–	–
New Mexico..........	5	62	30	–	–	4	35	200	–	–	–
Arizona*............	45	273	31	–	1	6	14	164	–	–	–
Utah................	2	4	1	–	2	1	10	59	–	–	–
Nevada..............	2	4	1	–	–	2	–	–	–	–	–
PACIFIC...............	73	467	191	11	97	179	512	3,164	–	–	–
Washington..........	–	35	10	4	14	10	208	1,310	–	–	–
Oregon..............	36	70	30	–	8	6	21	261	–	–	–
California..........	36	340	146	7	74	157	214	1,272	–	–	–
Alaska..............	–	1	4	–	–	–	16	112	–	–	–
Hawaii..............	1	21	1	–	1	6	53	209	–	–	–
Puerto Rico*.........	---	420	96	---	2	2	---		---	---	–
Virgin Islands.......	–	3	–	–	–	–	–	–	–	–	–

*Delayed reports: Measles: Mass. delete 14, R.I. 5 (1969) 9 (1970), N.J. 2, Pa. delete 74, Ohio delete 1, Mo. 109, Ariz. delete 3, P.R. 67

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

MARCH 7, 1970 AND MARCH 1, 1969 (9th 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.....	1,922	11,121	2	12	–	12	4	41	–	–	78	527
NEW ENGLAND...........	65	445	–	1	–	–	–	2	–	–	7	27
Maine..............	5	45	–	–	–	–	–	–	–	–	–	–
New Hampshire.......	3	49	–	–	–	–	–	–	–	–	–	–
Vermont............	17	23	–	–	–	–	–	–	–	–	7	27
Massachusetts.......	30	159	–	1	–	–	–	1	–	–	–	–
Rhode Island........	1	8	–	–	–	–	–	–	–	–	–	–
Connecticut.........	9	161	–	–	–	–	–	1	–	–	–	–
MIDDLE ATLANTIC.......	299	898	–	2	–	–	3	10	–	–	7	41
New York City.......	11	106	–	–	–	–	1	3	–	–	–	–
New York, Up-State..	17	86	–	–	–	–	1	4	–	–	6	39
New Jersey..........	180	336	–	1	–	–	1	1	–	–	–	–
Pennsylvania........	91	370	–	1	–	–	–	2	–	–	1	2
EAST NORTH CENTRAL....	443	2,658	–	2	–	5	–	2	–	–	6	26
Ohio.*.............	60	322	–	–	–	2	–	1	–	–	1	7
Indiana.............	129	533	–	1	–	3	–	–	–	–	1	2
Illinois............	53	303	–	–	–	–	–	–	–	–	1	6
Michigan.*..........	94	710	–	1	–	–	–	1	–	–	1	1
Wisconsin...........	107	790	–	–	–	–	–	–	–	–	2	10
WEST NORTH CENTRAL....	108	1,104	–	–	–	2	–	–	–	–	6	69
Minnesota...........	5	52	–	–	–	–	–	–	–	–	1	15
Iowa................	64	677	–	–	–	–	–	–	–	–	1	15
Missouri............	21	84	–	–	–	2	–	–	–	–	–	16
North Dakota........	11	62	–	–	–	–	–	–	–	–	–	8
South Dakota........	–	1	–	–	–	–	–	–	–	–	–	–
Nebraska............	3	216	–	–	–	–	–	–	–	–	–	2
Kansas..............	4	12	–	–	–	–	–	–	–	–	4	13
SOUTH ATLANTIC........	181	1,306	1	5	–	1	–	10	–	–	22	145
Delaware............	1	11	–	–	–	–	–	–	–	–	–	–
Maryland............	32	70	–	–	–	–	–	3	–	–	–	1
Dist. of Columbia...	1	5	–	1	–	–	–	–	–	–	–	–
Virginia............	51	243	–	–	–	–	–	1	–	–	12	74
West Virginia.......	34	372	–	–	–	–	–	–	–	–	8	30
North Carolina......	2	3	–	–	–	–	–	1	–	–	–	–
South Carolina......	15	55	–	–	–	–	–	–	–	–	–	–
Georgia.............	–	–	–	1	–	–	–	4	–	–	–	25
Florida.............	45	547	1	3	–	1	–	1	–	–	2	15
EAST SOUTH CENTRAL....	105	651	–	–	–	2	1	1	–	–	7	62
Kentucky............	28	236	–	–	–	1	–	–	–	–	5	35
Tennessee...........	65	351	–	–	–	1	–	–	–	–	1	15
Alabama.............	4	49	–	–	–	–	1	1	–	–	1	12
Mississippi.........	8	15	–	–	–	–	–	–	–	–	–	–
WEST SOUTH CENTRAL....	219	1,623	–	1	–	2	–	1	–	–	11	94
Arkansas............	–	–	–	–	–	1	–	1	–	–	1	14
Louisiana...........	–	3	–	1	–	–	–	–	–	–	1	26
Oklahoma............	46	436	–	–	–	1	–	–	–	–	1	8
Texas...............	173	1,184	–	–	–	–	–	–	–	–	8	46
MOUNTAIN..............	91	458	–	–	–	–	–	4	–	–	–	5
Montana.............	14	94	–	–	–	–	–	1	–	–	–	–
Idaho...............	4	13	–	–	–	–	–	–	–	–	–	–
Wyoming.............	1	30	–	–	–	–	–	–	–	–	–	–
Colorado............	17	100	–	–	–	–	–	1	–	–	–	5
New Mexico..........	2	24	–	–	–	–	–	1	–	–	–	–
Arizona.............	15	127	–	–	–	–	–	1	–	–	–	–
Utah................	38	70	–	–	–	–	–	–	–	–	–	–
Nevada..............	–	–	–	–	–	–	–	–	–	–	–	–
PACIFIC...............	411	1,978	1	1	–	–	–	11	–	–	12	58
Washington..........	132	868	–	–	–	–	–	1	–	–	–	–
Oregon..............	39	226	1	1	–	–	–	–	–	–	–	–
California..........	229	763	–	–	–	–	–	10	–	–	12	58
Alaska..............	4	46	–	–	–	–	–	–	–	–	–	–
Hawaii..............	7	75	–	–	–	–	–	–	–	–	–	–
Puerto Rico.†........	---	9	---	2	---	–	---	1	---	–	---	7
Virgin Islands........	–	–	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Rubella: Ohio 1, Mich. 20, P.R. 3
Typhoid fever: P.R. 1

Week No. 9

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED MARCH 7, 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
	All Ages	65 years and over		
NEW ENGLAND:	689	416	49	32
Boston, Mass.---------	216	113	19	16
Bridgeport, Conn.-----	51	27	2	4
Cambridge, Mass.------	24	16	5	–
Fall River, Mass.-----	30	21	2	1
Hartford, Conn.-------	50	28	2	2
Lowell, Mass.---------	13	9	1	–
Lynn, Mass.-----------	18	13	–	1
New Bedford, Mass.----	33	27	4	–
New Haven, Conn.------	46	26	2	3
Providence, R. I.-----	64	35	4	3
Somerville, Mass.-----	8	4	1	–
Springfield, Mass.----	54	42	4	–
Waterbury, Conn.------	23	13	1	–
Worcester, Mass.------	59	42	2	2
MIDDLE ATLANTIC:	3,351	1,967	166	126
Albany, N. Y.---------	40	20	1	1
Allentown, Pa.--------	37	21	4	2
Buffalo, N. Y.--------	137	77	1	8
Camden, N. J.---------	46	27	2	4
Elizabeth, N. J.------	34	16	–	–
Erie, Pa.-------------	50	26	3	2
Jersey City, N. J.----	62	38	2	2
Newark, N. J.---------	94	40	6	7
New York City, N. Y.--	1,779	1,067	91	59
Paterson, N. J.-------	43	26	2	1
Philadelphia, Pa.-----	413	239	15	16
Pittsburgh, Pa.-------	210	110	17	13
Reading, Pa.----------	47	30	–	–
Rochester, N. Y.------	112	74	6	2
Schenectady, N. Y.----	32	25	7	1
Scranton, Pa.---------	41	30	1	1
Syracuse, N. Y.-------	89	47	1	3
Trenton, N. J.--------	24	13	2	3
Utica, N. Y.----------	29	17	3	–
Yonkers, N. Y.--------	32	24	2	1
EAST NORTH CENTRAL:	2,731	1,566	116	128
Akron, Ohio-----------	75	48	1	5
Canton, Ohio----------	44	34	4	2
Chicago, Ill.---------	771	444	31	32
Cincinnati, Ohio------	201	116	7	7
Cleveland, Ohio-------	211	113	6	8
Columbus, Ohio--------	154	93	–	10
Dayton, Ohio----------	88	43	7	7
Detroit, Mich.--------	374	208	18	18
Evansville, Ind.------	18	12	2	–
Flint, Mich.----------	43	15	1	4
Fort Wayne, Ind.------	41	27	4	6
Gary, Ind.------------	15	7	–	2
Grand Rapids, Mich.---	73	41	11	4
Indianapolis, Ind.----	159	90	5	3
Madison, Wis.---------	32	17	3	1
Milwaukee, Wis.-------	135	75	–	7
Peoria, Ill.----------	44	30	2	–
Rockford, Ill.--------	45	34	2	1
South Bend, Ind.------	29	19	5	1
Toledo, Ohio----------	116	62	5	7
Youngstown, Ohio------	63	38	2	3
WEST NORTH CENTRAL:	864	550	41	45
Des Moines, Iowa------	66	43	3	4
Duluth, Minn.---------	15	7	–	1
Kansas City, Kans.----	44	25	1	2
Kansas City, Mo.------	138	91	1	5
Lincoln, Nebr.--------	43	29	2	–
Minneapolis, Minn.----	114	74	6	9
Omaha, Nebr.----------	80	45	2	10
St. Louis, Mo.--------	223	140	14	9
St. Paul, Minn.-------	61	45	3	1
Wichita, Kans.--------	80	51	9	4
Las Vegas, Nev.*	21	12	3	2

Area	All Causes		Pneumonia and Influenza All Ages	Under 1 year All Causes
	All Ages	65 years and over		
SOUTH ATLANTIC:	1,310	698	94	57
Atlanta, Ga.-----------	139	58	11	7
Baltimore, Md.---------	244	141	12	9
Charlotte, N. C.-------	59	31	7	3
Jacksonville, Fla.-----	118	50	15	3
Miami, Fla.------------	120	75	4	3
Norfolk, Va.-----------	38	20	3	–
Richmond, Va.----------	92	51	10	4
Savannah, Ga.----------	40	17	3	4
St. Petersburg, Fla.---	123	90	6	3
Tampa, Fla.------------	87	46	12	4
Washington, D. C.------	208	95	8	14
Wilmington, Del.-------	42	24	3	3
EAST SOUTH CENTRAL:	820	447	68	40
Birmingham, Ala.-------	112	55	6	6
Chattanooga, Tenn.-----	56	36	8	1
Knoxville, Tenn.-------	43	22	7	–
Louisville, Ky.--------	187	110	20	9
Memphis, Tenn.---------	184	94	4	16
Mobile, Ala.-----------	66	36	6	3
Montgomery, Ala.-------	48	26	9	2
Nashville, Tenn.-------	124	68	8	3
WEST SOUTH CENTRAL:	1,346	685	76	64
Austin, Tex.-----------	39	23	3	1
Baton Rouge, La.-------	50	27	8	1
Corpus Christi, Tex.---	26	8	–	1
Dallas, Tex.-----------	199	91	7	11
El Paso, Tex.----------	52	20	4	6
Fort Worth, Tex.-------	100	56	5	3
Houston, Tex.----------	288	134	10	16
Little Rock, Ark.------	78	39	6	4
New Orleans, La.-------	180	99	8	10
Oklahoma City, Okla.---	99	63	7	1
San Antonio, Tex.------	135	68	10	4
Shreveport, La.--------	56	35	5	1
Tulsa, Okla.-----------	44	22	3	5
MOUNTAIN:	579	312	36	19
Albuquerque, N. Mex.---	49	25	4	1
Colorado Springs, Colo.	22	14	3	1
Denver, Colo.----------	170	95	11	2
Ogden, Utah------------	18	10	4	1
Phoenix, Ariz.---------	149	81	3	6
Pueblo, Colo.----------	19	14	1	2
Salt Lake City, Utah---	68	30	4	2
Tucson, Ariz.----------	84	43	6	4
PACIFIC:	1,848	1,128	56	64
Berkeley, Calif.-------	28	18	2	1
Fresno, Calif.---------	53	30	–	4
Glendale, Calif.-------	41	27	–	1
Honolulu, Hawaii-------	42	24	–	2
Long Beach, Calif.-----	105	70	4	1
Los Angeles, Calif.----	578	364	18	11
Oakland, Calif.--------	97	48	2	6
Pasadena, Calif.-------	41	28	1	2
Portland, Oreg.--------	187	122	3	6
Sacramento, Calif.-----	82	43	3	5
San Diego, Calif.------	110	71	2	–
San Francisco, Calif.--	201	110	10	10
San Jose, Calif.-------	40	22	3	2
Seattle, Wash.---------	149	94	4	6
Spokane, Wash.---------	55	34	4	5
Tacoma, Wash.----------	39	23	–	2
Total	13,538	7,769	702	575
Expected Number	13,252	7,804	519	512
Cumulative Total (includes reported corrections for previous weeks)	130,996	76,138	6,706	5,674

*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.

TULAREMIA *(Continued from page 95)*

Editorial Comment:

The decline of tularemia morbidity in the United States since 1939 is probably due to urbanization and ecologic changes, with subsequent decreased human exposure to the vectors of tularemia. The decline in mortality probably reflects both the decline in morbidity and the availability of streptomycin after September 1946.

*Final total for 1969, not yet available.
**Last year for which mortality data are currently available.

References:
(1) Tularemia, 1966. *J. Arkansas Med. Soc.*, *63*:78-79.
(2) Francis, E., 1937. Sources of Infection and Seasonal Incidence of Tularemia in Man. *Pub Hlth Rep.*, *52*:103-113.

EPIDEMIOLOGIC NOTES AND REPORTS

EPIZOOTIC OF BOVINE CYSTICERCOSIS – California

On Feb. 18, 1969, three out of a shipment of 36 fattened cattle from one feedlot, slaughtered in a federally-inspected California packing plant, were found infected with live cysts of *Taenia saginata*. By May 2, a total of 1,612 cattle out of 3,408 slaughtered from this feedlot had been found infected by USDA inspectors.

An investigation was begun in March to determine the source of their infections. Employees of the feedlot were tested three times by stool examinations for infection with *T. saginata*, and numerous feed and water samples were examined for the presence of *Taenia* eggs. All tests were negative. Feeding trials, using cattle from herds free of cysticercosis, were then done to determine if one of the feed components was contaminated, but no feed component could be incriminated.

During the investigation it was learned that this feedlot pumped water for its cattle from irrigation canals; it was the only one in this agricultural valley to do so. Early in January and February, heavy rains had produced the worst floods in 90 years in the valley, and homes in several migrant labor camps including their cesspools and pit privies had been inundated. The drainage from these areas had access to the canal from which the feedlot obtained its water. This was thought to be the source of the infections, although a stool survey in one of the labor camps was negative for *T. saginata* infections. A recommendation was made that the feedlot obtain water for its cattle from wells rather than from irrigation canals. No new infections were reported after May 2, 1969.

(Reported by Robert R. Brown, D.V.M., Supervisory Veterinary Medical Officer, Animal Health Division, Agricultural Research Service, United States Department of Agriculture, Fresno, California; and two EIS Officers.)

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