COMMUNICABLE DISEASE CENTER

Morbidity and Mortality

Vol. 14, No. 37

WEEKLY REPORT

Week Ending September 18, 1965

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE

AN EPIDEMIC OF WATERBORNE GASTROENTERITIS

Madera, California

During the middle of August an estimated total of 2,500 cases of acute gastroenteritis of apparently multiple causation occurred in Madera, a city of 15,000 population lying in the center of the San Joaquin Valley of California. The cases were widely distributed throughout the city and surrounding area, but with a higher incidence localized in the southwestern area of the town. The source was traced to sewage contamination of one of 14 deep wells of the municipal water system.

On Friday, August 13, an area physician reported to the County Health Authority that on the preceding day he had seen an unusually large number of patients with diarrhea, the majority of whom lived in the southwest section of town. Because of this apparent localization, the County Sanitarian took samples of water from the two wells serving this section. That evening, as a result of a steadily increasing number of cases of diarrhea, both in the southwest area and elsewhere in the city, the two wells were closed and the townspeople advised to boil

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CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

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

DISEASE	37th WEEK ENDED		MEDIAN 1960–1964	CUMULATIVE, FIRST 37 WEEKS		
	SEPTEMBER 18, 1965	SEPTEMBER 12, 1964		1965	1964	MEDIAN 1960–1964
Aseptic meningitis	102	51	129	1,337	1,331	1,634
Brucellosis	6	5	7	183	305	305
Diphtheria	1	2	9	106	181	274
Encephalitis, primary infectious	49	117	---	1,220	2,170	---
Encephalitis, post-infectious	8	1	---	539	683	---
Hepatitis, infectious including serum hepatitis	624	571	738	24,127	27,679	31,134
Measles	623	425	800	240,003	461,750	395,788
Meningococcal infections	26	26	27	2,316	2,044	1,596
Poliomyelitis, Total	–	3	32	41	76	536
Paralytic	–	3	23	32	63	416
Nonparalytic	–	–	---	7	9	---
Unspecified	–	–	---	2	4	---
Streptococcal Sore Throat and Scarlet fever	4,245	4,010	3,513	288,818	295,333	239,723
Tetanus	5	6	---	192	200	---
Tularemia	9	3	---	187	240	---
Typhoid fever	16	8	21	297	291	432
Rabies in Animals	81	109	53	3,240	3,359	2,753

NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	7	Rabies in Man:	1
Botulism:	11	Smallpox:	–
Leptospirosis: Hawaii-1, S.C.-1, Tenn.-1	31	Trichinosis: N.Y. Upstate-1	77
Malaria: N.Y. Upstate-1, Calif.-1	59	Typhus –	
Plague:	5	Murine:	22
Psittacosis:	34	Rky. Mt. Spotted: N.C.-3, Ala.-1, Colo.-1, W. Va.-1 Ky.-1, Tenn.-1	223
Cholera:	2		

AN EPIDEMIC OF WATERBORNE GASTROENTERITIS – Madera, California

(Continued from front page)

their water for domestic use until further notice. The State Department of Public Health was notified of the situation.

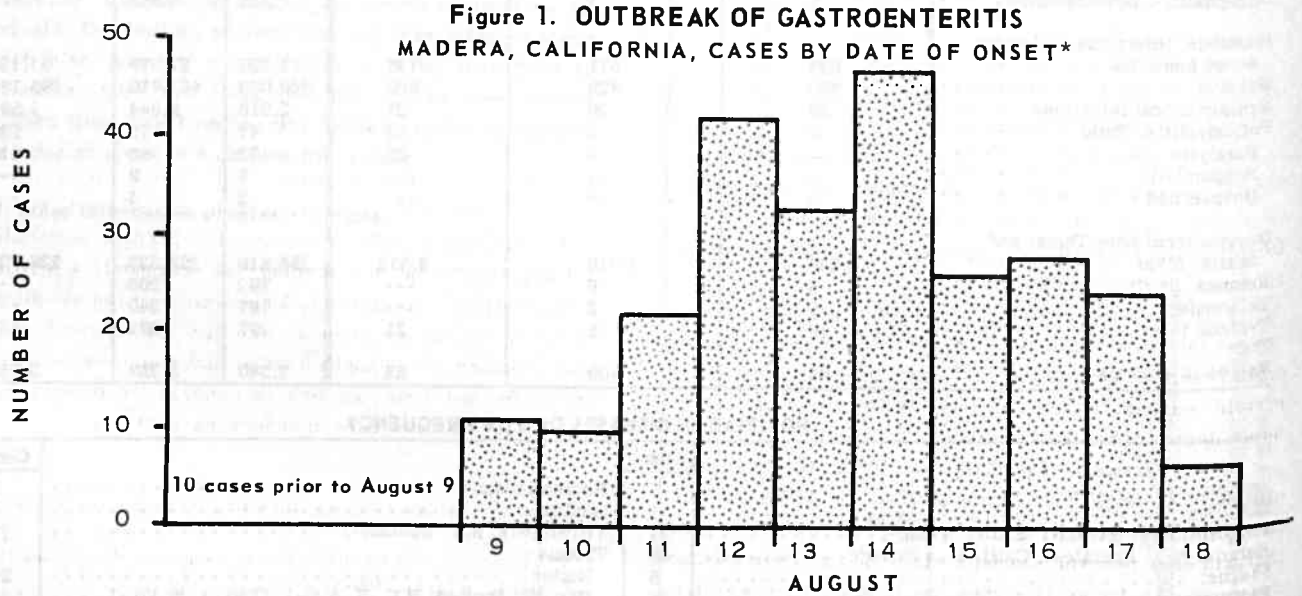
Investigation activities involved systematic sampling of the water supply with subsequent laboratory examinations, and a household sample survey of 10 percent of the urban population. The municipal water system, which is not routinely chlorinated, consists of 14 wells located throughout the town, all contributing to the distribution system and balancing reservoir. Through Tuesday, August 10, the laboratory reports from weekly bacteriological examinations of water samples from the entire distribution system were satisfactory. On Saturday, August 14, laboratory reports revealed that of the sample water taken from two closed wells on the preceding day, only that of well Number 14 was contaminated. Laboratory findings from the extensive sampling of water from the other 12 wells, the distribution system, and the reservoir indicated that although none of the other wells were contaminated, the entire distribution system and reservoir had been affected. It was presumed that the one contaminated well was the agent responsible for the extensive contamination.

Subsequent focus of investigation on well Number 14 led to the discovery of two relevant factors, a field 22 feet from the edge of the well which had been irrigated with sewage effluent on either August 10 or 11 and a sounding tube leading into the well water which was uncapped and had evidently been that way for some time. It was then experimentally demonstrated that sewage-contaminated water could seep from a gopher hole at the edge of the field into a valve pit next to the well and then either leak through a wooden barrier or through the uncapped sounding tube into the well shaft, thereby contaminating the water. Remedial action necessitated progressive chlorination of all city water and this was completed between Saturday, August 14, and early Monday, August 16.

The household sample survey, conducted by a team from the State Department of Health, was begun on August 18. Data collected indicated that the epidemic started Wednesday, August 11, reached a peak on Saturday, and was almost over by Wednesday, August 18 (Figure 1). The clinical picture was characterized by an abrupt onset of diarrhea; cramps and vomiting were present in 70 to 80 percent of the cases and fever in 65 percent. Blood and mucus rarely accompanied the diarrhea. There were no deaths and only two persons required hospitalization. Laboratory investigations of approximately 50 stool cultures or rectal swabs yielded isolates of five *Shigella flexneri* type 3 and two *Salmonella heidleberg*. The low frequency of isolation of pathogens and the mild clinical characteristics of the illness suggest a multiple and diverse etiology consistent with the contamination by sewage.

The geographical distribution revealed by the survey indicated that the highest diarrhea attack rates occurred in the southwest portion of town, where in one area the attack rate reached 53.6 percent. The average attack rate for the entire town was 16.5 percent. Another survey conducted among residents in areas just outside the town

Figure 1. OUTBREAK OF GASTROENTERITIS
MADERA, CALIFORNIA, CASES BY DATE OF ONSET*



*Determined by sample survey of 10% of urban population conducted on August 18, 1965.

which were not connected to the town water supply revealed that the attack rate among the group as a whole was 7.5 percent. Of those who did not drink any town water, the attack rate was 4.2 percent; of those who did have occasion to drink it, the rate was 16.5 percent. No significant variation in age specific attack rate was apparent.

Epidemiological and clinical data indicate that this was a common source epidemic of gastroenteritis, presumably due to a mixture of fecal pathogens and resulting from the contamination of a deep well by sewage effluent. The outbreak was terminated by chlorination of the public water supply.

(Reported by Dr. Philip Condit, Chief, and Dr. Henry Renteln, Bureau of Communicable Disease, California State Department of Public Health; and an EIS Officer.)

EPIDEMIOLOGIC NOTES AND REPORTS

DEATH ASSOCIATED WITH TICK PARALYSIS

La Grande, Oregon

On May 4, a five-year-old boy was present at a family picnic at La Grande, Oregon; four days later his parents noticed that the boy, who was normally unsteady on his feet due to congenital cranial abnormalities, was falling more often than usual. By the evening of that day, he was unable to stand. The next morning, May 9, the boy was taken to the family physician who immediately arranged for admission to the hospital on account of marked weakness of the arms and legs and difficulty in breathing.

On admission, the boy, who weighed only 32 pounds, was placed in a respirator and a tracheostomy was performed. Once breathing was properly established, an examination revealed a tick on the nuchal hairline which was promptly removed. For the next 18 hours the boy's breathing was easier, but after that time progressive respiratory and circulatory embarrassment developed. Despite all resuscitatory measures, including cardiac massage, he died on May 11.

Autopsy reports showed that the boy had several congenital abnormalities: choanal stenosis, shallow orbital cavities, craniosynostosis, and markedly diminished muscle masses. Otherwise there was only a relatively minor degree of cerebral endema.

May is the month of peak tick activity in the La Grande area and veterinarians have reported 10 cases of tick paralysis in dogs during the past few months. The tick that had been removed was later classified as *Dermacentor andersoni*. As far as is known the family picnic was the only occasion on which the boy had been exposed to tick infestation.

(Reported by Dr. Monroe A. Holmes, Acting Director, Epidemiology Section, Preventive Medical Services, Oregon State Department of Public Health; and Dr. R.A. Gingrich, Attending Physician, La Grande, Oregon).

[Editorial note: Cases of tick paralysis in humans are reported annually in North America and recently a non-fatal case was reported at Montrose in British Columbia, Canada.* In the U.S. some 100 cases have been recorded, of which 10 percent have proved fatal; of 250 cases recorded in Canada, 28 have died. The paralysis is a motor one believed to be caused by a toxin originating in the salivary glands of certain ticks. There is usually a 4-day attachment of a feeding tick, commonly a female, before the paralysis appears. Amelioration of the symptoms normally begins as soon as the tick is removed or it stops feeding. If the host's cardiac and respiratory centers are unaffected when the tick is removed, recovery takes place within a few hours to several days.**]

*Canadian Epidemiological Bulletin, Vol. 9, No. 7, (July, 1965), p. 59.

**Arthur, Don R. Ticks and Disease. Pergamon Press, London, England, 1962, pp. 309-313.

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
SEPTEMBER 18, 1965 AND SEPTEMBER 12, 1964 (37th WEEK)

Area	Aseptic Meningitis		Encephalitis Primary	Encephalitis Post-Inf.	Poliomyelitis Total Cases			Poliomyelitis Paralytic			Diphtheria	
						Cumulative			Cumulative			Cum.
	1965	1964	1965	1965	1965	1965	1964	1965	1965	1964	1965	1965
UNITED STATES...	102	51	49	8	-	41	76	-	32	63	1	106
NEW ENGLAND.....	1	3	1	-	-	-	2	-	-	2	1	2
Maine.....	-	3	-	-	-	-	1	-	-	1	-	-
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	1	-	-	-	-	-	-	-	-	-	1	2
Rhode Island.....	-	-	-	-	-	-	-	-	-	-	-	-
Connecticut.....	-	-	1	-	-	-	1	-	-	1	-	-
MIDDLE ATLANTIC.....	2	6	15	-	-	3	12	-	2	11	-	5
New York City.....	-	3	5	-	-	1	1	-	-	1	-	3
New York, Up-State.	-	-	1	-	-	-	9	-	-	8	-	-
New Jersey.....	-	1	7	-	-	2	2	-	2	2	-	-
Pennsylvania.....	2	2	2	-	-	-	-	-	-	-	-	2
EAST NORTH CENTRAL...	33	8	12	2	-	1	16	-	-	14	-	4
Ohio.....	3	4	6	-	-	-	2	-	-	2	-	1
Indiana.....	2	1	1	-	-	-	4	-	-	4	-	2
Illinois.....	5	1	4	2	-	1	5	-	-	5	-	-
Michigan.....	20	2	-	-	-	-	3	-	-	2	-	-
Wisconsin.....	3	-	1	-	-	-	2	-	-	1	-	1
WEST NORTH CENTRAL...	14	2	8	-	-	10	6	-	7	5	-	18
Minnesota.....	10	2	-	-	-	1	2	-	1	2	-	7
Iowa.....	3	-	2	-	-	4	-	-	2	-	-	1
Missouri.....	1	-	-	-	-	1	3	-	-	2	-	1
North Dakota.....	-	-	1	-	-	-	-	-	-	-	-	-
South Dakota.....	-	-	-	-	-	-	-	-	-	-	-	7
Nebraska.....	-	-	1	-	-	3	-	-	3	-	-	1
Kansas.....	-	-	4	-	-	1	1	-	1	1	-	1
SOUTH ATLANTIC.....	6	1	3	5	-	1	20	-	1	15	-	29
Delaware.....	1	-	-	-	-	-	-	-	-	-	-	-
Maryland.....	-	1	-	-	-	1	1	-	1	1	-	-
Dist. of Columbia..	-	-	-	-	-	-	-	-	-	-	-	3
Virginia.....	1	-	1	-	-	-	-	-	-	-	-	-
West Virginia.....	1	-	-	-	-	-	1	-	-	1	-	-
North Carolina.....	1	-	-	-	-	-	9	-	-	5	-	2
South Carolina.....	-	-	-	-	-	-	-	-	-	-	-	1
Georgia.....	-	-	-	-	-	-	1	-	-	1	-	14
Florida.....	2	-	2	5	-	-	8	-	-	7	-	9
EAST SOUTH CENTRAL...	5	4	2	-	-	1	5	-	1	4	-	17
Kentucky.....	-	-	-	-	-	-	-	-	-	-	-	-
Tennessee.....	1	-	2	-	-	1	3	-	1	2	-	-
Alabama.....	4	4	-	-	-	-	2	-	-	2	-	15
Mississippi.....	-	-	-	-	-	-	-	-	-	-	-	2
WEST SOUTH CENTRAL...	7	3	1	-	-	16	6	-	14	6	-	23
Arkansas.....	-	-	-	-	-	-	-	-	-	-	-	2
Louisiana.....	2	2	-	-	-	1	-	-	1	-	-	5
Oklahoma.....	-	1	-	-	-	1	2	-	1	2	-	-
Texas.....	5	-	1	-	-	14	4	-	12	4	-	16
MOUNTAIN.....	5	3	2	-	-	5	6	-	3	3	-	-
Montana.....	-	-	1	-	-	-	-	-	-	-	-	-
Idaho.....	-	-	-	-	-	-	-	-	-	-	-	-
Wyoming.....	1	-	-	-	-	-	2	-	-	2	-	-
Colorado.....	1	2	-	-	-	-	1	-	-	1	-	-
New Mexico.....	3	-	-	-	-	1	3	-	1	-	-	-
Arizona.....	-	-	1	-	-	4	-	-	2	-	-	-
Utah.....	-	1	-	-	-	-	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	29	21	5	1	-	4	3	-	4	3	-	8
Washington.....	1	2	-	-	-	2	-	-	2	-	-	2
Oregon.....	-	-	-	-	-	1	1	-	1	1	-	1
California.....	26	19	4	1	-	1	2	-	1	2	-	5
Alaska.....	-	-	-	-	-	-	-	-	-	-	-	-
Hawaii.....	2	-	1	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	-	-	-	-	-	-	-	-	-	10

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

SEPTEMBER 18, 1965 AND SEPTEMBER 12, 1964 (37th WEEK) - Continued

Area	Measles			Strept. Sore Th. & Scarlet Fev.	Tularemia		Typhoid Fever		Rabies in Animals	
		Cumulative				Cum.		Cum.		Cum.
	1965	1965	1964	1965	1965	1965	1965	1965	1965	1965
UNITED STATES..	623	240,003	461,750	4,245	9	187	16	297	81	3,240
NEW ENGLAND.....	44	36,798	16,903	245	-	1	-	4	1	38
Maine.....	2	2,792	2,999	53	-	-	-	-	1	4
New Hampshire.....	-	381	250	-	-	-	-	-	-	1
Vermont.....	-	1,257	2,319	-	-	-	-	-	-	30
Massachusetts.....	1	19,281	5,295	37	-	1	-	3	-	2
Rhode Island.....	39	3,938	1,928	11	-	-	-	1	-	-
Connecticut.....	2	9,149	4,112	144	-	-	-	-	-	1
MIDDLE ATLANTIC.....	52	14,747	52,148	132	-	-	-	51	2	129
New York City.....	19	2,378	15,329	4	-	-	-	25	-	-
New York, up-State.	6	4,125	12,698	72	-	-	-	13	2	117
New Jersey.....	18	2,565	12,201	49	-	-	-	6	-	-
Pennsylvania.....	9	5,679	11,920	7	-	-	-	7	-	12
EAST NORTH CENTRAL...	153	55,655	102,765	322	1	13	1	38	11	496
Ohio.....	6	8,867	19,620	16	-	-	-	9	5	257
Indiana.....	8	1,828	22,724	102	-	5	-	8	3	56
Illinois.....	24	2,701	16,616	46	-	5	-	10	1	79
Michigan.....	64	26,441	28,888	118	1	2	1	6	1	50
Wisconsin.....	51	15,818	14,917	40	-	1	-	5	1	54
WEST NORTH CENTRAL...	12	16,457	30,238	130	-	23	-	10	15	665
Minnesota.....	1	636	333	1	-	1	-	-	1	135
Iowa.....	5	8,983	23,312	39	-	-	-	2	4	191
Missouri.....	1	2,588	1,019	2	-	18	-	7	5	91
North Dakota.....	5	3,685	4,734	80	-	-	-	-	3	42
South Dakota.....	-	115	28	5	-	2	-	-	-	48
Nebraska.....	-	450	812	-	-	-	-	1	-	35
Kansas.....	NN	NN	NN	3	-	2	-	-	2	123
SOUTH ATLANTIC.....	126	24,693	38,268	540	1	30	7	63	11	445
Delaware.....	1	503	409	6	-	-	-	4	-	-
Maryland.....	3	1,160	3,402	26	-	-	3	18	1	22
Dist. of Columbia..	-	77	354	11	-	-	-	-	-	-
Virginia.....	4	3,851	12,698	122	1	7	4	8	4	278
West Virginia.....	92	13,698	8,612	222	-	-	-	3	-	21
North Carolina.....	5	389	1,160	2	-	6	-	15	1	3
South Carolina.....	6	1,016	4,253	34	-	3	-	8	-	2
Georgia.....	-	617	194	2	-	14	-	3	4	54
Florida.....	15	3,382	7,186	115	-	-	-	4	1	65
EAST SOUTH CENTRAL...	59	13,770	67,628	1,029	-	20	3	29	8	694
Kentucky.....	22	2,480	18,451	29	-	3	2	8	1	72
Tennessee.....	25	7,853	24,134	832	-	16	1	10	7	593
Alabama.....	11	2,322	18,356	62	-	1	-	6	-	15
Mississippi.....	1	1,115	6,687	106	-	-	-	5	-	14
WEST SOUTH CENTRAL...	72	30,818	72,006	656	6	76	3	42	22	515
Arkansas.....	-	1,084	1,124	-	5	51	-	13	3	77
Louisiana.....	1	105	105	1	1	4	1	6	-	69
Oklahoma.....	-	203	1,018	24	-	10	2	6	13	106
Texas.....	71	29,426	69,759	631	-	11	-	17	6	263
MOUNTAIN.....	39	19,688	18,570	719	-	15	-	24	3	72
Montana.....	3	3,714	3,038	56	-	4	-	1	-	5
Idaho.....	10	2,783	1,928	18	-	-	-	-	-	-
Wyoming.....	2	845	260	3	-	3	-	1	-	-
Colorado.....	7	5,627	3,226	349	-	-	-	-	-	9
New Mexico.....	-	677	450	177	-	-	-	9	-	14
Arizona.....	13	1,309	6,627	49	-	-	-	11	2	42
Utah.....	3	4,529	2,051	64	-	8	-	-	-	1
Nevada.....	1	204	990	3	-	-	-	2	1	1
PACIFIC.....	66	27,377	63,224	472	1	9	2	36	8	186
Washington.....	4	7,222	19,998	59	-	-	-	4	-	7
Oregon.....	18	3,231	8,631	6	1	5	-	5	-	6
California.....	23	12,942	32,964	321	-	4	2	26	8	171
Alaska.....	4	182	1,095	7	-	-	-	-	-	2
Hawaii.....	17	3,800	536	79	-	-	-	1	-	-
Puerto Rico	32	2,388	6,013	6	-	-	1	7	-	13

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

SEPTEMBER 18, 1965 AND SEPTEMBER 12, 1964 (37th WEEK) - Continued

Area	Brucellosis	Infectious Hepatitis including Serum Hepatitis					Meningococcal Infections			Tetanus	
		Total incl. unk.	Under 20 years	20 years and over	Cumulative Totals			Cumulative			Cum.
	1965	1965	1965	1965	1965	1964	1965	1965	1964	1965	1965
UNITED STATES...	6	624	288	300	24,127	27,679	26	2,316	2,044	5	192
NEW ENGLAND.....	-	52	20	31	1,428	2,578	3	117	55	-	5
Maine.....	-	5	3	2	260	825	-	16	5	-	-
New Hampshire.....	-	5	-	4	143	202	-	7	1	-	1
Vermont.....	-	2	2	-	76	323	-	6	1	-	-
Massachusetts.....	-	20	6	14	563	554	1	39	22	-	3
Rhode Island.....	-	7	2	5	164	137	-	14	9	-	-
Connecticut.....	-	13	7	6	222	537	2	35	17	-	1
MIDDLE ATLANTIC.....	-	87	37	50	4,268	6,141	3	303	256	1	12
New York City.....	-	32	11	21	853	943	-	51	35	-	-
New York, Up-State.	-	13	3	10	1,621	2,697	1	87	71	-	4
New Jersey.....	-	16	10	6	808	1,067	-	79	88	-	1
Pennsylvania.....	-	26	13	13	986	1,434	2	86	62	1	7
EAST NORTH CENTRAL...	3	134	65	63	4,606	4,346	5	327	278	2	27
Ohio.....	-	34	13	17	1,264	1,144	2	88	71	-	2
Indiana.....	-	12	10	1	409	378	1	42	42	1	7
Illinois.....	1	21	11	10	878	788	1	90	72	1	12
Michigan.....	1	65	29	35	1,779	1,723	1	70	64	-	3
Wisconsin.....	1	2	2	-	276	313	-	37	29	-	3
WEST NORTH CENTRAL...	1	30	17	11	1,425	1,496	1	119	122	-	17
Minnesota.....	-	2	-	1	143	166	1	24	29	-	7
Iowa.....	-	6	4	1	510	222	-	8	6	-	4
Missouri.....	1	5	2	3	305	367	-	52	56	-	2
North Dakota.....	-	4	2	2	27	57	-	11	16	-	-
South Dakota.....	-	-	-	-	17	116	-	3	1	-	-
Nebraska.....	-	3	1	2	60	42	-	10	6	-	2
Kansas.....	-	10	8	2	363	526	-	11	8	-	2
SOUTH ATLANTIC.....	-	74	34	34	2,515	2,594	5	448	404	2	43
Delaware.....	-	1	1	-	60	49	-	7	6	-	-
Maryland.....	-	4	2	2	442	493	1	43	26	-	1
Dist. of Columbia..	-	2	1	1	38	44	-	9	13	-	-
Virginia.....	-	16	6	7	582	407	2	54	46	-	7
West Virginia.....	-	12	8	4	370	385	-	24	31	-	1
North Carolina.....	-	6	3	3	240	443	1	90	69	1	6
South Carolina.....	-	9	5	4	114	95	-	58	50	-	6
Georgia.....	-	2	1	1	93	72	-	57	61	-	4
Florida.....	-	22	7	12	576	606	1	106	102	1	18
EAST SOUTH CENTRAL...	1	51	29	22	1,731	1,922	1	181	169	-	24
Kentucky.....	-	21	14	7	605	726	-	69	55	-	6
Tennessee.....	-	16	8	8	588	656	1	58	55	-	7
Alabama.....	-	7	2	5	313	350	-	34	35	-	9
Mississippi.....	1	7	5	2	225	190	-	20	24	-	2
WEST SOUTH CENTRAL...	-	51	26	23	2,096	2,138	2	307	231	-	43
Arkansas.....	-	7	4	3	280	210	1	15	20	-	10
Louisiana.....	-	2	1	1	345	503	1	170	114	-	5
Oklahoma.....	-	-	-	-	48	101	-	19	8	-	1
Texas.....	-	42	21	19	1,423	1,324	-	103	89	-	27
MOUNTAIN.....	-	36	16	10	1,358	1,675	-	72	69	-	3
Montana.....	-	1	-	1	103	147	-	2	-	-	-
Idaho.....	-	4	-	-	177	224	-	8	3	-	-
Wyoming.....	-	-	-	-	38	52	-	5	5	-	-
Colorado.....	-	16	10	6	295	444	-	14	12	-	2
New Mexico.....	-	8	6	2	279	245	-	11	28	-	-
Arizona.....	-	5	-	-	283	373	-	16	6	-	1
Utah.....	-	1	-	1	175	140	-	14	7	-	-
Nevada.....	-	1	-	-	8	50	-	2	8	-	-
PACIFIC.....	1	109	44	56	4,700	4,789	6	442	460	-	18
Washington.....	-	14	3	11	374	506	-	33	30	-	-
Oregon.....	-	9	-	-	397	524	-	32	21	-	4
California.....	1	85	40	45	3,710	3,494	6	352	390	-	14
Alaska.....	-	-	-	-	181	167	-	18	7	-	-
Hawaii.....	-	1	1	-	38	98	-	7	12	-	-
Puerto Rico	-	34	29	5	1,030	733	-	5	31	4	39

Week No. 37

Table 4. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED SEPTEMBER 18, 1965

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

Area	All Causes		Pneumonia and Influenza	Under 1 year
	All Ages	65 years and over	All Ages	All Causes
NEW ENGLAND:	709	428	28	33
Boston, Mass.	233	132	10	10
Bridgeport, Conn.	38	21	2	3
Cambridge, Mass.	31	19	-	-
Fall River, Mass.	27	13	1	1
Hartford, Conn.	53	28	-	5
Lowell, Mass.*	25	15	1	1
Lynn, Mass.	17	11	-	-
New Bedford, Mass.	23	13	1	-
New Haven, Conn.	46	26	-	3
Providence, R. I.	69	47	5	4
Somerville, Mass.	12	10	1	-
Springfield, Mass.	45	31	4	2
Waterbury, Conn.	34	24	-	1
Worcester, Mass.	56	38	3	3
MIDDLE ATLANTIC:	3,097	1,767	105	156
Albany, N. Y.	52	30	3	2
Allentown, Pa.	35	23	-	1
Buffalo, N. Y.	141	93	4	6
Camden, N. J.	44	28	1	2
Elizabeth, N. J.	29	14	1	2
Erie, Pa.	33	20	2	2
Jersey City, N. J.	58	34	6	4
Newark, N. J.	74	33	-	2
New York City, N. Y.	1,574	902	43	75
Paterson, N. J.	24	11	2	2
Philadelphia, Pa.	512	292	7	31
Pittsburgh, Pa.	189	89	10	13
Reading, Pa.	39	25	3	1
Rochester, N. Y.	97	51	14	5
Schenectady, N. Y.	29	19	1	1
Scranton, Pa.	27	15	1	2
Syracuse, N. Y.	45	22	2	3
Trenton, N. J.	41	26	3	1
Utica, N. Y.	18	14	1	-
Yonkers, N. Y.	36	26	1	1
EAST NORTH CENTRAL:	2,429	1,308	70	172
Akron, Ohio	64	34	-	8
Canton, Ohio	42	23	2	3
Chicago, Ill.	672	348	25	43
Cincinnati, Ohio	153	91	2	9
Cleveland, Ohio	199	98	6	16
Columbus, Ohio	112	62	2	11
Dayton, Ohio	77	38	-	5
Detroit, Mich.	335	168	9	32
Evansville, Ind.	30	20	1	1
Flint, Mich.	66	36	3	3
Fort Wayne, Ind.	40	27	7	1
Gary, Ind.*	29	13	2	3
Grand Rapids, Mich.	36	20	1	1
Indianapolis, Ind.	161	92	2	7
Madison, Wis.	48	21	1	-
Milwaukee, Wis.*	119	68	2	10
Peoria, Ill.	30	20	-	4
Rockford, Ill.	23	12	2	2
South Bend, Ind.	35	22	2	2
Toledo, Ohio	112	69	1	9
Youngstown, Ohio	46	26	-	2
WEST NORTH CENTRAL:	853	512	35	50
Des Moines, Iowa	58	41	5	2
Duluth, Minn.	29	24	-	2
Kansas City, Kans.	31	18	1	3
Kansas City, Mo.	150	83	3	7
Lincoln, Nebr.	40	29	3	2
Minneapolis, Minn.	123	75	4	9
Omaha, Nebr.	70	41	4	5
St. Louis, Mo.	231	128	8	13
St. Paul, Minn.	67	45	2	1
Wichita, Kans.	54	28	5	6
SOUTH ATLANTIC:	1,103	529	40	82
Atlanta, Ga.	134	43	4	17
Baltimore, Md.	256	130	7	18
Charlotte, N. C.	44	14	1	3
Jacksonville, Fla.	66	28	2	9
Miami, Fla.	87	49	2	2
Norfolk, Va.	57	29	3	6
Richmond, Va.	88	48	1	6
Savannah, Ga.	38	12	4	2
St. Petersburg, Fla.	65	46	3	1
Tampa, Fla.	62	37	4	2
Washington, D. C.	174	76	9	14
Wilmington, Del.	32	17	-	2
EAST SOUTH CENTRAL:	581	298	18	50
Birmingham, Ala.	112	51	-	8
Chattanooga, Tenn.	47	25	4	1
Knoxville, Tenn.	37	24	-	4
Louisville, Ky.	116	56	11	11
Memphis, Tenn.	118	56	1	9
Mobile, Ala.	42	23	1	6
Montgomery, Ala.	29	19	1	2
Nashville, Tenn.	80	44	-	9
WEST SOUTH CENTRAL:	1,185	584	38	85
Austin, Tex.	42	30	6	1
Baton Rouge, La.	19	7	-	1
Corpus Christi, Tex.	30	15	-	1
Dallas, Tex.	138	67	-	10
El Paso, Tex.	36	10	2	9
Fort Worth, Tex.	70	34	1	8
Houston, Tex.	228	103	7	16
Little Rock, Ark.	58	26	1	10
New Orleans, La.	247	132	8	9
Oklahoma City, Okla.	94	44	3	6
San Antonio, Tex.	94	57	-	5
Shreveport, La.	83	34	7	9
Tulsa, Okla.	46	25	3	-
MOUNTAIN:	352	192	10	26
Albuquerque, N. Mex.	40	24	2	4
Colorado Springs, Colo.	20	11	1	2
Denver, Colo.	103	52	1	7
Ogden, Utah	17	9	2	3
Phoenix, Ariz.	61	37	1	1
Pueblo, Colo.	18	6	1	4
Salt Lake City, Utah	42	25	1	1
Tucson, Ariz.	51	28	1	4
PACIFIC:	1,610	953	24	99
Berkeley, Calif.	25	15	-	-
Fresno, Calif.	70	33	-	5
Glendale, Calif.	32	25	1	1
Honolulu, Hawaii	51	24	-	3
Long Beach, Calif.	70	42	1	4
Los Angeles, Calif.	482	272	11	40
Oakland, Calif.	66	41	-	3
Pasadena, Calif.	53	40	-	2
Portland, Oreg.	140	92	2	6
Sacramento, Calif.	72	37	3	8
San Diego, Calif.	94	53	1	8
San Francisco, Calif.	208	119	3	9
San Jose, Calif.	40	23	-	4
Seattle, Wash.	130	85	2	4
Spokane, Wash.	46	29	-	2
Tacoma, Wash.	31	23	-	-
Total	11,919	6,571	368	753

*Estimate - based on average percent of divisional total.

Cumulative Totals
including reported corrections for previous weeks

All Causes, All Ages	457,319
All Causes, Age 65 and over	258,072
Pneumonia and Influenza, All Ages	18,807
All Causes, Under 1 Year of Age	27,222

INTERNATIONAL NOTES

POLIOMYELITIS – Blackburn, England

An epidemic of poliomyelitis in Blackburn, Lancashire, England and certain smaller contiguous communities has given rise to 50 cases. Of these, 24 have been classified as paralytic. The date of onset of the first case was June 28; the onset date of the last case reported in this series is not known but laboratory confirmation was given on September 1. Type I polio virus has been recovered from each of the 50 patients, all of whom were either unvaccinated or inadequately vaccinated.

The first seven patients were under 20 years of age and have a persistent paralysis; the remaining 43 patients were all adults, 17 of whom were reported to have varying degrees of paralysis.

The earliest cases occurred in a small community within Blackburn itself. Four days after laboratory confirmation of a Type I polio virus infection had been received, a mass immunization program using trivalent oral poliomyelitis vaccine was undertaken in this community. Later, as cases were being confirmed elsewhere in Blackburn, a mass program for the whole city was carried out over 4 days.

In two communities contiguous to Blackburn where single cases of polio had occurred, vaccination programs were also undertaken.

(Reported by Dr. Lawrence K. Altman, Chief, Epidemiology and Immunization Section, Division of Foreign Quarantine, U.S. Public Health Service, Washington, D.C.)

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THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT
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ATLANTA, GEORGIA 30333

NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE CDC BY THE INDIVIDUAL STATE HEALTH DEPARTMENTS. THE REPORTING WEEK CONCLUDES ON SATURDAY; COMPILED DATA ON A NATIONAL BASIS ARE RELEASED ON THE SUCCEEDING FRIDAY.