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EPIDEMIOLOGIC NOTES AND REPORTS

FOLLOW-UP ON POLIOMYELITIS – Connecticut

No further cases of paralytic poliomyelitis have been reported to CDC from the New England area; the last case occurred October 17. Type 1 poliovirus has been confirmed as the etiologic agent in nine of the 11 suspect cases initially reported; laboratory confirmation of the other two is still pending.

On October 26, the date of mass immunization of the students at the Christian Science school, sera and rectal swabs were collected from a sample of apparently unaffected children to determine the extent of dissemination of the virus among the general student body. Laboratory tests on eight males and six females have been completed to date. Serum specimens from all eight males were positive for type 1 polio by serum neutralization antibody titration, with seven demonstrating titers ≥ 1:128. Three of the six females also had titers ≥ 1:128, two had no demonstrable antibody titers, and one previously vaccinated female had a positive serology to all three polio types. None of the others sampled demonstrated detectable antibody titers to polio types 2 or 3. Type 1 poliovirus was also isolated from six asymptomatic members of the soccer and football teams with positive serologies to type 1 polio.

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TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	44th WEEK ENDING		MEDIAN 1967-1971	CUMULATIVE, FIRST 44 WEEKS		
	November 4, 1972	November 6, 1971		1972	1971	MEDIAN 1967-1971
Aseptic meningitis	144	77	107	3,582	4,501	3,817
Brucellosis	4	2	3	163	141	192
Chickenpox	1,177	– – –	– – –	118,728	– – –	– – –
Diphtheria	4	3	4	94	153	153
Encephalitis, primary:						
Arthropod-borne and unspecified	52	37	37	960	1,303	1,303
Encephalitis, post-infectious	2	3	6	239	300	345
Hepatitis, serum (Hepatitis B)	151	187	124	7,645	7,348	4,467
Hepatitis, infectious (Hepatitis A)	1,075	1,172	1,047	46,399	51,310	40,017
Malaria	17	33	88	769	2,618	2,618
Measles (rubeola)	196	339	253	28,009	71,673	41,668
Meningococcal infections, total	28	27	30	1,143	1,950	2,093
Civilian	28	27	28	1,099	1,743	1,879
Military	–	–	1	44	207	207
Mumps	896	1,630	– – –	60,925	106,615	– – –
Rubella (German measles)	246	221	317	22,610	40,881	45,769
Tetanus	–	5	4	98	95	134
Tuberculosis, new active	604	– – –	– – –	28,524	– – –	– – –
Tularemia	3	5	4	113	166	150
Typhoid fever	7	8	8	310	342	338
Typhus, tick-borne (Rky. Mt. spotted fever)	5	5	3	509	392	328
Venereal Diseases:†						
Gonorrhea	14,967	13,939	– – –	635,509	558,753	– – –
Syphilis, primary and secondary	510	471	– – –	21,286	20,009	– – –
Rabies in animals	77	59	56	3,529	3,444	2,937

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	2	Poliomyelitis, total: Conn. – 2, N.Y. Ups. – 1	18
Botulism:	8	Paralytic: Conn. – 2, N.Y. Ups. – 1	17
Congenital rubella syndrome: Mich. – 1, N.Y. Ups. – 2	30	Psittacosis:	30
Leprosy: Hawaii – 4, Tex. – 1	107	Rabies in man:	1
Leptospirosis: Va. – 1	33	Trichinosis: N.J. – 1	71
Plague:	1	Typhus, murine:	13

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

POLIOMYELITIS – Continued

An illness survey was conducted among students in grades 7-12, excluding the paralytic cases, and 61.5% of the males and 40.4% of the females reported non-specific symptoms compatible with mild viral illness in the preceding month. The symptoms most frequently reported by males were headache, cough, and myalgia, and by females, nasal congestion and sore throat.

Travel histories from all students revealed that three had traveled outside the United States in the 2 months prior to onset of the epidemic; two had been in western Europe and one in Martinique in the French West Indies.

(Reported by George Kraus, M.D., Director of Health, Greenwich, Connecticut Health Department; James C. Hart, M.D., State Epidemiologist, Connecticut State Department of Health; and an EIS Officer.)

COLORADO TICK FEVER – Colorado

On April 27, 1972, a 10-year-old girl from Colorado Springs, Colorado, had onset of anorexia, sore throat, dysphagia, nausea, and vomiting. She consulted a private physician on April 29. Physical examination revealed a temperature of 104.4°F., erythematous tympanic membranes, purulent pharyngeal exudate, and markedly tender cervical adenopathy. The patient stated that she had been bitten on the back of her neck by a tick on April 23. The patient was treated with penicillin, 1.2 million units intramuscularly and 400,000 units 4 times a day orally.

The next day, she returned to her physician complaining of epistaxis and hematemesis. She had a temperature of 104°F., a petechial rash on her upper thorax and arms, evidence of mild dehydration, and was admitted to a local hospital.

On admission, the patient was somewhat somnolent and lethargic with a blood pressure of 108/72 and pulse of 84. Laboratory tests revealed a hemoglobin of 15.1, hematocrit of 44, and a white blood cell count of 10,800 with a shift to the left. Coagulation studies showed elevated prothrombin, partial thromboplastin, and Lee-White coagulation times. The patient also had marked thrombocytopenia, decreased fibrinogen, and a fibrin split product titer of 1:256. A lumbar puncture showed a total cell count of 176 with 149 leukocytes (81 PMNS) and 27 erythrocytes. The fluid was clear and colorless with a glucose of 68 mg% and a protein of 92 mg%. The patient was started on penicillin and tetracycline. The next day, the patient's hemoglobulin dropped from 14 to 10, secondary to massive gastrointestinal bleeding. Blood chemistries revealed an SGOT of 700 and BUN of 96. The patient was transfused with fresh whole blood and given parenteral vitamin K. On the third hospital day, the patient was in shock with a blood pressure of 70 mm Hg by palpation and pulse of 140/minute. Laboratory tests revealed an SGOT of 700, total bilirubin of 0.3 mg%, and total serum protein of 5.0 mg%. All bacterial cultures were negative.

The patient remained in shock the next day and continued to have intermittent gastrointestinal bleeding. She was unresponsive to multiple transfusions of whole blood and platelets. Endoscopy revealed multiple punctate gastric ulcers. Blood chemistry revealed a potassium of 7.4 meq/l, pH of 7.06, BUN of 147 mg%, and creatinine of 7.0 mg%. The patient was thought to have acute renal failure with acute tubular necrosis, and peritoneal dialysis was subsequently begun. However, the patient died shortly thereafter of a cardiac arrest.

Gross autopsy findings revealed multiple punctate focal necrosis with mononuclear cell infiltrate in the brain, liver, and spleen, and throughout the entire gastrointestinal tract. The kidneys showed evidence of acute tubular necrosis. Colorado Tick Fever virus was subsequently isolated from two postmortem blood specimens.

(Reported by Donald L. Dawson, M.D., Department of Pathology, Penrose Hospital, Colorado Springs; Thomas M. Vernon, M.D., State Epidemiologist, Colorado State Department of Public Health; and an EIS Officer.)

Editorial Note

This case emphasizes several salient features of Colorado Tick Fever. The disease is virtually indistinguishable from Rocky Mountain Spotted Fever in its early phase. In 47% of cases with a clinical diagnosis of Rocky Mountain Spotted Fever, the true diagnosis was Colorado Tick Fever *(1)*. The patient described had two unusual complications of the disease: extensive bleeding and death. Extensive bleeding has been reported in four cases *(2)*, but disseminated intravascular coagulation has not been previously proven. Central nervous system complications have been reported in seven cases. Only one death has been reported.

References

1. Spruance SL, and Bailey A: Colorado Tick Fever: A review of 115 laboratory confirmed cases. Archives of Internal Medicine, in press.
2. Eklund CM, Kohls GM, Jellison WL, Burgdorfer W, Kennedy RC, Thomas L: The clinical and ecological aspects of Colorado Tick Fever. Proc 6th Int Confr Trop Med and Malar 5:197-203, 1959.

CURRENT TRENDS
A METHOD FOR RAPID DIAGNOSIS OF INFLUENZA OUTBREAKS

Two principal procedures are available to establish the occurrence of influenza: isolation of the virus and a rise in titer of influenza antibody between acute and convalescent serum specimens.

The importance of isolation of influenza viruses cannot be overstressed. Only when a virus has been isolated during an outbreak can the type of influenza virus causing the outbreak and its relationship to previous ones be established with certainty. Even though multiple virus isolates obtained from the same epidemic will undoubtedly confirm that the epidemic is caused by a specific influenza virus, virus isolation is neither a convenient nor practical means of laboratory documentation of epidemics. Theoretically, it should be possible to isolate and identify an influenza virus in as little as 48 hours; but, in practice it may take a week or more before an isolate is identified; multiple blind passages of virus may be required before an isolation is made. Finally, it is much easier to demonstrate a diagnostic rise in antibody than to isolate a virus from a single infected person.

Serologic diagnosis of influenza infection is most readily made by the hemagglutination-inhibition (HI) or by complement fixation (CF) tests. CF or HI tests can be run within

a 24-hour period; however, there is considerable time lag in making a serologic diagnosis since collection of acute and convalescent sera from the same individual takes 2 to 3 weeks. To minimize this time lag, a number of investigators *(1,2,3)* have compared groups of acute and convalescent sera taken from one epidemic, but from different persons.

By the time the presence of an epidemic has been established, there are usually a number of individuals in the community who are already convalescent from the illness, while a number of other persons are in the early acute stages. At one point in time, 10 or more acute specimens and 10 or more convalescent specimens can easily be collected. Since influenza antibody levels vary by age and by influenza vaccination status, the acute and convalescent groups should be equivalent with respect to age and preferably consist of unvaccinated individuals.

The same serologic test (CF or HI) is performed in a single run on each of the sera in each of the groups. Geometric mean titers are then calculated for the acute and the convalescent groups. Although for any single individual a fourfold rise in titer constitutes a diagnostic rise, a fourfold rise in geometric mean titer is clearly too stringent a criterion for documentation of an epidemic: for instance, if six of 10 persons involved in the same outbreak had exactly a fourfold rise in influenza antibody and the remaining four had no rise, one would not hesitate in making the diagnosis of an influenza outbreak even though the geometric mean titer rise for the group of 10 was less than fourfold.

The statistical significance of a comparison between acute geometric mean titers (GMT) and convalescent GMT must be made by using log titers because of the marked non-normality of titer data. A conventional Student's T test is then performed on the log titers.

The comparison of acute and convalescent sera can apply to most epidemic illnesses for which a diagnosis can be made serologically. In some instances, when acute specimens are not available, one may be tempted to compare persons who did not become ill with persons who are convalescent. This may be possible; however, persons who did not become ill, may have had pre-existing high titers and not have become ill because they were already immune to the agent. In this event, the "not ill" group will have a high geometric mean titer and will not differ significantly from the convalescents. *(Reported by the Viral Diseases Branch, Epidemiology Program, CDC.)*

References

1. Milstone JH, *et al:* 1945 Influenza B Epidemic in the Pacific Area. Military Surgeon, December 1946
2. Grist NR, *et al:* Rapid Serological Diagnosis of an Outbreak of Influenza. Brit Med J 2:5249, 1961
3. National Communicable Disease Center: Influenza-Respiratory Disease Surveillance Report, No. 82, 30 June 1966

EPIDEMIOLOGIC NOTES AND REPORTS
DENGUE-2 INFECTION – Puerto Rico

In July 1972, an increase in the incidence of febrile illness with rash was reported in the Guanica-Ensenada area of Puerto Rico. An investigation to define the extent and etiology of the illness was subsequently initiated.

From August 22 to 24 and September 12 to 13, two house-to-house surveys in the Guanica-Ensenada area were conducted to determine the incidence of all febrile illness since June 1, 1972, and the presence of *Aedes aegypti* mosquito larvae. Six geographic subdivisions were selected for the studies, and every fifth occupied house was visited. A total of 263 families were interviewed, and data were obtained on 1,156 persons, approximately 13% of the population.

Investigation revealed that the overall attack rate for febrile illness for the 15-week period was 245 per 1,000 population. The attack rates by date of onset are shown in Figure 1, and the attack rates by geographic subdivisions are depicted in Figure 2. There was no striking predilection for a specific age group, and no significant differences in sex-specific attack rates were noted. No hemorrhagic manifestations were reported.

Blood specimens were obtained from persons who had experienced fever within 10 days of the interview. Of the 39 pairs of acute and convalescent sera collected, 22 showed evidence of recent dengue-2 infection by the complement fixation test, five were inconclusive, and 12 were definitely not dengue. Of 22 additional sera drawn in July and August as part of serologic dengue surveillance, 18 showed evidence of recent dengue-2 infection.

Further investigation revealed that 20.7% of the houses examined in the first survey were positive for *A. aegypti* larvae and that 17.8% were positive in the second survey. In the first survey, 1.3 *A. aegypti* adults per man/hour were

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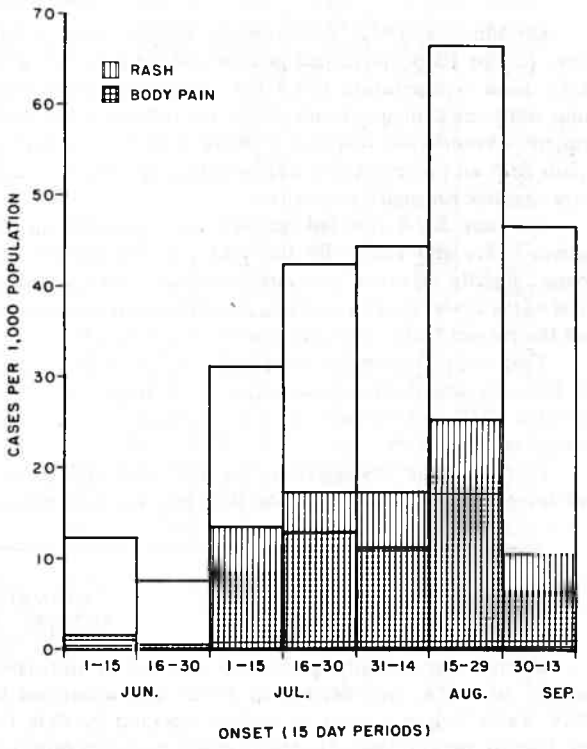
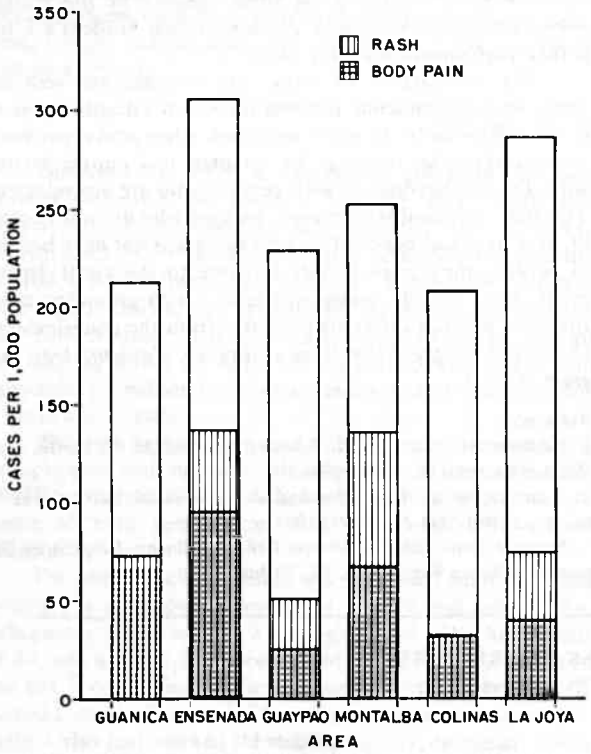
Figure 1
FEBRILE ILLNESS ATTACK RATES, BY DATE OF ONSET
GUANICA-ENSENADA, PUERTO RICO – JUNE 1-SEPT. 13, 1972



DENGUE-2 INFECTION – Continued

Figure 2
FEBRILE ILLNESS ATTACK RATES, BY AREA
GUANICA-ENSENADA, PUERTO RICO – JUNE 1-SEPT. 13, 1972



collected; 2.7 adults were collected per man/hour in the second survey. Large water barrels were the most frequent breeding sites (Table 1).

Following the investigation, selective *Aedes* control measures were instituted.

Table 1
Types of Containers with *Aedes aegypti* Larvae in Guanica-Ensenada
August-September 1972

Type of Container	Number of Houses with Container		Percent of Total	
	Survey 1	Survey 2	Survey 1	Survey 2
50-gallon barrel	22	30	35.4	47.6
1- to 5-gallon can	12	7	19.3	11.4
Old tires	6	11	9.6	17.4
Animal watering pans	10	2	16.1	3.2
Buckets	6	3	9.6	4.8
Miscellaneous	7	10	10.0	15.6
Total	63	63	100.0	100.0

(Reported by the Puerto Rico Department of Health; the San Juan Tropical Disease Laboratories, Ecological Investigations Program, the Arbovirology Section, Virology Branch, Laboratory Division, CDC; an EIP Officer and an EIS Officer.)

Editorial Note

In 1963-64 and 1968-69, Puerto Rico experienced explosive epidemic activity of dengue-3 and dengue-2 viruses, respectively. During the inter-epidemic period, there was no evidence of endemic dengue activity. However, since 1969, the persistence of dengue-2 transmission in western and southwestern Puerto Rico has been demonstrated serologically and by virus isolation. Foci of dengue-2 activity were recognized in 1971-72 and 1972.

DENGUE – Puerto Rico

On June 19, 1972, a 27-year-old woman living in San Juan, Puerto Rico, developed general malaise progressing to chills, fever (temperature 102.4°F.), severe generalized muscular and bone pain, and headache by the following day. Subsequent examination revealed a white blood cell count of 4,200 with an unremarkable differential count. Thick smears were negative for malaria parasites.

On June 23, a fine red macular rash appeared on the patient's face and trunk. By the next day, the rash became coarse, slightly elevated, and more confluent, and spread to most of the body. No hemorrhagic manifestations were noted, and the patient had a complete recovery by June 28.

Two serum specimens were collected from the patient on June 20 and yielded dengue type 2. A diagnostic rise in the titer of HI and CF antibody was observed in paired acute and convalescent sera.

Epidemiologic investigation revealed that the patient had traveled to Colombia on June 9 to join her husband, an epidemiologist temporarily in Colombia to observe the 1971-72 dengue outbreak. On June 10, for approximately 6 hours, the patient visited the small community of Buena Vista, Cordoba, which was experiencing an outbreak of suspected dengue. The remainder of her stay in Colombia was spent in areas known to be free of *Aedes aegypti*.

(Reported by the Puerto Rico Department of Health; the San Juan Tropical Disease Laboratories, Ecological Investigations Program and the Arbovirology Section, Virology Branch, Laboratory Division, CDC.)

Editorial Note

Although sporadic endemic dengue cases have been recognized in Puerto Rico since the 1969 epidemic, it is almost certain that this traveler was infected while in Colombia. Endemic activity in Puerto Rico during the past year appears to be limited to the southwest part of the Island, and the patient had not traveled to this region for several months.

SURVEILLANCE SUMMARY

MUMPS – United States, 1962-71

Mumps was initially placed on the list of notifiable diseases in 1922, was deleted in 1950, and reinstated in 1968. Table 2 depicts cases of mumps reported by state for the 10-year period 1962-71. Many states have not reported cases of mumps, and there is considerable variation in the number of cases reported for a given year in states with similar geographic and demographic characteristics.

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Table 2
Reported Cases of Mumps, by States – 1962-1971

	No. of States Reporting									
	38	38	38	38	40	43	All	All	All	All
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
UNITED STATES	**114,237**	**180,448**	**212,932**	**114,491**	**128,295**	**185,691**	**152,209**	**90,918**	**104,953**	**121,924**
NEW ENGLAND						**27,058**	**17,377**	**13,116**	**11,537**	**7,278**
Maine	2,424	2,254	2,271	2,844	3,459	1,138	1,091	1,461	927	1,312
New Hampshire	1,338	520	411	6	379	351	333	418	485	692
Vermont	1,644	1,475	2,120	498	776	1,689	1,265	1,298	767	498
Massachusetts	10,449	12,196	12,465	6,311	7,625	11,642	9,024	4,475	3,270	1,844
Rhode Island	2,226	2,744	2,583	1,775	1,966	4,386	1,668	1,378	2,384	1,322
Connecticut	5,051	10,524	7,118	4,816	8,550	7,852	3,996	4,086	3,704	1,610
MIDDLE ATLANTIC						**3,305**	**7,900**	**6,246**	**9,705**	**6,909**
New York City	5,561	6,978	2,743	6,266	5,947	3,305	3,890	3,978	3,224	2,081
Upstate New York										
New Jersey							4,010	1,973	2,868	1,820
Pennsylvania								295	3,613	3,005
EAST NORTH CENTRAL						**77,972**	**44,051**	**22,406**	**30,063**	**47,481**
Ohio	4,698	10,459	11,973	3,611	7,407	12,673	2,633	2,212	5,077	8,858
Indiana	3,088	3,394	6,853	2,469	3,423	5,684	4,292	2,888	2,481	5,371
Illinois	4,685	8,568	14,598	4,890	6,575	10,845	5,404	3,212	2,387	5,332
Michigan	8,620	10,688	19,867	9,419	10,798	18,023	14,655	5,215	7,825	10,748
Wisconsin	19,118	38,413	27,711	16,905	21,511	30,747	17,067	8,879	12,293	17,172
WEST NORTH CENTRAL						**11,141**	**17,367**	**6,622**	**5,621**	**10,297**
Minnesota	63	64	161	73	93	375	698	746	606	1,420
Iowa	2,186	3,959	9,105	3,871	3,397	7,686	12,539	4,533	3,546	5,721
Missouri	902	1,218	1,388	1,221	1,256	574	1,183	439	521	1,151
North Dakota	3,332	2,211	1,294	2,120	1,643	2,044	1,571	460	314	425
South Dakota	136	24	31	46	26	1	1		57	309
Nebraska	113	79	193	238	119	384	596	258	412	240
Kansas						77	781	186	165	1,031
SOUTH ATLANTIC						**15,223**	**9,060**	**7,258**	**10,690**	**8,766**
Delaware	746	214	447	320	242	614	311	141	379	188
Maryland	1,231	2,094	1,159	1,231	1,642	2,873	1,197	600	1,160	822
District of Columbia	249	408	106	194	214	274	255	101	230	101
Virginia							1,266	1,334	2,271	1,085
West Virginia	1,801	4,240	7,154	2,317	3,972	5,178	3,482	2,905	2,591	2,670
North Carolina										
South Carolina					280	685	287	481	1,028	915
Georgia						86	10	5	1	11
Florida	2,798	3,603	5,715	2,030	3,276	5,513	2,252	1,691	3,030	2,974
EAST SOUTH CENTRAL						**5,287**	**7,951**	**4,043**	**6,205**	**8,964**
Kentucky	3,516	3,126	6,351	2,459	2,309	3,762	2,830	1,417	2,269	2,534
Tennessee							4,321	2,339	3,462	5,232
Alabama	470	906	1,709	459	427	1,018	550	236	401	1,036
Mississippi	504	731	985	371	473	507	250	51	73	162
WEST SOUTH CENTRAL						**789**	**11,901**	**9,463**	**9,048**	**9,680**
Arkansas	216	830	1,014	240	542	393	30	73	165	158
Louisiana							69	28	50	162
Oklahoma						396	191	1,020	2,683	217
Texas							11,611	8,342	6,150	9,143
MOUNTAIN						**9,494**	**8,355**	**5,944**	**5,185**	**4,943**
Montana						107	631	766	827	453
Idaho	750	747	974	852	259	871	548	220	133	183
Wyoming	293	147	217	164	33	226	358	8	46	426
Colorado	2,731	5,683	5,463	2,199	3,604	5,310	2,789	958	1,677	1,636
New Mexico	347	930	507	71	282	277	983	1,052	794	770
Arizona	2,240	4,496	4,426	3,231	2,097	1,872	2,032	2,556	1,486	1,274
Utah	540	592	2,107	1,370	371	404	696	355	142	201
Nevada	107	278	380	158	54	427	318	29	80	N.A.
PACIFIC						**35,422**	**28,245**	**15,820**	**16,899**	**17,309**
Washington	7,675	14,009	21,496	9,604	10,541	12,375	7,891	5,175	6,987	6,816
Oregon					78		1,025	669	1,436	1,772
California	11,510	18,110	25,119	17,827	11,113	19,466	17,598	8,348	6,357	7,654
Alaska	145	938	712	1,423	737	394	705	1,001	461	130
Hawaii	734	2,598	4,006	592	799	3,187	1,026	627	1,669	937
Puerto Rico	755	1,227	1,007	1,193	1,082	1,049	1,031	1,097	946	1,389

Source: Reported Incidence of Notifiable Disease in the United States, Annual Supplement for respective year. (Reporting was voluntary during years 1950–1967.)

**Includes District of Columbia

MUMPS – Continued

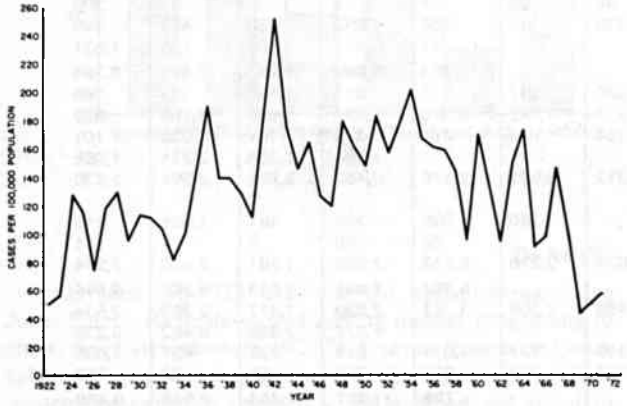
The yearly incidence of reported mumps in the nation fluctuates considerably, without any discernible pattern (Figure 3). However, since vaccine licensure in December 1967, there has been a modest decline in the reported incidence.

Reporting of mumps cases by age from New York City (1965-69) and California (1967-70) showed that mumps was predominantly a childhood disease, but that cases also occurred in adolescents and adults. More than 50% of reported cases occurred in the 5-9 year age group, and approximately 90% of reported cases were in children less than 15. However, significant numbers of cases occurred in postpubertal persons.

The only complication of mumps for which reliable data are available is mumps encephalitis, which includes all central nervous system and meningeal involvement due to this disease. Although no quantitative estimate is available, it is likely that many cases reported as mumps encephalitis are, in fact, due to other viral agents.

The peak incidence of mumps encephalitis, as reported by California, Washington, Illinois, and New York City for the period 1967-70, occurred during the spring and early summer months. This seasonal pattern is similar to that of mumps itself.

Figure 3
REPORTED CASES OF MUMPS – UNITED STATES, 1922-1971



The age distribution of cases of mumps encephalitis for the entire United States reported from 1967 through 1970 showed that 50% of the cases occurred in children 5-9 years old, and 85% occurred in children under 15. Sex distribution for the same period showed that 70% of all reported cases occurred in males and that there was a male predominance in all age groups. In contrast, there was equal sex distribution in uncomplicated mumps cases.

Between 1960 and 1969 in states that report both mumps and mumps encephalitis, two to four cases of mumps encephalitis were reported for every 1,000 cases of mumps (Table 3). Between 1960 and 1968, the nationwide case fatality ratio for mumps ranged from 1.6 to 3.8 fatalities per 10,000 cases of mumps.

Table 3
Reported Cases of Mumps Encephalitis and Mumps from States Reporting Both Diseases, 1960-1969

Year	Number States Reporting	Cases of Mumps	Cases of Mumps Encephalitis	Mumps Encephalitis per 1,000 Cases of Mumps
1960	24	167,336	373	2.23
1961	24	132,021	254	1.92
1962	24	92,018	190	2.06
1963	24	152,482	450	2.95
1964	24	176,538	688	3.90
1965	24	93,897	380	4.05
1966	24	104,183	344	3.30
1967	30	174,742	733	4.19
1968	37	140,735	411	2.92
1969	32	70,142	204	2.91

(Reported by the Investigations and Evaluations Section, Field Services Branch, Epidemiology Program, CDC.)

A copy of the original report from which these data were derived is available on request from
Center for Disease Control
Attn: Chief, Investigations & Evaluations Section
Field Services Branch, Epidemiology Program
Atlanta, Georgia 30333

SALMONELLA – United States, 1971

In 1971, 25,694 isolations of salmonella from humans were reported to CDC, representing a 6.1% increase from the 24,216 reported for 1970 and a 16.6% increase from the 21,413 reported in 1969. A total of 5,832 recoveries of salmonella from nonhuman sources were reported in 1971, a decrease of 50% from 1970 and 38.3% from 1969. Since 1963, the first full year of operation of the present salmonella surveillance system, the incidence of reported isolations of salmonella has remained relatively constant.

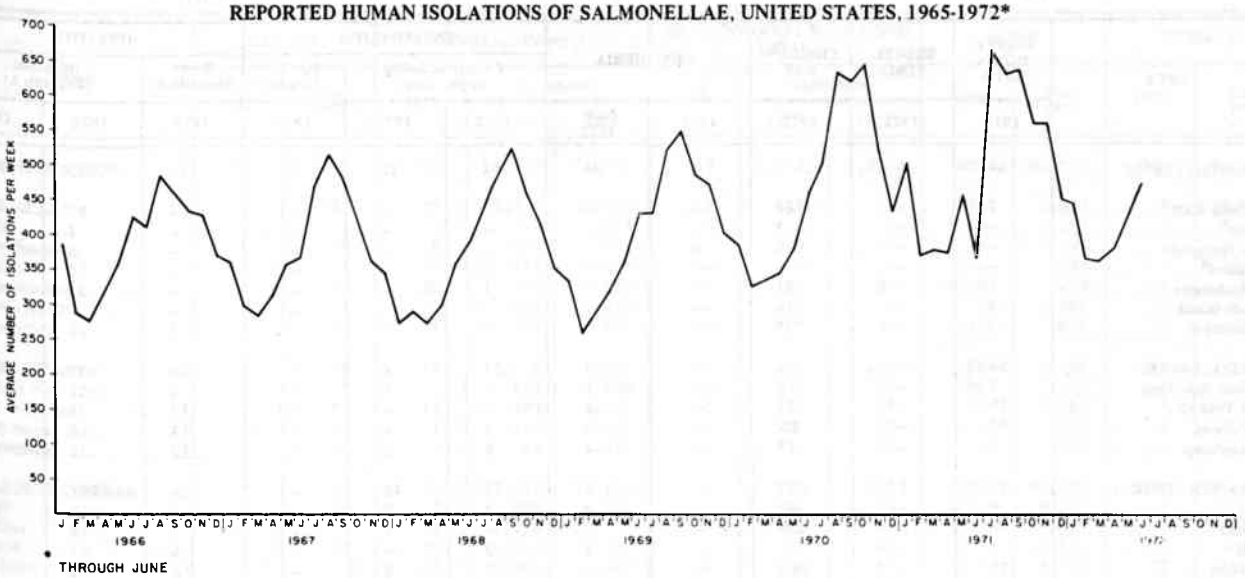
The best available measure of the case fatality ratio of clinical salmonellosis can be obtained by studying investigated outbreaks. In 44 outbreaks reported in 1971, 11 deaths occurred in 1,391 patients, representing a death to case ratio of 0.79%. In the years 1962-1970, 98 deaths were reported in 24,013 persons involved in 287 outbreaks, for a case fatality ratio of 0.41%.

The seasonal distribution of salmonella isolations from humans for the period 1965-1971 shows a consistent pattern, with the greatest number of isolations being reported from July through October each year and the lowest number from January through April (Figure 4).

The geographic distribution of salmonella isolations in 1971 showed California reporting the largest number, 2,859. Other states reporting over 1,000 isolations were New York, Pennsylvania, Illinois, Texas, Florida, and Massachusetts (Figure 5). The rate of incidence of salmonella infection for the entire country was 12.6 per 100,000 population. Hawaii reported the highest incidence, with 77.1 isolations per 100,000 population. Other areas reporting incidence rates higher than 20 per 100,000 were New Mexico, Maryland, Georgia, Massachusetts, Alaska, Florida, Arizona, and Washington, D.C.

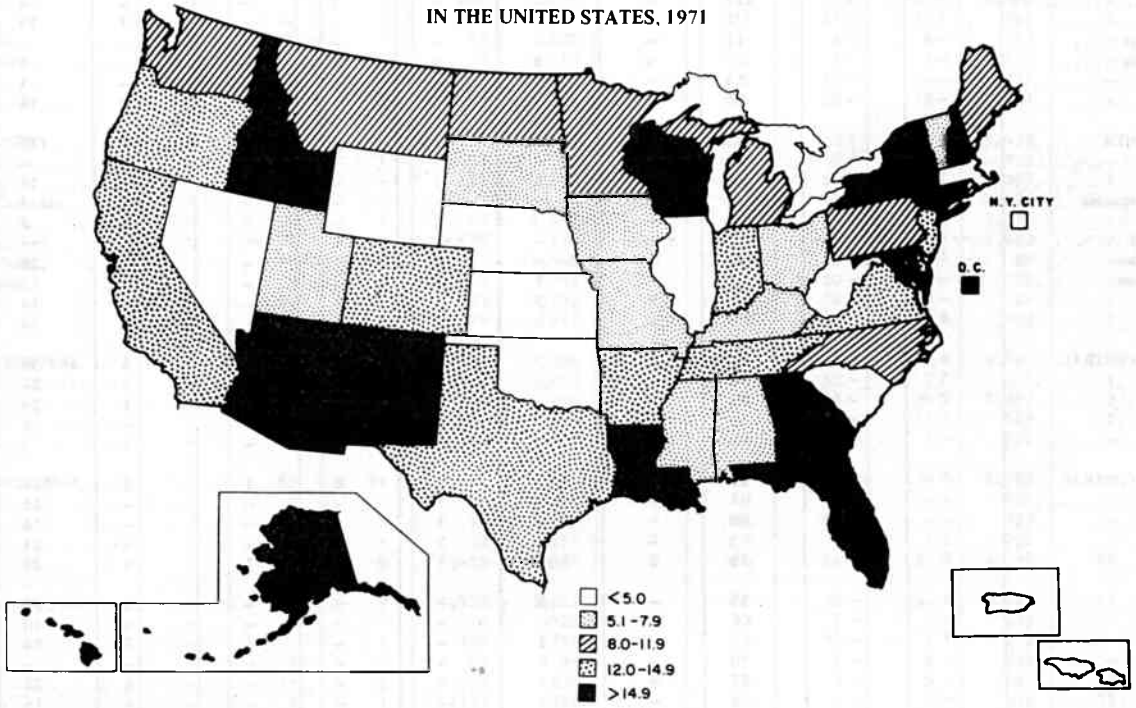
Age was reported for 19,137 individuals in 1971; 13,176 (69%) were less than 20 years of age, an increase of 9% for this age group compared with 1970. In 1971, the number of

Figure 4
REPORTED HUMAN ISOLATIONS OF SALMONELLAE, UNITED STATES, 1965-1972*



* THROUGH JUNE

Figure 5
NUMBER OF HUMAN ISOLATIONS OF SALMONELLA PER 100,000 POPULATION IN THE UNITED STATES, 1971



isolations per 100,000 population in various age groups closely approximated those for the years 1963 through 1970, however, the rates in the age group less than 10 appear to be increasing over the past 8 years. This is particularly true in the less-than-1 year age group.

Of the 25,472 individuals for whom sex was reported in 1970, 12,867 (50.5%) were males, and 12,605 (49.5%) were females. There was a preponderance of males in the age groups under 20 years, and the opposite was true for age groups over 20 years. The same distribution has been seen for the past 8 years and is thought to be related to an inherent increased susceptibility in males, especially infants, and a higher degree of exposure of adult females to sick children.

A total of 176 different salmonella serotypes, 12% of the more than 1,400 known salmonella serotypes, were reported in 1971, compared with 171 in 1970. *Salmonella typhimurium* and *S. typhimurium var. copenhagen*, as in previous years, were the most common serotypes, accounting for 26.8% of all isolations.

(Continued on page 384)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING NOVEMBER 4, 1972 AND NOVEMBER 6, 1971 (44th WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post Infectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
	1972	1972	1972	1972	Cum. 1972	1972	1971	1972	1972	1972	1971
UNITED STATES	144	4	1,177	4	94	52	37	2	151	1,075	1,172
NEW ENGLAND	7	–	144	–	–	1	–	–	7	83	82
Maine*	–	–	1	–	–	–	–	–	–	1	6
New Hampshire	–	–	4	–	–	–	–	–	–	6	6
Vermont*	–	–	9	–	–	–	–	–	–	13	11
Massachusetts	1	–	51	–	–	1	–	–	–	34	31
Rhode Island	3	–	44	–	–	–	–	–	–	–	7
Connecticut	3	–	35	–	–	–	–	–	7	29	21
MIDDLE ATLANTIC	64	–	36	–	3	11	4	–	38	135	150
Upstate New York	2	–	2	–	1	–	1	–	4	32	29
New York City	15	–	27	–	2	–	–	–	13	31	39
New Jersey	45	–	NN	–	–	5	–	–	11	48	63
Pennsylvania	2	–	7	–	–	6	3	–	10	24	19
EAST NORTH CENTRAL	31	1	627	–	4	12	12	–	26	191	207
Ohio	9	–	48	–	–	7	7	–	4	33	40
Indiana	–	–	109	–	–	–	1	–	1	18	19
Illinois	8	–	–	–	3	3	–	–	4	57	62
Michigan	14	–	203	–	1	2	3	–	16	75	76
Wisconsin	–	1	267	–	–	–	1	–	1	8	10
WEST NORTH CENTRAL	1	–	188	2	11	5	5	–	3	50	37
Minnesota	–	–	22	–	–	4	3	–	–	4	3
Iowa	–	–	117	–	–	–	1	–	–	4	8
Missouri	1	–	4	–	–	1	–	–	1	19	3
North Dakota	–	–	11	–	–	–	–	–	–	–	7
South Dakota	–	–	–	2	8	–	1	–	–	6	10
Nebraska	–	–	14	–	3	–	–	–	–	1	1
Kansas	–	–	20	–	–	–	–	–	2	16	5
SOUTH ATLANTIC	14	1	19	–	10	5	1	–	18	116	187
Delaware	–	–	3	–	–	–	–	–	–	–	3
Maryland	3	–	9	–	1	1	–	–	7	19	31
District of Columbia	2	–	–	–	–	–	–	–	–	2	–
Virginia*	2	1	–	–	–	2	–	–	–	8	28
West Virginia	---	---	---	---	–	---	–	---	---	---	8
North Carolina	1	–	NN	–	–	–	1	–	1	26	53
South Carolina	–	–	7	–	1	–	–	–	1	13	3
Georgia	–	–	–	–	3	–	–	–	–	14	11
Florida	6	–	–	–	5	2	–	–	9	34	50
EAST SOUTH CENTRAL	6	–	23	–	7	7	–	–	4	56	67
Kentucky	3	–	14	–	–	–	–	–	–	24	25
Tennessee	2	–	NN	–	–	5	–	–	1	24	33
Alabama	1	–	9	–	7	2	–	–	–	5	9
Mississippi	–	–	–	–	–	–	–	–	3	3	–
WEST SOUTH CENTRAL	8	1	22	2	40	5	8	1	8	129	99
Arkansas	–	–	1	–	–	1	–	–	–	15	8
Louisiana*	–	–	NN	–	5	1	–	–	–	14	9
Oklahoma	2	1	3	–	–	2	2	–	4	21	13
Texas	6	–	18	2	35	1	6	1	4	79	69
MOUNTAIN	1	–	55	–	5	–	–	–	5	99	63
Montana	–	–	6	–	–	–	–	–	–	10	5
Idaho	1	–	–	–	2	–	–	–	1	14	5
Wyoming	–	–	10	–	–	–	–	–	–	–	1
Colorado	–	–	22	–	–	–	–	–	4	32	19
New Mexico	–	–	5	–	1	–	–	–	–	16	1
Arizona	–	–	5	–	2	–	–	–	–	24	19
Utah*	–	–	7	–	–	–	–	–	–	3	12
Nevada	–	–	–	–	–	–	–	–	–	–	1
PACIFIC	12	1	63	–	14	6	7	1	42	216	280
Washington	–	–	53	–	12	–	1	–	–	18	22
Oregon	–	–	–	–	1	–	–	–	1	33	28
California	12	1	–	–	1	6	6	1	39	144	224
Alaska	–	–	2	–	–	–	–	–	1	17	2
Hawaii	–	–	8	–	–	–	–	–	1	4	4
Guam	–	–	2	–	–	–	---	–	–	–	---
Puerto Rico	–	–	7	–	–	–	–	–	–	15	5
Virgin Islands	–	–	–	–	–	–	–	–	–	–	1

*Delayed reports: Aseptic meningitis: Va. delete 1
Chickenpox: Me. 8
Hepatitis A: Me. 11, Vt. delete 1, La. delete 1, Utah delete 1

--- Data not available

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING NOVEMBER 4, 1972 AND NOVEMBER 6, 1971 (44th WEEK) – Continued

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1972	Cum. 1972	1972	Cumulative		1972	Cumulative		1972	Cum. 1972	1972	Cum. 1972
				1972	1971		1972	1971				
UNITED STATES	17	769	196	28,009	71,673	28	1,143	1,950	896	60,925	246	22,610
NEW ENGLAND	1	28	39	3,340	3,475	2	49	93	54	2,628	9	1,009
Maine	–	2	2	249	1,472	–	4	8	1	297	–	75
New Hampshire	–	4	16	355	211	–	3	20	–	188	–	32
Vermont	–	1	–	128	118	–	–	–	–	132	–	70
Massachusetts	–	10	20	781	250	–	21	34	28	638	9	476
Rhode Island	–	1	–	524	238	–	12	3	3	398	–	91
Connecticut	1	10	1	1,303	1,186	2	9	28	22	975	–	265
MIDDLE ATLANTIC	2	72	14	1,074	7,616	4	139	264	54	3,559	10	1,921
Upstate New York	–	17	1	130	688	–	32	80	NN	NN	–	243
New York City	1	17	12	383	3,787	2	42	55	42	2,051	5	246
New Jersey	–	19	1	498	1,217	–	26	58	–	742	3	1,164
Pennsylvania	1	19	–	63	1,924	2	39	71	12	766	2	268
EAST NORTH CENTRAL	1	83	86	11,367	15,855	8	171	224	301	16,535	79	5,843
Ohio	–	18	8	265	4,031	3	66	73	19	2,243	3	413
Indiana	–	1	13	1,290	2,761	–	12	16	29	1,082	16	736
Illinois	1	31	26	4,193	3,065	1	37	63	97	2,915	9	1,059
Michigan	–	30	23	2,061	2,443	4	48	57	47	2,933	22	1,337
Wisconsin	–	3	16	3,558	3,555	–	8	15	109	7,362	29	2,298
WEST NORTH CENTRAL	2	49	15	1,000	7,011	3	81	140	152	8,853	8	1,301
Minnesota	–	7	–	22	55	–	24	26	5	695	–	495
Iowa	–	3	5	694	2,434	–	5	12	107	6,090	7	406
Missouri	–	12	–	164	2,604	3	25	47	15	561	1	113
North Dakota	–	1	–	53	238	–	–	6	6	395	–	31
South Dakota	–	4	–	7	219	–	2	6	1	120	–	12
Nebraska	–	3	–	23	67	–	9	15	–	271	–	53
Kansas	2	19	10	37	1,394	–	16	28	18	721	–	191
SOUTH ATLANTIC	3	119	7	2,234	8,649	4	255	343	47	5,678	3	2,285
Delaware	–	–	1	52	42	–	1	2	8	113	–	8
Maryland	–	9	–	15	552	1	38	50	5	397	1	52
District of Columbia	1	6	–	2	15	–	11	13	–	23	–	6
Virginia	–	9	1	67	1,602	–	56	40	4	1,175	–	72
West Virginia	---	2	---	285	536	---	8	11	---	2,463	---	412
North Carolina	–	39	–	37	1,940	–	30	59	NN	NN	–	31
South Carolina	–	12	–	216	917	–	20	20	2	180	–	50
Georgia	1	27	1	183	1,128	1	19	24	–	24	–	58
Florida	1	15	4	1,377	1,917	2	72	124	28	1,303	2	1,596
EAST SOUTH CENTRAL	1	166	1	1,067	8,396	3	90	178	50	3,149	6	1,572
Kentucky	–	144	–	535	3,962	–	28	53	2	473	1	873
Tennessee	–	–	–	193	1,025	–	28	69	20	1,993	3	536
Alabama	1	18	1	154	1,938	3	20	30	27	563	2	51
Mississippi	–	4	–	185	1,471	–	14	26	1	120	–	112
WEST SOUTH CENTRAL	5	85	11	1,577	12,616	3	137	169	36	5,183	20	1,622
Arkansas	–	5	–	13	778	1	10	5	–	167	–	35
Louisiana	–	6	5	99	1,700	1	42	62	–	323	–	94
Oklahoma	–	6	–	10	757	1	9	8	1	162	1	39
Texas	5	68	6	1,455	9,381	–	76	94	35	4,531	19	1,454
MOUNTAIN	–	49	9	1,923	3,402	–	27	59	30	3,127	17	1,143
Montana	–	2	–	16	925	–	3	7	5	199	–	34
Idaho	–	3	2	150	272	–	8	11	1	212	–	33
Wyoming	–	1	–	51	85	–	1	2	9	259	–	8
Colorado	–	31	2	534	836	–	5	7	5	767	1	524
New Mexico	–	3	1	127	398	–	3	4	–	618	11	118
Arizona	–	7	1	886	547	–	1	8	10	887	5	389
Utah	–	2	3	158	332	–	5	17	–	138	–	34
Nevada	–	–	–	1	7	–	1	3	–	47	–	3
PACIFIC	2	118	14	4,427	4,653	1	194	480	172	12,213	94	5,914
Washington	–	1	–	982	1,062	–	17	29	23	3,782	10	865
Oregon	–	11	2	135	376	–	14	39	22	1,716	6	409
California	2	91	12	3,199	2,701	1	152	402	117	6,275	76	4,559
Alaska	–	3	–	13	56	–	8	1	6	148	–	22
Hawaii	–	12	–	98	458	–	3	9	4	292	2	59
Guam	–	2	–	16	---	–	13	---	–	10	–	12
Puerto Rico	–	5	23	808	576	–	4	10	15	886	–	30
Virgin Islands	–	–	–	3	17	–	2	–	–	130	–	3

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING NOVEMBER 4, 1972 AND NOVEMBER 6, 1971 (44th WEEK) – Continued

AREA	TETANUS	TB (New Active)	TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
									GONORRHEA	SYPHILIS (Pri. & Sec.)		
	1972	1972	1972	Cum. 1972	1972	Cum. 1972	1972	Cum. 1972	1972	1972	1972	Cum. 1972
UNITED STATES	–	604	3	113	7	310	5	509	14,967	510	77	3,529
NEW ENGLAND	–	23	–	–	–	15	–	2	413	22	1	104
Maine	–	–	–	–	–	–	–	–	15	–	–	80
New Hampshire	–	–	–	–	–	2	–	–	10	–	1	4
Vermont	–	–	–	–	–	–	–	–	8	1	–	9
Massachusetts	–	14	–	–	–	11	–	2	143	9	–	4
Rhode Island	–	–	–	–	–	–	–	–	48	–	–	2
Connecticut	–	9	–	–	–	2	–	–	189	12	–	5
MIDDLE ATLANTIC	–	107	–	1	–	51	1	37	938	41	1	90
Upstate New York	–	22	–	–	–	15	–	6	273	5	1	42
New York City	–	37	–	–	–	27	–	2	---	---	–	–
New Jersey	–	13	–	1	–	5	1	15	282	17	–	–
Pennsylvania	–	35	–	–	–	4	–	14	383	19	–	48
EAST NORTH CENTRAL	–	105	–	1	–	22	–	27	2,150	26	4	349
Ohio	–	38	–	1	–	7	–	23	819	5	–	97
Indiana	–	12	–	–	–	–	–	–	383	6	–	69
Illinois	–	37	–	–	–	6	–	3	287	–	3	57
Michigan	–	14	–	–	–	7	–	–	556	14	1	9
Wisconsin	–	4	–	–	–	2	–	1	105	1	–	117
WEST NORTH CENTRAL	–	36	–	26	–	8	–	20	1,262	7	33	992
Minnesota	–	4	–	–	–	1	–	–	197	1	11	233
Iowa	–	2	–	–	–	–	–	2	142	3	8	287
Missouri	–	23	–	21	–	3	–	11	600	–	5	89
North Dakota	–	2	–	–	–	–	–	–	19	–	7	132
South Dakota	–	–	–	1	–	–	–	4	39	–	–	113
Nebraska	–	1	–	1	–	1	–	–	50	–	–	16
Kansas	–	4	–	3	–	3	–	3	215	3	2	122
SOUTH ATLANTIC	–	102	–	10	1	40	–	253	3,216	212	13	366
Delaware	–	1	–	–	–	–	–	1	38	4	8	10
Maryland	–	10	–	1	–	9	–	31	385	20	–	17
District of Columbia	–	8	–	–	–	3	–	1	542	21	–	–
Virginia	–	13	–	7	–	11	–	56	449	73	2	97
West Virginia	---	---	---	–	---	1	---	3	---	---	---	54
North Carolina	–	23	–	–	–	–	–	118	157	19	–	3
South Carolina	–	–	–	–	1	3	–	20	–	–	–	13
Georgia	–	14	–	1	–	3	–	22	831	31	1	98
Florida	–	33	–	1	–	10	–	1	814	44	2	74
EAST SOUTH CENTRAL	–	34	–	8	2	39	2	98	1,285	46	12	581
Kentucky	–	7	–	–	2	13	–	4	178	16	4	227
Tennessee	–	14	–	7	–	11	–	60	841	19	6	290
Alabama	–	5	–	1	–	10	2	19	88	5	2	61
Mississippi	–	8	–	–	–	5	–	15	178	6	–	3
WEST SOUTH CENTRAL	–	83	3	53	1	40	2	61	1,956	58	4	705
Arkansas	–	15	1	29	1	13	1	15	132	2	2	101
Louisiana	–	11	–	4	–	7	–	–	438	10	–	39
Oklahoma	–	3	–	11	–	3	–	34	244	5	2	269
Texas	–	54	2	9	–	17	1	12	1,142	41	–	296
MOUNTAIN	–	23	–	10	1	11	–	9	530	29	–	91
Montana	–	1	–	1	–	–	–	2	33	–	–	7
Idaho	–	–	–	–	–	–	–	6	45	2	–	–
Wyoming	–	–	–	–	–	–	–	–	9	–	–	1
Colorado	–	2	–	1	–	1	–	–	125	9	–	–
New Mexico	–	13	–	–	–	1	–	–	94	3	–	23
Arizona	–	6	–	2	1	7	–	–	114	3	–	51
Utah	–	1	–	6	–	2	–	1	48	1	–	7
Nevada	–	–	–	–	–	–	–	–	62	11	–	2
PACIFIC	–	91	–	4	2	84	–	2	3,217	69	9	251
Washington	–	2	–	–	–	2	–	1	207	8	–	–
Oregon	–	4	–	1	–	–	–	1	272	1	–	4
California	–	80	–	2	2	79	–	–	2,593	57	9	239
Alaska	–	–	–	1	–	–	–	–	75	–	–	8
Hawaii	–	5	–	–	–	3	–	–	70	3	–	–
Guam	–	–	–	–	–	–	–	–	–	–	–	–
Puerto Rico	–	13	–	–	–	7	–	–	56	9	2	47
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–	–

Week No. 44

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING NOVEMBER 4, 1972

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

Area	All Causes			Pneumonia and Influenza	Area	All Causes			Pneumonia and Influenza
	All Ages	65 years and over	Under 1 year	All Ages		All Ages	65 years and over	Under 1 year	All Ages
NEW ENGLAND	696	428	24	31	SOUTH ATLANTIC	1,218	656	48	38
Boston, Mass.	194	104	8	16	Atlanta, Ga.	172	89	7	4
Bridgeport, Conn.	38	25	3	2	Baltimore, Md.	222	131	8	2
Cambridge, Mass.	43	25	1	–	Charlotte, N. C.	47	20	–	–
Fall River, Mass.	27	20	–	–	Jacksonville, Fla.	65	31	5	1
Hartford, Conn.	50	26	2	–	Miami, Fla.	102	62	1	4
Lowell, Mass.	33	26	1	2	Norfolk, Va.	58	27	4	3
Lynn, Mass.	15	11	–	–	Richmond, Va.	101	43	8	4
New Bedford, Mass.	23	18	1	2	Savannah, Ga.	37	13	1	3
New Haven, Conn.	57	30	3	–	St. Petersburg, Fla.	93	73	1	7
Providence, R. I.	65	38	3	4	Tampa, Fla.	69	42	1	2
Somerville, Mass.	8	4	–	–	Washington, D. C.	183	88	10	7
Springfield, Mass.	48	29	–	2	Wilmington, Del.	69	37	2	1
Waterbury, Conn.	34	28	1	–					
Worcester, Mass.	61	44	1	3	EAST SOUTH CENTRAL	768	392	45	41
					Birmingham, Ala.	110	60	8	1
MIDDLE ATLANTIC	3,170	1,904	113	116	Chattanooga, Tenn.	71	41	1	9
Albany, N. Y.	42	27	2	–	Knoxville, Tenn.	33	22	1	1
Allentown, Pa.	32	16	–	5	Louisville, Ky.	156	67	9	13
Buffalo, N. Y.	104	48	7	9	Memphis, Tenn.	169	85	13	5
Camden, N. J.	46	27	1	2	Mobile, Ala.	69	33	4	3
Elizabeth, N. J.	37	21	–	1	Montgomery, Ala.	43	24	3	2
Erie, Pa.	37	26	2	5	Nashville, Tenn.	117	60	6	7
Jersey City, N. J.	62	38	2	1					
Newark, N. J.	87	36	14	1	WEST SOUTH CENTRAL	1,298	711	61	35
New York City, N. Y.†	1,613	979	48	47	Austin, Tex.	31	21	2	1
Paterson, N. J.	52	31	2	3	Baton Rouge, La.	57	30	1	4
Philadelphia, Pa.	493	283	18	2	Corpus Christi, Tex.	31	13	1	1
Pittsburgh, Pa.	128	82	3	13	Dallas, Tex.	167	89	6	2
Reading, Pa.	43	36	–	3	El Paso, Tex.	55	22	10	–
Rochester, N. Y.	139	91	5	11	Fort Worth, Tex.	104	60	7	1
Schenectady, N. Y.	16	9	–	1	Houston, Tex.	267	135	13	4
Scranton, Pa.	34	18	1	3	Little Rock, Ark.	60	26	1	4
Syracuse, N. Y.	83	50	4	3	New Orleans, La.	129	72	4	1
Trenton, N. J.	48	33	2	3	Oklahoma City, Okla.*	92	55	4	2
Utica, N. Y.	25	21	–	–	San Antonio, Tex.	151	92	9	4
Yonkers, N. Y.	49	32	2	3	Shreveport, La.	83	54	1	4
					Tulsa, Okla.	71	42	2	7
EAST NORTH CENTRAL	2,678	1,496	121	86					
Akron, Ohio	58	29	–	–	MOUNTAIN	490	274	10	23
Canton, Ohio	28	15	3	–	Albuquerque, N. Mex.	44	24	–	2
Chicago, Ill.	735	367	40	15	Colorado Springs, Colo.	25	17	1	3
Cincinnati, Ohio	155	90	3	8	Denver, Colo.	114	65	1	6
Cleveland, Ohio	203	110	7	4	Las Vegas, Nev.	20	7	–	2
Columbus, Ohio	138	84	3	5	Ogden, Utah	25	20	–	4
Dayton, Ohio	116	74	1	2	Phoenix, Ariz.	126	67	4	2
Detroit, Mich.	371	211	19	11	Pueblo, Colo.	22	13	–	1
Evansville, Ind.	47	34	1	3	Salt Lake City, Utah	63	35	2	–
Fort Wayne, Ind.	42	22	–	2	Tucson, Ariz.	51	26	2	3
Gary, Ind.	26	14	3	1					
Grand Rapids, Mich.	63	40	2	6	PACIFIC	1,662	1,066	45	31
Indianapolis, Ind.	159	78	5	1	Berkeley, Calif.	21	11	–	–
Madison, Wis.	37	18	5	7	Fresno, Calif.	60	35	3	2
Milwaukee, Wis.	142	94	11	2	Glendale, Calif.	30	18	–	–
Peoria, Ill.	50	27	4	3	Honolulu, Hawaii	48	26	8	–
Rockford, Ill.	42	28	–	5	Long Beach, Calif.	104	60	–	2
South Bend, Ind.	65	39	4	6	Los Angeles, Calif.	466	364	12	11
Toledo, Ohio	123	74	6	4	Oakland, Calif.	87	39	6	1
Youngstown, Ohio	78	48	4	1	Pasadena, Calif.	42	29	–	–
					Portland, Oreg.	141	86	5	2
WEST NORTH CENTRAL	813	545	27	19	Sacramento, Calif.	70	41	1	1
Des Moines, Iowa	64	39	2	–	San Diego, Calif.	124	78	–	1
Duluth, Minn.	28	22	1	1	San Francisco, Calif.	179	94	4	6
Kansas City, Kans.	31	18	2	2	San Jose, Calif.	55	35	–	2
Kansas City, Mo.	128	91	5	–	Seattle, Wash.	146	88	2	2
Lincoln, Nebr.	28	16	1	2	Spokane, Wash.	50	34	2	–
Minneapolis, Minn.	98	69	2	1	Tacoma, Wash.	39	28	2	1
Omaha, Nebr.	80	50	5	–					
St. Louis, Mo.	219	146	1	4	Total	12,793	7,472	494	420
St. Paul, Minn.	90	63	6	4	Expected Number	12,451	7,132	555	419
Wichita, Kans.	47	31	2	5	Cumulative Total (includes reported corrections for previous weeks)	556,674	323,892	22,050	21,457

† Delayed report for week ending October 28, 1972

* Estimate based on average percent of divisional total

SALMONELLA – Continued

In 1971, 42 outbreaks involving at least 1,391 individuals were reported in the Salmonella Surveillance Reports. Of 19 foodborne outbreaks, nine were traced to specific contaminated foods–six caused by turkey, one by turkey eggs, and one each by chicken and smoked fish. Multiple foods were found contaminated in one outbreak. In the other nine outbreaks, the specific food vehicle could not be identified, however, chicken was thought to have been the vehicle in two, beef in one, and pork in another.

Contaminated water was incriminated as the vehicle of infection in two outbreaks of *S. typhi* which involved 12 persons. Eight *S. typhi* outbreaks were reported; three of these were related to travel outside the United States. Person-to-person contact was the primary mode of spread in six of 42 reported outbreaks involving 35 persons. The mode of transmission in nine outbreaks was not determined.

(Reported by Enteric Diseases Section, Bacterial Diseases Branch, Epidemiology Program, CDC.)

A copy of the original report from which these data were derived is available on request from
Center for Disease Control
Attn: Salmonellosis Surveillance Activity
Epidemiology Program
Atlanta, Georgia 30333

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The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting outbreaks or case investigations of current interest to health officials.

Address all correspondence to: Center for Disease Control
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