CENTER FOR DISEASE CONTROL

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Current Trends

Subacute Sclerosing Panencephalitis and Measles

Subacute sclerosing panencephalitis (SSPE) is a slow virus infection of the brain caused by a measles-like virus. A recently published study has revealed that SSPE follows measles at a rate of approximately 5-10 cases for every million children developing measles (*1*). Live measles vaccine may be associated with SSPE at a rate of 0.5-1.1 cases per million doses of measles vaccine distributed. Thus, the risk following natural measles is 5-20 times greater than following measles vaccination.

A case-control study evaluating in greater detail the association of measles and/or vaccine with SSPE is currently underway at CDC and the University of Tennessee. Fifty-two children with SSPE diagnosed since January 1, 1974, were each matched by age, sex, and race with both a long-term playmate and a hospitalized child. Vaccination and disease histories, verified by medical records review, were available for all cases and for 96 controls (Table 1). Children with SSPE were significantly more likely to have had natural measles than were controls ($p<.001$). Control children were significantly more likely to have received measles vaccine than were SSPE cases ($p<.001$). There was no difference between cases and controls with regard to having received measles vaccine after having had natural measles (21.2% vs 20.8%).

TABLE 1. History of measles infection and measles vaccination in 52 children with SSPE and 96 control children.

Measles Disease/ Vaccine History	SSPE Cases No.	%	Controls No.	%
Had natural measles; no measles vaccination	32	(61.5)	25	(26)
Had natural measles; received measles vaccine	11	(21.2)	20	(20.8)
Had no history of measles; received measles vaccine	6	(11.5)	43	(44.8)
Had no history of measles or measles vaccination	3	(5.8)	8	(8.3)
Total	52		96	

Two SSPE cases (3.8%) and 4 control children (4.2%) had received 2 or more doses of measles vaccine. Eleven SSPE cases (21.2%) had natural measles before they were 1 year old compared to 4 control children (4.2%) ($p<.01$). Four control children but none of the SSPE cases had received measles vaccine before they were 1 year old.

Reported by the Immunization Div, Bur of State Services, CDC.

Editorial Note: Although live measles vaccine may lead to SSPE on rare occasions, it seems apparent that the overall effect of the vaccine is to protect against SSPE by preventing measles with its attendant higher risk of SSPE.

Before the widespread use of measles vaccine as many as 15-30% of children without a clinical history of natural measles infection had serologic evidence of a previous measles infection (*2,3*). Presumably, either measles infection occurred in the first year of life under the partial protection of maternal antibody, or the disease was misdiagnosed by parents and physicians. Therefore, a negative history of natural measles does not rule out the possibility of previous measles infection. This is also shown by the 3 children with SSPE in this study (Table 1) who had elevated measles antibody titers but no history of natural measles or measles vaccine.

There has been recent speculation that administration of measles vaccine either more than once or after natural measles infection might enhance the risk of developing SSPE. If that were true, one would expect to find that these events had occurred more frequently in children with SSPE than in control children; no such difference, however, was observed in this study. Vaccination of children who previously received live measles vaccine or who had previously had natural measles has not been shown to be associated with other neurologic disorders (*4-8*). In addition, rates of expected minor reactions such as fever and rash following vaccination in these children were less than those observed in susceptible children vaccinated for the first time.

Therefore, while measles vaccine is not needed in persons known to be immune, serologic screening of children with uncertain immune status before administering measles vaccine is not useful in preventing SSPE.

References

1. Modlin JF, Jabbour JT, Witte JJ, Halsey NA: Epidemiologic studies of measles, measles vaccine, and subacute sclerosing panencephalitis. Pediatrics 59:505-512, 1977
2. Krugman S, Giles JP, Friedman H, Stone S: Studies on immunity to measles. J Pediatr 66:471, 1965
3. Krugman S, Giles JP, Jacobs AM, et al: Studies with live attenuated measles-virus vaccine. Am J Dis Child 103:353, 1962
4. Bass JW, Halstead SB, Fisher GW, et al: Booster vaccination with live attenuated measles vaccine. JAMA 235:31-34, 1976
5. Hilleman MR, Buynak EB, Wiebel RE, et al: Development and evaluation of the Moraten measles virus vaccine. JAMA 206:587-590, 1968

6. Krugman S, Giles JP, Jacobs AM, et al: Studies with a further attenuated live measles virus vaccine. Pediatrics 31:919-928, 1963
7. Martin CM, Manfredonia SJ, Webb ND, et al: Controlled trial of live measles vaccine. Am J Dis Child 106:267-279, 1963
8. Cereni P, Arguedos J, Hernandez G, et al: Choriaoallantoic membrane measles: Development and clinical evaluation of a new further attenuated measles vaccine. Appl Microbiol 27:763-766, 1974

Epidemiologic Notes and Reports

Follow-up on *Salmonella* organisms in Precooked Roast Beef

New cases of salmonellosis related to consumption of precooked roast beef continue to be reported; the total number of such cases in the current outbreak now exceeds 181 cases. In addition to new cases in New York, Pennsylvania, New Jersey, and Connecticut, cases have been found in Georgia and Massachusetts. Investigation in Massachusetts has revealed 3 cases caused by *Salmonella bovis-morbificans,* the serotype involved in a precooked roast beef outbreak in 1976 (*1*). In early September, Canada reported salmonellosis in an 11-year-old boy in Montreal who had eaten precooked roast beef in upstate New York.

Reported by S Handel, MD, Bureau of Epidemiology, Dept of National Health and Welfare, Ottawa, Canada; JE McCroan, PhD, State Epidemiologist, Georgia State Dept of Human Resources; NJ Fiumara, MD, MPH, State Epidemiologist, Massachusetts State Dept of Public Health; JN Lewis, MD, State Epidemiologist, Connecticut State Dept of Health; R Altman, MD, State Epidemiologist, New Jersey State Dept of Health; D Lyman, MD, State Epidemiologist, New York State Dept of Health; W Parkin, DVM, State Epidemiologist, Pennsylvania State Dept of Health; Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Although the cases of salmonellosis caused by *S. newport* originally drew attention to the problem of salmonella contamination of precooked roasts of beef (*1*), further study has revealed that 7 different *Salmonella* serotypes are associated with this outbreak. Several of these *(S. newport, S. chester, S. typhimurium, S. waycross, and S. bovis-morbificans)* have been isolated from unopened precooked roast beef during the current outbreak.

The total number of cases in this outbreak is difficult to assess, since interviews, necessary to determine the association of a case with precooked roast beef, have not been completed on all persons with *Salmonella* isolates. The finding of cases in Georgia indicates that contaminated beef is not a problem limited to the northeastern part of the United States.

Reference

1. MMWR 25:333, 1976

Table I. Summary—Cases of Specified Notifiable Diseases: United States

[Cumulative totals include revised and delayed reports through previous weeks]

DISEASE	37th WEEK ENDING		MEDIAN 1972–1976	CUMULATIVE, FIRST 37 WEEKS		MEDIAN 1972–1976
	September 17, 1977	September 18, 1976		September 17, 1977	September 18, 1976	
Aseptic meningitis	162	120	171	2,913	2,014	2,364
Brucellosis	10	6	6	166	231	134
Chickenpox	221	264	---	158,332	150,436	---
Diphtheria	1	–	1	65	126	126
Encephalitis: Primary	31	63	43	614	963	951
Encephalitis: Post-Infectious	1	1	4	152	205	217
Hepatitis, Viral: Type B	372	316	226	11,533	10,580	6,821
Hepatitis, Viral: Type A	578	520	722	21,817	24,081	29,810
Hepatitis, Viral: Type unspecified	192	134		6,510	5,900	
Malaria	13	18	11	379	326	293
Measles (rubeola)	132	90	90	53,287	34,410	24,207
Meningococcal infections, total	18	16	17	1,284	1,158	1,061
Civilian	18	16	16	1,276	1,141	1,036
Military	–	–	–	8	17	25
Mumps	91	183	285	15,696	32,698	46,978
Pertussis	52	20	---	905	687	---
Rubella (German measles)	63	50	78	18,556	10,684	14,826
Tetanus	2	1	1	47	43	63
Tuberculosis	545	588	---	21,581	23,624	---
Tularemia	4	8	3	115	105	105
Typhoid fever	9	10	10	262	292	281
Typhus, tick-borne (Rky. Mt. spotted fever)	29	29	22	968	737	674
Venereal Diseases:						
Gonorrhea: Civilian	21,346	19,671	---	696,243	711,520	---
Gonorrhea: Military	455	617	---	19,038	21,295	---
Syphilis, primary and secondary: Civilian	398	410	---	14,682	17,096	---
Syphilis, primary and secondary: Military	9	5	---	212	250	---
Rabies in animals	74	59	49	2,142	2,099	2,099

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	–	Poliomyelitis, total:	9
Botulism:	79	Paralytic:	7
Congenital rubella syndrome:	11	Psittacosis: Wash. +1	49
Leprosy: Calif. +3	94	Rabies in man:	1
Leptospirosis: Ups. NY +1	30	Trichinosis: *Mass. +1, N.J. +1, Tex. +1.	66
Plague: *Calif. +1.	10	Typhus, murine:*	56

*Delayed reports: Botulism: N. Mex. +1; Plague: N. Mex. +4; Trichinosis: Wisc. +1; Typhus, murine: Md. +1

Tick Paralysis — Georgia

On July 9, 1977, a 7-year-old female was admitted to a northern Georgia Hospital with an admitting diagnosis of acute cerebellar ataxia.

The child displayed symptoms of unsteady gait and the inability to walk. Her temperature was recorded at 99 F. No recent illnesses or other symptoms were evident. Lumbar puncture showed no white cells, with a spinal fluid glucose of 55 mg/ml and a protein of 22 mg/ml. Bacterial culture of the spinal fluid revealed no growth. The day following admission the child became markedly worse with generalized paralysis. She had a very weak grip and was able to move her toes only slightly.

Because tick paralysis was suspected, she was searched for ticks. Two ticks, a male and a female *Dermacentor variabilis,* were discovered attached to her scalp. The female tick was fully engorged, indicating prolonged attachment. It was removed from the back of the head near the neck. The male tick was removed from the midline area of the scalp.

Within 6-8 hours following removal of the ticks, there was obvious clinical improvement. Over the next 24-36 hours the child made a rapid recovery. She was discharged on July 14, able to walk without any difficulty.

Reported by L Morris, MD, JE McCroan, PhD, State Epidemiologist, JD Smith, Georgia Dept of Human Resources; and Respiratory and Special Pathogens Br, Viral Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Tick paralysis is a toxin-induced disorder associated with the attachment and feeding of the female member of any of a number of tick species, including, in the continental United States, *D. andersoni, D. variabilis, Amblyomma americanum,* and *A. maculatum.* The tick must feed for several days before symptoms develop.

The neurotoxin injected by the engorging tick acts upon spinal and bulbar neurons slowing motor neuron conduction. Sensory involvement is rare.

Clinically, diarrhea, ataxia, and areflexia may appear 24 hours prior to a steadily ascending paralysis which can lead to respiratory embarassment and death. Symptoms may resemble poliomyelitis, Guillain-Barré syndrome, botulism, and myasthenia gravis. Removal of the tick usually results in complete remission within 24 to 72 hours.

Outbreak of Scarlet Fever — California

An outbreak of scarlet fever and post-streptococcal acute glomerulonephritis (AGN) occurred among residents of Santa Catalina Island, California, from March through July, 1977. The epidemic organism, M2T2 SOR+ group A *Streptococcus,* was previously implicated in recent outbreaks of scarlet fever and AGN occurring in Los Angeles (*1*) and Mexico City (*2*).

Sixty-five cases of streptococcal pharyngitis (53 of them with scarlet fever) were identified by physician reports and a school survey since the end of March. Symptoms among all patients with streptococcal disease consisted of fever (in 93%), sore throat (89%), rash or desquamation (82%), vomiting (62%), headache (59%), and cervical adenopathy (44%).

Six cases were diagnosed between the end of March and the end of May, but the incidence increased dramatically in June, peaked in the third week, and declined after school recessed June 18. Sporadic cases continued to occur in July; the most recent onset was July 23. Distribution of cases over the 4-month period suggested person-to-person transmission. Except for 7 adults and 10 preschoolers, illness was confined to a single school (grades K-12) but involved only grades K-6; fifth graders experienced the highest attack rate (14/23, 61%). The teacher in that class was also affected, and the attack rate for children sitting at the front of that classroom was higher than for those in the back. The secondary attack rate in family members who did not attend the elementary school or a local preschool was 12.2%.

All cases were screened for signs and symptoms of AGN. Three definite and 3 probable cases of nephritis were diagnosed on the basis of hematuria, cylinduria, and hypocomplementemia. Only 1 child had symptoms of nephritis; the others were asymptomatic and would not have been identified without screening efforts. Streptococci from 31 of 32 ill persons from whom the isolate was available for typing were identified as belonging to the epidemic strain, M2T2 SOR+ group A *Streptococcus.*

The first 2 cases in the outbreak were in a preschool child and his mother who had recently returned from an area of Mexico in which scarlet fever had been prevalent. The organism may have been introduced to the island at this point, although there was ample opportunity for transmission from elsewhere on the mainland.

Reported by AJ Brinkman, MD, RH Caneday, MD, Santa Catalina Island; B Adler, MD, S Fannin, MD, Los Angeles County Health Dept; RR Roberto, MD, California State Dept of Health, in the California Morbidity Weekly Report, No. 30, August 5, 1977; Staphylococcus and Streptococcus Section, Clinical Bacteriology Br, Bacteriology Div, Bur of Laboratories, Field Services Div, Special Pathogens Br, and Epidemiologic Investigations Laboratory Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: This is the third reported outbreak of scarlet fever and AGN associated with M2T2 SOR+ group A *Streptococcus.* The 2 previous outbreaks were among children in a Los Angeles County School in 1971 (*1*) and in the environs of Mexico City in the period 1968-1970 (*2*).

The large proportion of persons with AGN who were asymptomatic is consistent with the known broad clinical spectrum of post-streptococcal AGN. The clinical presentation can range from no symptoms to renal insufficiency, and urinalysis may be normal or only transiently abnormal (*3*). Screening patients with streptococcal disease, as was done in this outbreak, as well as screening their sibling contacts (*4*) improves ascertainment of post-streptococcal AGN.

References

1. Anthony BF, Yamauchi T, Penso JS, Kamei I, Chapman SS: Classroom outbreak of scarlet fever and acute glomerulonephritis related to type 2 (M-2, T-2) group A *Streptococcus.* J Infect Dis 129:336-340, 1974

2. Rodriguez RS: Acute glomerulonephritis and scarlet fever caused by *Streptococcus pyogenes* type 2 (M-2, T-2). J Infect Dis 130:315, 1974

3. Sagel I, Treser G, Ty A, Yoshizawa N, Kleinberger H, Yuceoglu AM, Wasserman E, Lange K: Occurrence and nature of glomerular lesions after group A *Streptococci* infections in children. Ann Intern Med 79:492-499, 1973

4. Dodge WF, Spargo BH, Travis LB: Glomerulonephritis in siblings. Pediatrics 40:1028-1030, 1967

Current Trends

Primary and Secondary Syphilis — United States, July 1977

Reported cases of primary and secondary syphilis numbered 1,605 in July 1977, down 14.9% from the 1,887 cases reported in July 1976 (Table 2). This represents the 16th consecutive month in which a decline in cases has been reported. In the first 7 months of 1977 (January-July) 2,329 fewer cases (—16.7%) were reported compared to the same time period of the previous year. Sixteen areas reported more cases during the first 7 months of 1977 compared to the same time period of 1976. Early latent (less than 1-year duration) syphilis declined 18.7% in July 1977 versus July 1976. During the first 7 months of 1977 versus the same time period of 1976 such cases decreased 15.6%.

Reported by the Venereal Disease Control Div, Bur of State Services, CDC.

TABLE 2. Summary of reported primary and secondary syphilis cases by reporting area, July 1977 and July 1976, provisional data

Reporting Area by HEW Regions	July		Calendar Year Cumulative January—July		Reporting Area by HEW Regions	July		Calendar Year Cumulative January—July		Reporting Area by HEW Regions	July		Calendar Year Cumulative January—July	
	1977	1976	1977	1976		1977	1976	1977	1976		1977	1976	1977	1976
Connecticut	12	19	105	97	Illinois (Excl. Chicago)	10	7	100	89	Arizona	12	12	98	137
Maine	2	3	14	12	Chicago	75	77	547	519	California (Excl. LA & SF)	119	134	858	1,208
Massachusetts	47	52	346	299	Indiana (Excl. Indianapolis)	10	8	60	50	Los Angeles*	85	103	774	1,040
New Hampshire	0	1	4	6	Indianapolis*	7	4	32	22	San Francisco*	76	65	498	444
Rhode Island	1	2	8	15	Michigan	20	19	155	146	Hawaii	4	7	22	56
Vermont	0	2	5	5	Minnesota	10	12	83	58	Nevada	1	5	9	29
REGION I TOTAL	62	79	482	434	Ohio	26	38	289	292	REGION IX TOTAL	297	326	2,259	2,914
					Wisconsin	7	12	58	64					
New Jersey	27	57	201	336	REGION V TOTAL	165	177	1,324	1,240	Alaska	2	1	19	14
New York (Excl. NYC)	32	18	168	148						Idaho	0	1	4	15
New York City	130	172	1,017	1,423	Arkansas	8	9	38	53	Oregon	6	3	71	62
REGION II TOTAL	189	247	1,386	1,907	Louisiana	61	57	379	363	Washington	28	17	136	90
					New Mexico	7	3	47	98	REGION X TOTAL	36	22	230	181
Delaware	1	3	15	39	Oklahoma	8	12	47	66					
District of Columbia	51	49	351	355	Texas	182	156	1,129	1,141	UNITED STATES TOTAL	1,605	1,887	11,648	13,978
Maryland (Excl. Baltimore)	11	22	95	114	REGION VI TOTAL	266	237	1,640	1,721					
Baltimore	21	21	154	241										
Pennsylvania (Excl. Phila.)	10	17	92	149	Iowa	3	1	22	22					
Philadelphia	15	33	148	241	Kansas	2	6	41	47	Puerto Rico	51	50	350	359
Virginia	48	71	329	389	Missouri	11	10	89	102	Virgin Islands	1	4	10	26
West Virginia	0	1	1	18	Nebraska	0	8	24	21	United States, Including Outlying Areas	1,657	1,941	12,008	14,363
REGION III TOTAL	157	217	1,185	1,546	REGION VII TOTAL	16	25	176	192					
Alabama	13	16	73	111	Colorado	10	14	73	85					
Florida	150	234	1,126	1,527	Montana	1	1	4	6					
Georgia (Excl. Atlanta)	75	67	427	334	North Dakota	0	0	2	2					
Atlanta*	39	30	242	282	South Dakota	0	2	2	4					
Kentucky	8	10	50	82	Utah	1	0	5	18					
Mississippi	20	39	155	169	Wyoming	0	0	2	4					
North Carolina	55	106	520	794	REGION VIII TOTAL	12	17	88	119					
South Carolina	27	27	155	228										
Tennessee	18	11	131	197										
REGION IV TOTAL	405	540	2,879	3,724										

*County Data.

Note: Cumulative totals include revised and delayed reports through previous months.

Source: CDC 9.98, HEW-CDC-BSS-VD Control Division, Atlanta, Georgia

Epidemiologic Notes and Reports

Rocky Mountain Spotted Fever — California

Three cases of Rocky Mountain spotted fever (RMSF) have been documented in California during 1977; 2 of these were fatal.

Case 1: A 9-year-old boy from Alameda County became ill on May 2 with severe headache, high fever, and a macular rash on the abdomen and his extremities; later the rash became petechial. Initial treatment with amoxicillin was unsuccessful, and abdominal pains, vomiting, and changes in sensorium developed, requiring hospitalization. His condition worsened: he developed a low platelet count, coagulopathy, gastrointestinal bleeding, severe electrolyte imbalance, and hypotension. Coma and grand mal seizure followed. It was then learned that he had had a tick bite during a trip April 21-29 to Oklahoma; the exact place of exposure was unknown, however. He was transferred to another hospital with the diagnosis of probable RMSF. Supportive treatment, ampicillin, gentamicin, and chloramphenicol were given, but he died the same day. The diagnosis was confirmed by isolation of rickettsiae from the blood, spleen, and liver.

Case 2: The second fatal case was in a 9-year-old boy from a small town in Missouri. On June 15, after arriving in Orange County for a visit, he became ill with high fever, edema of the face and extremities, vomiting, and changes in sensorium. He was seen at a hospital on June 18, where a rash on his arms, legs, and feet was noted, but he was sent home. He again saw a doctor on June 21 and was hospitalized because of continuing high fever, petechial rash, and incoherence. Thrombocytopenia, electrolyte imbalance, and inappropriate antidiuretic hormone secretion were found. On June 24 he was transferred to another hospital,

(Continued on page 317)

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending September 17, 1977 and September 18, 1976 – 37th Week

AREA REPORTING	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified		
	1977	1977	1977	1977	CUM. 1977	1977	1976	1977	1977	1977	1977	1977	CUM. 1977
UNITED STATES	162	10	221	1	65	31	63	1	372	578	192	13	379
NEW ENGLAND	16	–	23	–	–	5	2	–	7	9	9	–	21
Maine	1	–	–	–	–	–	–	–	–	–	–	–	–
New Hampshire*	–	–	–	–	–	–	–	–	–	–	–	–	3
Vermont	–	–	–	–	–	–	–	–	–	5	2	–	2
Massachusetts	2	–	16	–	–	4	1	–	2	2	6	–	3
Rhode Island	3	–	4	–	–	–	–	–	–	1	–	–	5
Connecticut	10	–	3	–	–	1	1	–	5	1	1	–	8
MIDDLE ATLANTIC	22	1	27	–	5	3	1	–	57	62	25	1	85
Upstate New York	7	–	9	–	–	–	1	–	7	17	6	1	21
New York City	5	–	17	–	5	–	–	–	11	9	5	–	39
New Jersey*	4	–	NN	–	–	–	–	–	20	15	9	–	9
Pennsylvania*	6	1	1	–	–	3	–	–	19	21	5	–	16
EAST NORTH CENTRAL	17	–	65	–	–	8	9	–	56	88	8	–	28
Ohio	NA	–	NA	–	–	NA	7	–	NA	NA	NA	–	10
Indiana	–	–	5	–	–	7	–	–	4	18	–	–	2
Illinois	1	–	1	–	–	–	–	–	25	28	8	–	2
Michigan	14	–	9	–	–	1	1	–	21	36	–	–	11
Wisconsin*	2	–	50	–	–	–	1	–	6	6	–	–	3
WEST NORTH CENTRAL	7	4	17	–	1	–	8	1	24	25	9	1	32
Minnesota	–	–	–	–	–	–	2	–	5	3	–	–	9
Iowa*	–	4	15	–	–	–	–	–	1	5	1	–	1
Missouri*	2	–	1	–	1	–	3	–	10	7	7	–	16
North Dakota	–	–	–	–	–	–	2	–	–	–	1	–	1
South Dakota	–	–	1	–	–	–	1	–	–	–	–	–	1
Nebraska	2	–	–	–	–	–	–	–	2	2	–	–	–
Kansas	3	–	–	–	–	–	–	1	6	8	–	1	4
SOUTH ATLANTIC	27	3	16	–	–	5	3	–	56	50	31	6	64
Delaware	2	–	–	–	–	–	–	–	1	–	–	–	–
Maryland*	5	–	–	–	–	1	1	–	11	4	7	3	15
District of Columbia	–	–	–	–	–	–	–	–	–	–	–	–	4
Virginia*	12	1	1	–	–	1	–	–	6	4	2	2	16
West Virginia	3	1	4	–	–	1	–	–	2	3	1	–	1
North Carolina	–	–	NN	–	–	1	2	–	4	–	–	–	7
South Carolina	3	–	–	–	–	–	–	–	1	2	10	–	–
Georgia	–	1	–	–	–	–	–	–	–	14	–	–	8
Florida	2	–	11	–	–	1	–	–	31	23	11	1	13
EAST SOUTH CENTRAL	18	–	2	–	–	6	25	–	27	48	3	–	10
Kentucky	7	–	1	–	–	–	–	–	2	11	1	–	4
Tennessee	8	–	NN	–	–	6	3	–	17	23	1	–	1
Alabama	3	–	–	–	–	–	2	–	4	5	1	–	4
Mississippi	–	–	1	–	–	–	20	–	4	9	–	–	1
WEST SOUTH CENTRAL	13	2	18	–	2	2	11	–	21	95	35	1	19
Arkansas	–	–	2	–	–	–	1	–	2	13	–	–	–
Louisiana	2	–	NN	–	–	–	1	–	5	13	1	–	2
Oklahoma	5	–	5	–	–	–	1	–	3	7	4	–	–
Texas*	6	2	11	–	2	2	8	–	11	62	30	1	17
MOUNTAIN	–	–	25	–	4	–	3	–	22	31	20	–	12
Montana*	–	–	6	–	–	–	–	–	–	1	1	–	1
Idaho	–	–	2	–	–	–	–	–	–	–	–	–	–
Wyoming	–	–	2	–	–	–	–	–	–	1	–	–	2
Colorado	–	–	13	–	–	–	1	–	7	7	4	–	6
New Mexico*	–	–	–	–	3	–	–	–	6	3	5	–	1
Arizona	–	–	NN	–	1	–	2	–	8	17	9	–	2
Utah	–	–	–	–	–	–	–	–	1	2	1	–	–
Nevada	–	–	2	–	–	–	–	–	–	–	–	–	–
PACIFIC	42	–	28	1	53	2	1	–	102	170	52	4	108
Washington	1	–	19	1	50	1	–	–	5	22	11	–	5
Oregon	7	–	1	–	–	–	–	–	13	24	6	–	1
California*	33	–	–	–	1	–	1	–	84	124	35	4	96
Alaska	1	–	1	–	2	1	–	–	–	–	–	–	2
Hawaii	–	–	7	–	–	–	–	–	–	–	–	–	4
Guam*	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
Puerto Rico	–	–	15	–	–	–	–	–	–	1	1	–	2
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–	–	–

NN: Not notifiable
NA: Not available
*Delayed reports: Asep. meng: Pa. –1, Wisc. +1, Mo. +1, Md. +4, Va. –3; Chickenpox: Iowa +1, Md. +1, N. Mex. –2, C[illegible]+6, Guam +4; Diph.: N. Mex. +1; Hep. B: N. Hamp. +1, N.J. +1, Mo. +1, Md. +3, N. Mex. +1; Hep. A: N.J. +1, Wisc. –16, Md. +12, Mont. –2, N. Mex. –2; Hep. unsp.: N.J. –2, Iowa –2, Md. +5, Mont. –[illegible], N. Mex. –3, Guam +1; Malaria: Md. +2

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending September 17, 1977 and September 18, 1976 – 37th Week

REPORTING AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1977	CUMULATIVE		1977	CUMULATIVE		1977	CUM. 1977	1977	1977	CUM. 1977	CUM. 1977
		1977	1976		1977	1976						
UNITED STATES	132	53,287	34,410	18	1,284	1,158	91	15,696	52	63	18,556	47
NEW ENGLAND	2	2,471	385	2	53	54	7	648	2	3	1,192	1
Maine	–	170	7	–	3	1	2	54	–	–	69	–
New Hampshire	–	510	9	–	3	5	–	91	–	–	240	–
Vermont	–	293	41	1	6	3	–	8	–	–	64	–
Massachusetts	–	631	35	–	16	17	2	121	1	–	374	–
Rhode Island	–	64	14	–	1	5	2	57	–	–	134	–
Connecticut	2	803	279	1	24	23	1	317	1	3	311	1
MIDDLE ATLANTIC	10	8,334	6,995	3	184	166	5	1,285	9	2	6,001	4
Upstate New York	8	3,801	2,934	1	48	63	2	283	3	1	3,364	1
New York City	2	724	454	–	46	45	3	480	1	–	313	1
New Jersey	–	195	600	–	37	23	–	349	–	–	1,779	2
Pennsylvania	–	3,614	3,007	2	53	35	–	173	5	1	545	–
EAST NORTH CENTRAL	39	11,236	14,626	1	131	145	18	5,334	7	7	3,670	5
Ohio	NA	1,849	572	–	52	61	NA	652	NA	–	1,115	1
Indiana	21	4,341	3,272	–	9	6	1	303	–	3	932	1
Illinois	15	1,702	1,574	–	22	17	6	923	1	1	317	1
Michigan	1	932	5,842	1	36	50	1	1,808	3	2	911	2
Wisconsin*	2	2,412	3,366	–	12	11	10	1,648	3	1	395	–
WEST NORTH CENTRAL	5	9,862	1,208	1	70	78	10	3,550	–	2	506	7
Minnesota	–	2,620	421	–	25	14	–	6	–	–	17	2
Iowa*	3	4,290	42	–	6	9	1	1,261	–	2	163	1
Missouri*	2	991	20	–	27	30	8	1,229	–	–	35	2
North Dakota	–	23	3	–	1	3	–	16	–	–	11	–
South Dakota	–	67	4	–	4	3	–	59	–	–	18	–
Nebraska	–	209	55	1	2	6	–	68	–	–	3	–
Kansas	–	1,662	663	–	5	13	1	911	–	–	259	2
SOUTH ATLANTIC	51	4,575	2,172	6	284	222	14	744	19	24	1,647	11
Delaware	–	22	128	3	6	7	–	126	–	–	26	–
Maryland*	–	371	715	–	18	18	2	64	–	–	5	–
District of Columbia	–	14	12	–	–	2	–	5	–	–	–	–
Virginia*	9	2,713	763	1	20	36	2	95	1	1	576	1
West Virginia	15	241	190	–	9	7	6	160	–	1	134	–
North Carolina	–	63	17	–	62	40	2	54	1	–	444	–
South Carolina	5	153	4	1	29	36	–	10	4	19	228	–
Georgia*	1	767	2	1	52	20	–	26	11	–	52	1
Florida	21	231	341	–	88	56	2	204	2	3	182	9
EAST SOUTH CENTRAL	1	1,959	833	1	138	107	3	872	1	3	1,922	3
Kentucky	–	1,188	748	–	26	19	–	87	–	–	80	1
Tennessee	1	655	68	–	36	46	1	531	–	3	1,724	1
Alabama	–	78	–	–	50	31	1	216	–	–	109	1
Mississippi	–	38	17	1	26	11	1	38	1	–	9	–
WEST SOUTH CENTRAL	5	2,088	699	2	223	179	12	1,414	4	4	804	8
Arkansas	–	39	1	–	14	10	–	64	1	–	3	2
Louisiana*	–	74	202	2	86	33	1	39	–	–	27	1
Oklahoma	1	57	290	–	10	21	5	480	–	2	31	–
Texas	4	1,918	206	–	113	115	6	831	3	2	743	5
MOUNTAIN	6	2,530	5,013	–	40	33	4	602	–	5	361	2
Montana	–	1,162	204	–	2	4	1	11	–	–	14	1
Idaho	–	162	2,020	–	4	4	–	122	–	–	13	–
Wyoming	–	19	4	–	1	–	1	4	–	2	6	1
Colorado	3	502	247	–	1	5	1	264	–	1	233	–
New Mexico*	–	270	15	–	18	4	–	107	–	–	12	–
Arizona	3	304	226	–	10	10	–	–	–	–	12	–
Utah	–	18	2,234	–	3	4	1	79	–	2	62	–
Nevada	–	93	63	–	1	2	–	15	–	–	9	–
PACIFIC	13	10,232	2,479	2	161	174	18	1,247	10	13	2,453	6
Washington	3	535	340	1	19	29	7	271	4	3	440	–
Oregon	–	368	163	–	11	17	3	230	3	–	110	–
California	10	9,236	1,969	1	101	107	8	698	2	10	1,496	6
Alaska*	–	58	4	–	28	18	–	25	1	–	1	–
Hawaii	–	35	3	–	2	3	–	23	–	–	406	–
Guam*	NA	6	14	–	–	–	NA	6	NA	NA	10	–
Puerto Rico	16	892	364	–	1	3	22	679	1	1	31	10
Virgin Islands	–	14	11	–	–	–	–	186	–	–	2	–

NA: Not available

*Delayed reports: Measles: Iowa –22, N. Mex. –14, Alaska +2; Men. inf.: Wisc. +1, Mo. +1, Va. +5, La. +37 civ., + 1 mil., N. Mex. –10 civ., Guam +1 civ.; Mumps: Iowa +12, Md. +1, Va. +2; Pertussis: Mo. +2, Ga. +70

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending September 17, 1977 and September 18, 1976 – 37th Week

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
									CUMULATIVE			CUMULATIVE		
	1977	CUM. 1977	CUM. 1977	1977	CUM. 1977	1977	CUM. 1977	1977	1977	1976	1977	1977	1976	CUM. 1977
UNITED STATES	545	21,581	115	9	262	29	968	21,346	696,243	711,520	398	14,682	17,096	2,142
NEW ENGLAND	14	801	1	–	15	1	9	654	18,647	19,663	13	587	562	38
Maine	2	62	–	–	–	–	–	78	1,387	1,653	2	18	17	28
New Hampshire	1	21	–	–	1	–	–	28	742	569	–	3	8	1
Vermont	2	27	–	–	–	–	–	17	479	487	–	6	8	–
Massachusetts	5	457	1	–	10	1	4	223	7,910	9,325	7	415	392	6
Rhode Island	–	65	–	–	2	–	3	35	1,505	1,352	–	8	17	–
Connecticut	4	169	–	–	2	–	2	273	6,624	6,277	4	137	120	3
MIDDLE ATLANTIC	60	3,373	1	–	56	1	53	2,077	71,726	82,906	59	2,025	2,896	68
Upstate New York	21	574	1	–	7	1	23	349	12,267	13,325	11	193	171	40
New York City*	35	1,055	–	–	22	–	–	841	28,167	37,127	36	1,274	1,834	–
New Jersey	4	880	–	–	17	–	10	234	12,541	12,715	2	264	402	23
Pennsylvania	NA	864	–	–	10	–	20	653	18,751	19,739	10	294	489	5
EAST NORTH CENTRAL	72	3,401	3	1	23	–	23	2,990	110,107	110,945	37	1,554	1,473	88
Ohio	13	579	1	–	8	–	11	626	28,873	27,290	18	366	350	–
Indiana	3	393	–	–	1	–	2	154	10,031	10,751	1	125	78	8
Illinois	31	1,354	–	1	5	–	14	1,198	35,982	38,817	11	800	784	27
Michigan*	24	933	–	–	9	–	1	740	25,284	24,079	4	181	185	5
Wisconsin*	1	142	2	–	–	–	–	272	9,937	10,008	3	82	76	48
WEST NORTH CENTRAL	25	732	19	1	16	–	25	1,393	37,008	37,323	8	331	316	543
Minnesota	3	159	–	–	4	–	–	329	6,649	6,453	–	95	71	192
Iowa*	2	67	–	–	–	–	–	199	4,289	4,731	2	39	34	87
Missouri	15	314	17	1	7	–	14	498	15,446	15,079	6	127	125	39
North Dakota	–	20	–	–	1	–	–	22	704	571	–	–	–	80
South Dakota	1	36	2	–	–	–	2	11	1,055	1,058	–	6	4	108
Nebraska	–	28	–	–	1	–	1	106	3,167	3,159	–	25	26	2
Kansas*	4	108	–	–	3	–	9	228	5,698	6,272	–	39	56	35
SOUTH ATLANTIC	130	4,799	10	3	46	15	529	5,569	172,325	174,986	120	4,088	5,176	254
Delaware	5	49	–	–	–	–	3	67	2,393	2,443	–	18	53	2
Maryland*	17	672	2	–	3	3	68	583	20,973	23,085	9	258	425	–
District of Columbia	6	238	–	–	1	–	–	358	11,227	11,999	3	418	402	–
Virginia*	10	548	1	–	9	1	147	585	18,126	18,759	12	402	472	5
West Virginia	3	182	–	1	4	–	5	79	2,323	2,199	–	3	19	9
North Carolina*	26	795	2	–	3	9	199	1,036	25,691	24,848	26	569	942	10
South Carolina	15	432	2	1	1	2	48	453	16,260	16,685	7	176	281	17
Georgia*	18	600	3	–	12	–	58	1,372	33,575	32,987	33	891	779	153
Florida	30	1,283	–	1	13	–	1	1,036	41,757	41,981	30	1,353	1,803	58
EAST SOUTH CENTRAL	73	1,982	7	–	4	5	154	1,840	61,571	62,853	8	526	674	61
Kentucky	–	499	2	–	–	–	38	122	8,247	8,210	–	65	95	21
Tennessee	21	600	5	–	1	4	95	761	24,652	25,030	–	159	228	31
Alabama	32	532	–	–	1	1	13	438	16,869	17,644	3	113	141	9
Mississippi	20	351	–	–	2	–	3	519	11,803	11,969	5	189	210	–
WEST SOUTH CENTRAL	53	2,527	61	1	19	7	147	2,655	87,081	90,679	61	2,155	2,005	611
Arkansas	10	285	42	–	5	4	45	264	6,951	8,548	2	52	68	93
Louisiana	8	475	1	–	–	–	4	148	12,219	12,967	9	504	407	17
Oklahoma	7	225	9	–	1	2	71	266	8,374	8,718	4	58	75	192
Texas	28	1,542	9	1	13	1	27	1,977	59,537	60,446	46	1,541	1,455	309
MOUNTAIN	16	616	8	1	21	–	13	896	28,250	28,973	6	317	452	136
Montana	–	35	1	–	–	–	6	53	1,466	1,461	–	4	7	40
Idaho	1	29	–	–	–	–	4	50	1,322	1,579	3	14	19	–
Wyoming	–	11	1	–	–	–	2	12	687	565	–	4	3	1
Colorado	–	85	3	–	8	–	1	285	7,453	7,322	–	96	100	49
New Mexico*	3	113	–	–	–	–	–	100	4,085	5,353	–	67	113	2
Arizona	9	273	2	1	8	–	–	228	7,907	8,534	3	114	163	37
Utah	1	31	1	–	4	–	–	31	1,638	1,474	–	6	18	7
Nevada	2	39	–	–	1	–	–	137	3,692	2,685	–	12	29	–
PACIFIC	102	3,350	5	2	62	–	4	3,272	109,528	103,192	86	3,099	3,542	343
Washington	NA	227	–	1	2	–	–	208	8,281	8,728	NA	158	101	2
Oregon	1	135	–	–	3	–	1	183	7,478	7,900	1	94	77	6
California	91	2,518	5	1	56	–	3	2,757	88,000	81,679	85	2,800	3,280	299
Alaska	–	55	–	–	–	–	–	58	3,451	2,949	–	19	16	36
Hawaii	10	415	–	–	1	–	–	66	2,318	1,936	–	28	68	–
Guam*	NA	44	–	NA	1	NA	–	NA	144	239	NA	1	2	–
Puerto Rico	–	265	–	–	6	–	–	86	2,298	2,017	8	395	432	44
Virgin Islands	–	1	–	–	–	–	–	7	152	189	–	7	48	–

NA: Not available
*Delayed reports: TB: NYC +41, Mich. –2, Md. +7, N.C. –2, Guam +1; Typhoid fever: Ga. +1; RMSF: Iowa +1, Va. –3; GC: Iowa –10, Md. +486; Syphilis: Iowa –8 civ., –3 mil., Kans. –1 civ., Md. +4 civ., N. Mex. +35 civ.; An. rabies: Wisc. +6, Iowa +3, Kans. +1, N. Mex. +15

Table IV
Deaths in 121 United States Cities*
Week Ending September 17, 1977 – 37th Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	ALL AGES
NEW ENGLAND	632	394	168	34	17	33
Boston, Mass.	195	113	54	16	9	12
Bridgeport, Conn.	32	18	10	2	–	1
Cambridge, Mass.	24	19	3	1	–	5
Fall River, Mass.	19	16	3	–	–	2
Hartford, Conn.	48	32	10	4	1	3
Lowell, Mass.	24	17	5	2	–	1
Lynn, Mass.	17	11	6	–	–	–
New Bedford, Mass.	32	21	10	–	–	1
New Haven, Conn.	52	32	12	5	–	1
Providence, R.I.	49	30	14	–	2	5
Somerville, Mass.	8	5	3	–	–	–
Springfield, Mass.	58	37	17	1	2	1
Waterbury, Conn.	25	19	5	–	–	1
Worcester, Mass.	49	24	16	3	3	–
MIDDLE ATLANTIC	2,735	1,652	682	200	114	125
Albany, N. Y.	55	33	13	4	2	2
Allentown, Pa.	19	13	3	–	2	1
Buffalo, N. Y.	112	71	29	6	2	5
Camden, N. J.	40	21	17	–	1	–
Elizabeth, N. J.	16	11	4	1	–	–
Erie, Pa.	24	12	9	1	2	1
Jersey City, N. J.	40	25	7	4	3	2
Newark, N. J.	64	30	16	6	11	6
New York City, N. Y.	1,373	835	332	113	52	45
Paterson, N. J.	28	16	5	3	3	1
Philadelphia, Pa.	385	217	111	24	16	23
Pittsburgh, Pa.	205	122	54	13	9	12
Reading, Pa.	40	35	5	–	–	1
Rochester, N. Y.	115	80	16	10	6	12
Schenectady, N. Y.	24	16	4	3	–	–
Scranton, Pa.	44	28	14	1	–	3
Syracuse, N. Y.	69	39	18	6	4	4
Trenton, N. J.	38	22	13	1	1	1
Utica, N. Y.	16	9	5	–	–	2
Yonkers, N. Y.	28	17	7	4	–	4
EAST NORTH CENTRAL	2,363	1,373	643	164	84	57
Akron, Ohio	74	52	14	1	4	–
Canton, Ohio	24	17	6	1	–	2
Chicago, Ill.	593	300	184	67	16	12
Cincinnati, Ohio	187	123	35	14	6	5
Cleveland, Ohio	157	96	42	10	2	2
Columbus, Ohio	136	74	38	9	7	–
Dayton, Ohio	100	58	33	5	2	1
Detroit, Mich.	267	146	79	22	12	4
Evansville, Ind.	61	45	13	–	1	3
Fort Wayne, Ind.	64	42	10	2	7	4
Gary, Ind.	8	6	2	–	–	1
Grand Rapids, Mich.	51	32	14	2	1	1
Indianapolis, Ind.	164	82	54	9	6	4
Madison, Wis.	55	28	16	6	3	2
Milwaukee, Wis.	128	87	25	8	1	5
Peoria, Ill.	34	23	6	3	2	4
Rockford, Ill.	54	36	13	1	4	6
South Bend, Ind.	40	28	7	1	1	1
Toledo, Ohio	104	68	27	1	6	–
Youngstown, Ohio	62	30	25	2	3	–
WEST NORTH CENTRAL	767	468	181	57	23	18
Des Moines, Iowa	71	39	15	10	2	–
Duluth, Minn.	17	13	3	–	–	1
Kansas City, Kans.	27	13	7	1	4	1
Kansas City, Mo.	135	79	32	11	4	2
Lincoln, Nebr.	31	18	9	3	–	2
Minneapolis, Minn.	100	64	28	4	2	2
Omaha, Nebr.	81	51	18	4	5	2
St. Louis, Mo.	183	115	44	12	4	5
St. Paul, Minn.	67	46	12	6	–	–
Wichita, Kans.	55	30	13	6	2	3

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza
	ALL AGES	65 Years and Over	45–64 Years	25–44 Years	Under 1 Year	ALL AGES
SOUTH ATLANTIC	1,308	778	358	91	36	55
Atlanta, Ga.	140	81	37	15	2	5
Baltimore, Md.	293	171	71	25	10	5
Charlotte, N. C.	53	27	18	6	–	1
Jacksonville, Fla.	82	53	21	2	2	3
Miami, Fla.	151	94	45	6	3	10
Norfolk, Va.	72	47	17	3	4	7
Richmond, Va.	83	50	23	6	1	8
Savannah, Ga.	39	20	13	4	1	5
St. Petersburg, Fla.	98	79	15	–	4	4
Tampa, Fla.	64	33	22	3	1	3
Washington, D. C.	182	96	59	18	6	3
Wilmington, Del.	51	27	17	3	2	1
EAST SOUTH CENTRAL	729	412	191	42	43	27
Birmingham, Ala.	101	66	20	3	4	1
Chattanooga, Tenn.	69	31	22	7	4	3
Knoxville, Tenn.	51	36	11	3	1	2
Louisville, Ky.	120	64	40	5	4	12
Memphis, Tenn.	182	92	44	13	22	3
Mobile, Ala.	74	52	17	2	2	3
Montgomery, Ala.	37	25	10	1	–	1
Nashville, Tenn.	95	46	27	8	6	2
WEST SOUTH CENTRAL	1,255	669	355	95	58	27
Austin, Tex.	35	24	6	1	–	3
Baton Rouge, La.	57	33	15	4	2	1
Corpus Christi, Tex.	35	18	10	1	1	1
Dallas, Tex.	198	99	65	19	6	1
El Paso, Tex.	48	31	9	2	2	3
Fort Worth, Tex.	67	32	19	9	4	3
Houston, Tex.	269	132	84	20	15	3
Little Rock, Ark.	57	25	21	2	5	3
New Orleans, La.	167	93	50	9	11	–
San Antonio, Tex.	178	95	39	20	6	4
Shreveport, La.	71	42	19	2	4	4
Tulsa, Okla.	73	45	18	6	2	1
MOUNTAIN	485	265	143	28	31	9
Albuquerque, N. Mex.	52	26	18	3	3	3
Colorado Springs, Colo.	34	23	6	1	2	1
Denver, Colo.	87	43	29	7	5	1
Las Vegas, Nev.	20	10	6	4	–	–
Ogden, Utah	21	16	4	–	–	2
Phoenix, Ariz.	114	72	28	4	7	–
Pueblo, Colo.	27	12	11	2	1	1
Salt Lake City, Utah	55	24	17	2	9	1
Tucson, Ariz.	75	39	24	5	4	–
PACIFIC	1,671	1,042	393	113	47	45
Berkeley, Calif.	12	8	4	–	–	–
Fresno, Calif.	69	44	18	2	1	–
Glendale, Calif.	27	23	2	1	–	–
Honolulu, Hawaii	64	40	13	4	4	1
Long Beach, Calif.	75	45	13	4	4	3
Los Angeles, Calif.	497	313	118	38	10	17
Oakland, Calif.	43	25	10	3	5	2
Pasadena, Calif.	24	11	8	3	–	–
Portland, Oreg.	113	74	24	6	3	2
Sacramento, Calif.	65	37	17	2	2	2
San Diego, Calif.	155	81	45	14	5	6
San Francisco, Calif.	200	133	37	17	3	7
San Jose, Calif.	77	52	15	4	–	–
Seattle, Wash.	166	96	46	11	8	4
Spokane, Wash.	49	39	9	–	1	1
Tacoma, Wash.	35	21	9	4	1	–
TOTAL	11,945	7,053	3,114	824	453	396
Expected Number	11,121	6,696	2,870	744	381	371

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

The Morbidity and Mortality Weekly Report, circulation 67,500, is published by the Center for Disease Control, Atlanta, Georgia. 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.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Center for Disease Control, Attn.: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

Send mailing list additions, deletions, and address changes to: Center for Disease Control, Attn.: Distribution Services, GSO, 1-SB-36, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Rocky Mountain Spotted Fever — Continued

where RMSF was suspected, and tetracycline was begun. Although the fever subsided and mental status improved, thrombocytopenia persisted, the rash became purpuric, and renal and liver damage and disseminated intravascular coagulation developed. By June 30, encephalopathy and coma occurred. He died July 7. His RMSF CF antibody titer, drawn on June 23 and on July 6, was 1:128. Attempts to isolate rickettsiae from autopsy tissues were negative.

Case 3: A 41-year-old man from San Francisco vacationed in Shasta, Modoc, Lassen, and Plumas Counties April 30-May 5, with tick exposure at various campsites. On approximately May 8 or 9, he became ill with severe headache, muscle aches, fever, and a maculopapular rash on his arms and legs, palms, soles, and thorax. He was hospitalized on May 12 and recovered rapidly with tetracycline. Diagnosis was confirmed by rising CF antibody titers and isolation of rickettsiae from acute-phase blood.

Reported by the California State Dept of Health in the California Morbidity Weekly Report, No. 31, 1977; and the Respiratory and Special Pathogens Br, Viral Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Reported cases of RMSF have been steadily rising in the United States since 1960. The case-fatality rate (5-10%) has remained fairly constant during that period. To date, 968 cases have been reported in 1977. In 1976, 937 were reported, 2 of these from California. Most cases are reported from the Mid-Atlantic and Southeastern states. Although a rare disease on the Pacific Coast, when either case history or clinical picture suggests RMSF prompt initiation of treatment with appropriate antibiotics (tetracycline or chloramphenicol) is indicated, pending laboratory confirmation.

International Notes

Foodborne Pesticide Poisoning — Jamaica

Five fishermen in Knightsbridge, Clarendon Parish, Jamaica, became ill on September 1, 1977, after eating a meal of pork, cow skin, green bananas, and roti (an unleavened bread made of flour, water, salt, and baking powder); 3 died. Symptoms, which began within 5 minutes after the meal, consisted of abdominal cramps, vomiting, diarrhea, profuse sweating, muscular fasciculations, bronchospasms, convulsions, and coma. Death occurred within 2-4 hours.

Initial evaluation of the suspect foodstuffs was undertaken in Kingston by the laboratory of the Jamaican Government Chemist. Since parathion, a highly toxic organophosphorus pesticide, had been responsible for a major outbreak of foodborne poisoning with similar symptoms in Jamaica in 1976 (*1*), the laboratory looked initially for evidence of this chemical; none was found. However, ultraviolet spectroscopy did reveal the presence of another low molecular weight organic compound in the roti.

Specimens of the 4 food items eaten and of the patients' stomach contents were sent to CDC for further analysis. The stomach contents of the deceased patients were tube fed to adult female Sherman rats. Within 3-4 minutes of feeding the animals began to exhibit a syndrome of muscular fasciculation, unsteady gait, and increased salivation which in severe cases progressed to respiratory distress, coma, convulsions, and death — a syndrome closely resembling that seen in the fishermen. Aqueous extracts of the cooked food samples were then fed to adult rats. Each of these specimens produced a similar syndrome in the rats. However, the specimens had been shipped to CDC in a single vial, introducing the possibility of cross-contamination. Because onset was most rapid and the symptoms most severe in the rats fed roti, attention was focused on its components.

Flour was examined first. A massive feeding (7gm/kg) of an aqueous suspension of commercial flour obtained from a flour sack in the fishermen's hut produced no symptoms in 2 adult rats. The flour also showed no evidence of any toxins when examined by gas chromatography, mass spectroscopy, and odor analysis. Likewise, no evidence for toxin was noted in salt from the fishermen's hut. However, a small unlabeled bag that had been left in a baking powder tin in the hut was found to contain a highly toxic white powder. In rats, this powder produced, with extreme rapidity and severity, the same syndrome observed in the rats fed patients' stomach contents.

The powder, when analyzed by gas chromatography, high pressure liquid chromatography, mass spectroscopy, infrared spectroscopy, and nuclear resonance spectroscopy, was shown to contain an almost pure preparation of the carbamate insecticide, methomyl. Identification of the powder as methomyl was confirmed by comparison of the spectroscopic tracings obtained on the powder with those produced by a more than 99% pure specimen of methomyl supplied to CDC by the U.S. Environmental Protection Agency.

Pure methomyl, when fed to rats, produced a syndrome identical to that which had been produced by the white powder, food samples, and stomach contents. Furthermore, the food samples and the stomach contents were shown by the spectrochemical analytic techniques to contain methomyl. No evidence for the presence of parathion was found in any sample.

The Government of Jamaica is conducting further investigations to determine the source of the methomyl and to learn whether it has had any other distribution within Jamaica.

Reported by W Davidson, MD, AC Ellington, PhD, D Manley, PhD, W Patterson, MD, Ministry of Health, Government of Jamaica; V Worsley, RN, Foreign Disaster Coordination Center, Agency for International Development, District of Columbia; Toxicology Br, Clinical Chemistry Div, Bur of Laboratories, and the Special Pathogens Br, Chronic Diseases Div, Bur of Epidemiology, CDC.

Reference

1. Diggory HJP, Landrigan PJ, Latimer KP, et al: Fatal parathion poisoning caused by contamination of flour in international commerce. Am J Epidemiol 106:145-153, 1977

Surveillance Summary

Encephalitis — United States, 1975

In 1975, 4,308 cases of encephalitis, resulting in 340 deaths, were reported to CDC. This was the highest number of cases reported since reporting began in 1960, and 20% more than the previous highest year, 1964.

For the first year since reporting began, a specific etiology was identified for the majority (2,599) of cases (Table 3), Arboviral encephalitis was responsible for about half (49%) of all cases, with St. Louis encephalitis (SLE) alone responsible for 42% of all cases. Cases of indeterminate etiology accounted for 40% of all cases. Encephalitis associated with childhood infections was responsible for 6% of all cases, with mumps virus responsible for most (70%) of these. Confirmed enteroviral-associated encephalitis accounted for about 3%, herpes simplex for 2%, and other cases of confirmed etiology for less than 1% of all the cases.

The monthly distribution of cases in each etiologic group was similar to patterns of previous years. Arboviral and enteroviral activity occurred predominantly in the summer and early fall; arboviruses peaked in September, and enteroviruses peaked in August. Childhood disease-associated cases occurred mostly in the first half of the year.

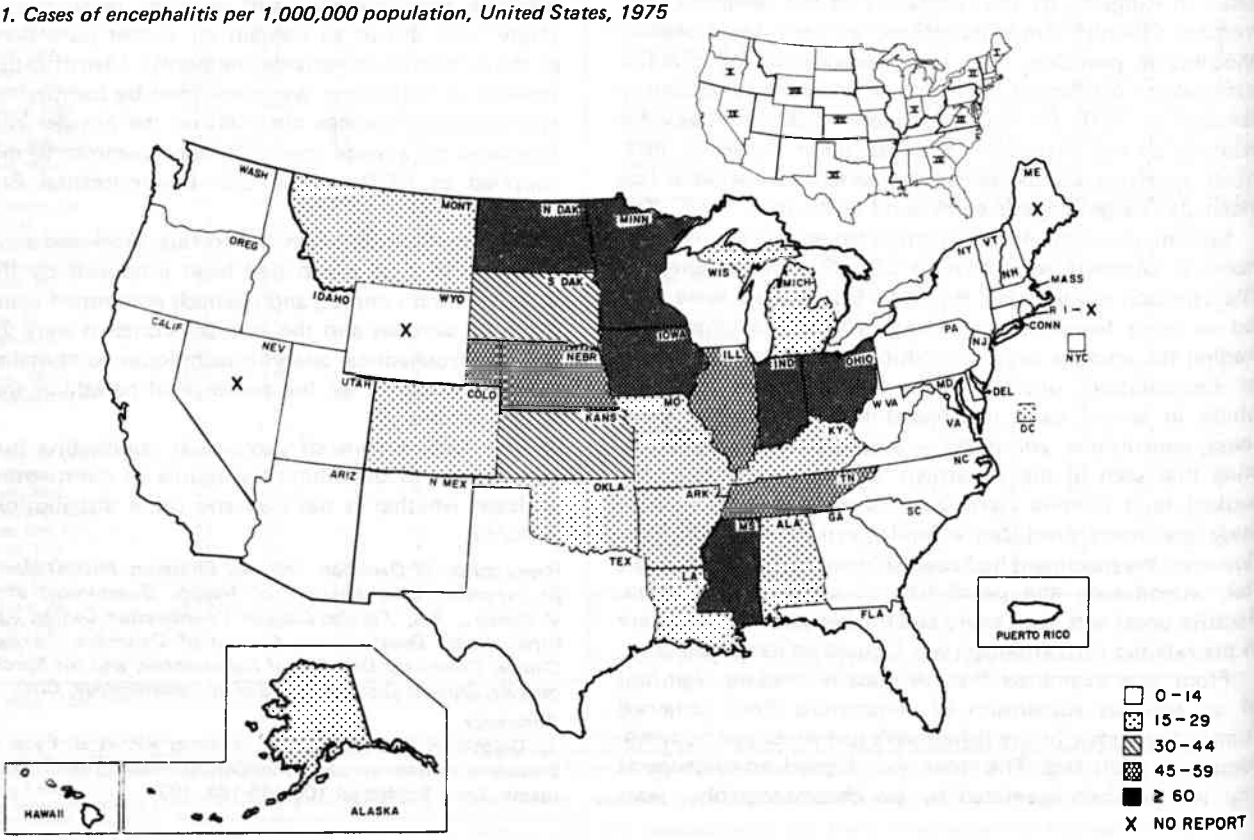
All states reported cases of encephalitis, except Maine, Rhode Island, Wyoming, and Nevada. Eight states reported 62% of all cases: Ohio (705), Illinois (544), Indiana (334), Minnesota (261), Mississippi (258), Iowa (203), Tennessee (194), and California (190). The highest incidence occurred in the Central Divisions, primarily the West North Central, East North Central, and East South Central Divisions (Figure 1). Variations in attack rates from state to state were greatly influenced by arboviral epidemics in 1975; however, dissimilar rates may also reflect dissimilar reporting practices and/or emphases on epidemiologic and laboratory investigations.

▲ A copy of the report from which these data were derived is available on request from the Center for Disease Control, Attn: Enteric and Neurotropic Viral Diseases Br, Viral Diseases Div, Bur of Epidemiology, Atlanta, Georgia 30333.

TABLE 3. Cases of encephalitis and deaths, by etiology, United States, 1975

Category and Etiology	Cases Number		% of Total	Deaths Number		% of Total	Death/Case Ratio(%)
Arboviral	2,113		49.0	150		44.1	7.1
WEE		133			6		
EEE		3			1		
SLE		1,815			142		
CE		160			1		
POW		2			0		
Enteroviral	136		3.2	1		0.3	0.7
Associated with							
Childhood Infections	237		5.5	21		6.2	8.9
Measles		17			5		
Mumps		166			4		
Chickenpox		54			12		
Associated with							
Respiratory Illness	12		0.3	0		0.0	0.0
Parainfluenza		1			0		
Adenovirus		5			0		
M. pneumoniae		1			0		
Influenza A		5			0		
Associated with							
Known Etiologies	101		2.3	19		5.6	18.8
H. simplex		86			19		
H. zoster		5			0		
CMV		2			0		
Infectious mononucleosis		4			0		
Unspecified		4			0		
Indeterminate	1,709		39.7	149		43.8	8.7
Complex		5			0		
Inconclusive evidence		66			3		
Unknown		1,638			146		
Total	4,308		100	340		100	7.9

FIGURE 1. Cases of encephalitis per 1,000,000 population, United States, 1975



Epidemiologic Notes and Reports

Abdominal Wall Abscess due to *Salmonella typhi* — California

Two cases of abdominal wall abscess due to *Salmonella typhi* were reported in 1976 in California.

The first case was in an elderly man who presented with a tender right upper quadrant mass, 6 X 8 cm in size, which had developed over 6 months' time. He had had diarrhea in the 2 weeks before hospitalization but otherwise felt well. Twenty-five years previously he had had a cholecystectomy, and the abdominal mass was located near the right subcostal incision. The white blood cell count was normal at 6,100, but 15% of neutrophils were band forms. At surgery the abdominal mass area was found to be an abscess in the rectus muscle. Pus was evacuated and cultured; the wound was irrigated, and a drain placed. Culture yielded *S. typhi* phage type B2, and the patient was treated with antibiotics. He had no history of typhoid fever. Since surgery, he has consistently had negative stool and urine examinations for bacterial pathogens.

The second case was in an elderly schizophrenic woman who had lived in mental hospitals for the past 40 years. In July 1969, she was hospitalized with symptoms of acute cholecystitis. Cholecystectomy showed stones in the gall bladder and the common duct. Her immediate postoperative course was unremarkable, and after drains were removed, the drain sites closed spontaneously. However, from December 1970 through September 1972 she was seen on 5 occasions for drainage at the incisional site. Stitch abscesses were diagnosed each time. On 4 of these visits, 1 to 4 cotton sutures were removed. She next appeared 4 years later—in August 1976—with a large fluctuant abscess at the right lateral margin of the scar. The abscess was incised and drained, and it healed uneventfully. Culture of the pus grew *S. typhi* phage type E1. This patient also had no history of acute typhoid fever.

Reported by RL Holtzer, MD, Sonoma County Health Dept; C Kennedy, MD, E Taylor, MD, SO Smelsey, MD, San Joaquin Local Health District; C Powers, BS, SB Werner, MD, California State Dept of Health, in the California Morbidity Weekly Report, No. 21, June 3, 1977.

Editorial Note: Salmonella infections can result in chronic focal infections with only local symptoms. In these 2 cases, the patients apparently were gallbladder carriers of *S. typhi* whose surgical sites became contaminated but presented no problems until many years later.

International Notes

Cholera — Middle East and the Gilbert Islands

The World Health Organization (WHO) has received confirmed reports of outbreaks of cholera in the Gilbert Islands (280 cases) and in Jordan (324), Lebanon (20), the Syrian Arab Republic (1,996), and Saudi Arabia (17). *Vibrio cholerae*, biotype El Tor, serotype Ogawa, has been isolated in Syria and Jordan. Other Middle Eastern countries may be affected, but they have not submitted confirmed reports to the WHO. Imported cases have been reported by several Western European Countries, but no secondary transmission within these countries is known to have occurred.

Reported by the World Health Organization; Quarantine Div, and Enteric Disease Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Although cholera vaccine is of limited effectiveness and should not be relied upon to protect travelers against cholera, during this outbreak, a cholera vaccination and an International Certificate of Vaccination Against Cholera may be indicated to facilitate travel across borders. Cholera vaccination is not required for re-entry into the United States.

Epidemiologic Notes and Reports

Legionnaires' Disease — Pennsylvania

Pennsylvania has reported the first 2 serologically confirmed cases of Legionnaires' disease in Philadelphia since the outbreak there last summer. The 2 patients, a 70-year-old woman and a 50-year-old man, had onset on July 18 and July 20, 1977, respectively; they had no common contacts. Details of their cases follow.

The woman developed sharp anterior-lateral leftsided chest pain on July 18, and was hospitalized on July 19. Her admission diagnosis was pulmonary embolism with infarction. Initial chest X-ray showed an alveolar density in the left mid-lung field. The leucocyte count was 17,000 with 86% segmented neutrophils and 2% band forms. She was admitted to the hospital with a temperature of 103 F, rales at the left base, and a pleural friction rub. During hospitilization her fever increased, and she developed a nonproductive cough and became dyspneic. She was treated with ampicillin (500 mg) intravenously every 6 hours. Her antimicrobial therapy was changed to cephalothin and then to tetracycline. Her clinical course deteriorated, requiring mechanical ventilation and tracheotomy. By July 30, however, she had become afebrile, and on August 22 she was discharged from the hospital. Sera tested by the indirect fluorescent antibody (IFA) method at the Bureau of Laboratories of the Pennsylvania Department of Health revealed titers of $<$1:64 and 1:256 on July 27 and August 10, respectively.

The male patient, a previously healthy self-employed radiator repair service operator, developed fever and chills

on July 20. Over the next few days his symptoms progressed, and he was hospitalized on July 22 with a temperature of 102.6 F and a right lower lobe pneumonia. His white blood cell count was 14,500 with 69% segmented neutrophils and 6% band forms. The patient was placed on erythromycin and was afebrile within 3 days. His hospital stay was uneventful, and he was discharged on July 31. Sera tested by the IFA method at the state laboratory revealed titers of <1:64 and 1:128 on July 25 and August 8, respectively.

Reported by R Sharrar, MD, M Yanak, Philadelphia Dept of Public Health; L Sideman, V Pidcoe, DrPH, WE Parkin, DVM, State Epidemiologist, Pennsylvania Dept of Health; Special Pathogens Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: The clinical response to therapy in these patients provides additional anecdotal experience that erythromycin may be an effective drug in the treatment of Legionnaires' disease. Controlled clinical evaluation of antibiotic efficacy is lacking.

International Notes

Quarantine Measures

The following changes should be made in the *Supplement — Health Information for International Travel,* Morbidity and Mortality Weekly Report, Vol. 25, October 1976:

BRITISH SOLOMON ISLANDS
Smallpox — Delete all information. Insert code II. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in a country any part of which is infected.

COSTA RICA
Smallpox — Delete note. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in:
Africa: Ethiopia, Mozambique, Somali
Asia: Bangladesh, India, Nepal

CZECHOSLOVAKIA
Smallpox — Delete all information. Insert code II. Insert: A Certificate is ALSO required from travelers arriving from all countries any part of which is infected. A Certificate is ALSO required from travelers arriving from:
Africa: Ethiopia, Somalia, Sudan
Asia: Bangladesh, India, Nepal, Pakistan

DOMINICAN REPUBLIC
Smallpox — Delete note: Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in a country any part of which is infected.

NEW CALEDONIA AND DEPENDENCIES
Smallpox — Delete all information. Insert code II. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in a country any part of which is infected.

SURINAM
Smallpox — Delete all information. Insert code II. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in a country any part of which is infected.

TONGA
Smallpox — Delete all information. Insert code II. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in a country any part of which is infected.

Addendum, Vol. 26, No. 32

p268 In the article, "Presumed Staphylococcal Food Poisoning Associated with Whipped Butter," add the following to the credits: JL Diekroeger, MPH, Springfield City Health Dept; and HH Rohrer, MD, MPH, Peoria Health Dept.

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