COMMUNICABLE DISEASE CENTER

Morbidity and Mortality

Vol. 14, No. 42

WEEKLY REPORT

Week Ending October 23, 1965

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

AN OUTBREAK OF SHIGELLOSIS IN KANSAS STATE UNIVERSITY – Manhattan, Kansas

Between May 1 and May 14, 1965, there were 110 cases of gastroenteritis reported from the Kansas State University Student Health Center. Male students were predominantly affected and a later post-epidemic questionnaire survey indicated that a total of some 230 male students residing in the same dormitory complex had been involved. *Shigella sonnei* was isolated from a number of the students admitted to the University Health Center Infirmary. Although the source of the outbreak was believed to be the male dormitory dining room facility, no specific food item could be incriminated.

CONTENTS

The peak of the epidemic occurred on May 7 and 8. The illnesses, which had a duration of 24 to 48 hours, were generally characterized by abrupt onset, abdominal cramps, watery diarrhea, fever, nausea and vomiting. The majority of the patients had fever greater than 101°F and many had elevated leukocyte counts.

Among the 110 students attending the Health Center, 86 were males of whom 60 lived in three dormitories

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

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

DISEASE	42nd WEEK ENDED		MEDIAN 1960–1964	CUMULATIVE, FIRST 42 WEEKS		
	OCTOBER 23, 1965	OCTOBER 17, 1964		1965	1964	MEDIAN 1960–1964
Aseptic meningitis	58	61	65	1,701	1,693	2,097
Brucellosis	4	2	8	202	336	337
Diphtheria	2	12	11	120	213	348
Encephalitis, primary infectious	67	91	- - -	1,518	2,685	- - -
Encephalitis, post-infectious	2	5	- - -	574	712	- - -
Hepatitis, infectious including serum hepatitis	672	629	876	27,421	31,083	35,061
Measles	782	961	1,325	243,772	465,411	400,500
Meningococcal infections	39	60	43	2,501	2,251	1,781
Poliomyelitis, Total	1	2	27	46	94	702
Paralytic	–	1	21	35	77	554
Nonparalytic	1	–	- - -	7	10	- - -
Unspecified	–	1	- - -	4	7	- - -
Streptococcal Sore Throat and Scarlet fever	6,149	5,395	4,752	316,934	320,599	258,816
Tetanus	4	10	- - -	214	230	- - -
Tularemia	3	11	- - -	208	275	- - -
Typhoid fever	16	6	14	353	351	510
Rabies in Animals	71	58	57	3,565	3,714	3,077

NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	7	Rabies in Man:	1
Botulism:	13	Smallpox:	–
Leptospirosis: Mich.-1, Tenn.-1	42	Trichinosis: Ill.-1, N.Y.Up-State-3	96
Malaria: Md.-2, N.Y.Up-State-1, Calif.-1	68	Typhus –	
Plague:	6	Murine:	22
Psittacosis:	36	Rky. Mt. Spotted: N.J.-1, Tenn.-1	244
Cholera:	2		

AN OUTBREAK OF SHIGELLOSIS IN KANSAS STATE UNIVERSITY – Manhattan, Kansas

(Continued from front page)

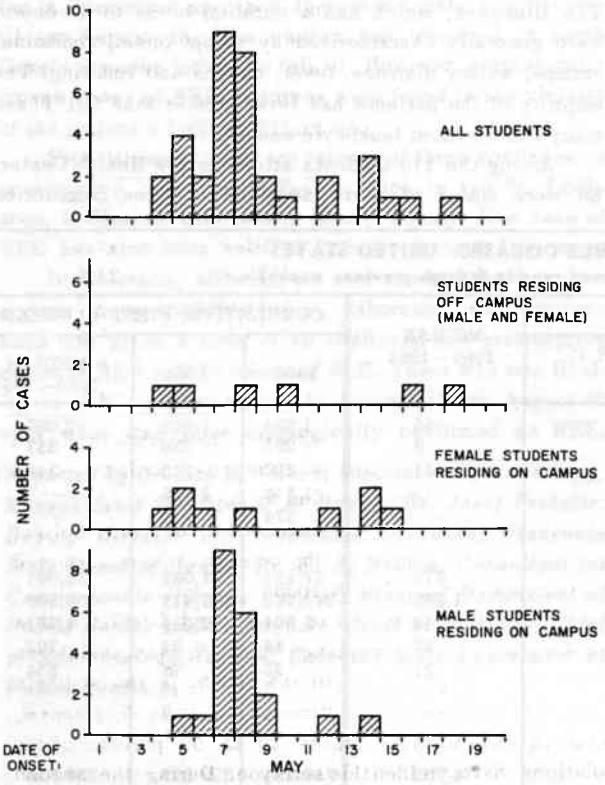
served by a common dining facility. The 24 female patients resided in six different dormitories each with its own dining facility. From 17 rectal cultures obtained from male patients in the hospital on May 7 and 8, *Shigella sonnei* was isolated from 13.

Epidemiological investigations included a survey of food histories, with particular reference to meals eaten on May 4, 5, and 6, and a post-epidemic questionnaire survey. The latter survey was of a stratified sample of 961 students representing 10 percent of the University enrollment. Only those individuals who had diarrhea as well as at least two of the four symptoms of tenesmus, vomiting, abdominal cramps and fever, were regarded as having shigellosis. The epidemic curve (Figure 1) constructed from these data suggests that the outbreak began on May 7 among male dormitory students. The illnesses in nonresident males and in female students were more diffusely scattered than in the male population living in dormitories. Table 1 shows the estimated attack rate by the type of eating establishment. The questionnaire gave no evidence which suggested that any one meal or food item was the common source of the infection.

Laboratory investigation subsequent to the questionnaire entailed a rectal culture survey of 276 students, 177 of whom were men. Among the men, 10.2 percent had stool cultures positive for *Shigella sonnei;* only 2.2 percent of the cultures from the 99 women students were positive. In addition, specimens from 195 employees in the University Food Service were examined, but only one culture was positive for shigella. The woman concerned had no history of illness and had not worked in the male dining hall.

Figure 1.

STUDENTS WITH GASTROENTERITIS*
KANSAS STATE UNIVERSITY-MAY 1965



*DATA OBTAINED FROM QUESTIONNAIRE FULLY COMPLETED BY 36 STUDENTS.

CASES OF GASTROENTERITIS DETERMINED BY THE CRITERIA: DIARRHEA PLUS TWO OF THE FOLLOWING SYMPTOMS; TENESMUS, CRAMPS, FEVER AND VOMITING.

Table 1
Outbreak of Shigellosis – Kansas State University
Estimated Attack Rates

A. By Type of Residence	Responding to Questionnaire	Ill	Attack Rate
Men's Residence Halls	205	23	11.2
Women's Residence Halls	240	10	4.2
Scholarship Houses	79	2	2.5
Fraternity Houses	44	0	0.0
Sorority Houses	94	3	3.2
Married Student Apartments	52	1	1.9
Off Campus	247	2	0.8
Total	961	41*	4.3

B. By Type of Eating Establishment	Responding to Questionnaire	Ill	Attack Rate
Resident Dining Halls – (men's and women's)	389	30	7.2
Student Union Building	77	1	1.3
Fraternity Houses	43	0	0.0
Sorority Houses	71	3	4.1
Other	286	4	1.5
Total	846	38*	4.5

*Only 36 ill students completed satisfactorily all sections of the questionnaire.

(Reported by Dr. Hilbert P. Jubelt, Student Health Director, Kansas State University; Dr. Donald E. Wilcox, State Epidemiologist, Kansas State Department of Health; and Dr. Norman W. Anderson, Director, Medical Health Services, Kansas State Department of Health; and a team of EIS Officers.)

SURVEILLANCE SUMMARY

SHIGELLA – SECOND QUARTER, 1965

In examining current shigella morbidity trends, the factors of seasonal distribution, age, sex, and family associations have been considered. Human serotype frequencies, geographical distribution patterns and non-human isolations are also summarized. A total of 1,515 human shigella isolations was notified from 46 States and three other reporting centers during the second quarter of 1965. This represents a decline from the 1,752 isolations reported in the first quarter of 1965, which was itself a decrease from the 2,101 isolations reported in the fourth quarter of 1964. The totals during these latter two quarters are based on figures submitted from 47 reporting centers.

The numbers of shigella isolations notified from the reporting centers indicate a seasonal pattern of low activity in the late spring with a marked increase in July and a peak in September, a trend which is characteristic of that of previous years. However, since there is usually a delay of 1 to 2 months in reporting, this suggests that the lowest clinical incidence is actually during late winter, which would be consistent with the classical concepts of an enteropathy.

Shigella isolations during the second quarter of 1965 demonstrate an age distribution similar to that of previous quarters. Approximately 73 percent of isolations were reported from children under 10 years of age. However, the sex distribution differs slightly with data from preceding quarters. Out of 1,515 isolations reported, the 1,472 which specified the sex indicated that 52.1 percent were from males; on the other hand, data from previous quarters indicated that male isolations have been slightly less than 50 percent. Both the age and sex distribution of shigella isolations are summarized in Table 2.

Table 2
SHIGELLA ISOLATIONS BY AGE AND SEX
Second Quarter, 1965

Age Group	Male	Female	Unknown	Total	Percent of Known Age
0-6 months	31	25	1	57	6.0
7-12 months	32	21	0	53	5.6
1-4 years	188	177	1	366	38.4
5-9 years	130	89	0	219	23.0
10-19 years	58	46	0	104	10.9
20-29 years	27	33	0	60	6.3
30-39 years	10	24	0	34	3.6
40-49 years	4	7	0	11	1.2
50-59 years	8	9	0	17	1.8
60-69 years	3	9	0	12	1.3
70-79 years	6	6	0	12	1.3
80+ years	3	3	0	6	0.6
Subtotal	500	449	2	951	
Unknown	267	256	41	564	
TOTAL	767	705	43	1,515	

During the second quarter of 1965, 19.5 percent of the isolations were from families in which shigella was isolated from more than one member. In preceding quarters there has been a generally similar percentage of family-associated infections and in the first quarter of 1965 this figure was 22.5 percent. As these percentages represent only laboratory confirmed infections, it is probable that the intrafamilial infection rates are somewhat higher.

There were 14 different serotypes reported from the 49 reporting centers; no single serotype was common to all. The six most frequently isolated serotypes have been consistently the same since shigella reporting was started. They account for over 80 percent of all isolations.

	Second Quarter			Previous Quarter
Rank	Serotype	Number	Percent	Percent
1	*S. sonnei*	516	34.1	41.2
2	*S. flexneri 2*	391	25.8	21.4
3	*S. flexneri 3*	165	11.0	9.1
4	*S. flexneri 4*	94	6.3	5.5
5	*S. flexneri 1*	88	5.7	3.1
6	*S. flexneri 6*	54	3.6	4.8

Shigella sonnei and *S. flexneri 2* have always proved to be the two most common serotypes; positions three through six have been occupied by *S. flexneri 1, 3, 4, 6,* in varying order. As all States do not perform final serotyping, the *S. flexneri* subgroups have been combined into the major numbered subgroups.

A regional difference has been found to exist with a significantly higher percentage of *S. flexneri* isolations in the South as compared to the North. In the southern states 75 percent of isolations have been *S. flexneri,* while in the northern states 40 to 50 percent of the isolations have yielded this serotype. During the second quarter the figures were 78.7 percent and 48.3 percent respectively.

There were 15 shigella isolations reported from non-human sources in the second quarter. These include 11 *S. flexneri 3* from monkeys in Maryland, 1 *S. dysenteriae 3573-50* in a monkey from Illinois, 1 *S. flexneri 2b* from slurries of checked eggs in Colorado, 1 *S. sonnei II* from turkey droppings in Colorado; and 1 *S. flexneri 2a* from the "environment" on a farm in Texas. The shigellae

(Continued on back page)

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
OCTOBER 23, 1965 AND OCTOBER 17, 1964 (42nd WEEK)

Area	Aseptic Meningitis		Encephalitis		Poliomyelitis						Diphtheria	
			Primary	Post-Inf.	Total Cases			Paralytic				
						Cumulative			Cumulative			Cum.
	1965	1964	1965	1965	1965	1965	1964	1965	1965	1964	1965	1965
UNITED STATES...	58	61	67	2	1	46	94	-	35	77	2	120
NEW ENGLAND.....	5	-	1	-	-	-	2	-	-	2	-	2
Maine.....	-	-	-	-	-	-	1	-	-	1	-	-
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	2	-	1	-	-	-	-	-	-	-	-	2
Rhode Island.....	2	-	-	-	-	-	-	-	-	-	-	-
Connecticut.....	1	-	-	-	-	-	1	-	-	1	-	-
MIDDLE ATLANTIC.....	8	7	9	1	-	4	14	-	3	13	-	5
New York City.....	4	-	3	-	-	1	2	-	-	2	-	3
New York, Up-State.	1	2	1	-	-	-	10	-	-	9	-	-
New Jersey.....	3	5	3	-	-	3	2	-	3	2	-	-
Pennsylvania.....	-	-	2	1	-	-	-	-	-	-	-	2
EAST NORTH CENTRAL...	9	6	12	-	-	2	20	-	2	15	1	6
Ohio.....	1	1	5	-	-	-	2	-	-	2	-	1
Indiana.....	1	-	4	-	-	-	7	-	-	5	-	2
Illinois.....	5	3	1	-	-	1	6	-	1	5	1	2
Michigan.....	1	2	2	-	-	1	3	-	1	2	-	-
Wisconsin.....	1	-	-	-	-	-	2	-	-	1	-	1
WEST NORTH CENTRAL...	3	5	11	-	1	11	9	-	7	7	-	19
Minnesota.....	3	4	-	-	-	1	3	-	1	2	-	7
Iowa.....	-	-	4	-	1	5	-	-	2	-	-	1
Missouri.....	-	-	-	-	-	1	4	-	-	3	-	1
North Dakota.....	-	-	1	-	-	-	1	-	-	1	-	-
South Dakota.....	-	-	2	-	-	-	-	-	-	-	-	7
Nebraska.....	-	-	1	-	-	3	-	-	3	-	-	2
Kansas.....	-	1	3	-	-	1	1	-	1	1	-	1
SOUTH ATLANTIC.....	6	8	2	-	-	1	25	-	1	20	1	31
Delaware.....	1	-	1	-	-	-	-	-	-	-	-	-
Maryland.....	1	-	-	-	-	1	1	-	1	1	-	-
Dist. of Columbia..	-	-	-	-	-	-	-	-	-	-	-	3
Virginia.....	2	-	1	-	-	-	3	-	-	3	-	-
West Virginia.....	1	1	-	-	-	-	1	-	-	1	-	-
North Carolina.....	-	-	-	-	-	-	10	-	-	6	1	3
South Carolina.....	-	-	-	-	-	-	1	-	-	1	-	1
Georgia.....	-	-	-	-	-	-	1	-	-	1	-	15
Florida.....	1	7	-	-	-	-	8	-	-	7	-	9
EAST SOUTH CENTRAL...	5	4	-	-	-	1	6	-	1	5	-	18
Kentucky.....	-	3	-	-	-	-	-	-	-	-	-	-
Tennessee.....	1	-	-	-	-	1	3	-	1	2	-	1
Alabama.....	4	1	-	-	-	-	2	-	-	2	-	15
Mississippi.....	-	-	-	-	-	-	1	-	-	1	-	2
WEST SOUTH CENTRAL...	2	3	-	-	-	16	8	-	14	8	-	30
Arkansas.....	-	-	-	-	-	-	-	-	-	-	-	2
Louisiana.....	-	1	-	-	-	1	-	-	1	-	-	7
Oklahoma.....	-	-	-	-	-	1	2	-	1	2	-	-
Texas.....	2	2	-	-	-	14	6	-	12	6	-	21
MOUNTAIN.....	2	1	26	-	-	5	7	-	3	4	-	-
Montana.....	-	-	-	-	-	-	-	-	-	-	-	-
Idaho.....	-	-	-	-	-	-	1	-	-	1	-	-
Wyoming.....	-	-	-	-	-	-	2	-	-	2	-	-
Colorado.....	-	1	26	-	-	-	1	-	-	1	-	-
New Mexico.....	2	-	-	-	-	1	3	-	1	-	-	-
Arizona.....	-	-	-	-	-	4	-	-	2	-	-	-
Utah.....	-	-	-	-	-	-	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	18	27	6	1	-	6	3	-	4	3	-	9
Washington.....	-	1	-	-	-	2	-	-	2	-	-	3
Oregon.....	1	-	2	-	-	1	1	-	1	1	-	1
California.....	16	26	4	1	-	3	2	-	1	2	-	5
Alaska.....	-	-	-	-	-	-	-	-	-	-	-	-
Hawaii.....	1	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	-	-	-	-	-	-	-	-	-	12

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

OCTOBER 23, 1965 AND OCTOBER 17, 1964 (42nd 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...	4	672	287	329	27,421	31,083	39	2,501	2,251	4	214
NEW ENGLAND.....	-	43	14	25	1,598	2,846	3	128	70	-	5
Maine.....	-	5	2	3	280	895	-	16	6	-	-
New Hampshire.....	-	-	-	-	158	219	-	7	1	-	1
Vermont.....	-	1	-	-	87	349	-	7	4	-	-
Massachusetts.....	-	18	5	12	627	638	1	46	29	-	3
Rhode Island.....	-	3	1	2	174	165	-	14	10	-	-
Connecticut.....	-	16	6	8	272	580	2	38	20	-	1
MIDDLE ATLANTIC.....	-	101	42	59	4,853	6,865	4	321	285	-	13
New York City.....	-	25	9	16	989	1,061	-	54	38	-	-
New York, Up-State.	-	20	12	8	1,807	2,983	-	92	82	-	5
New Jersey.....	-	29	12	17	922	1,168	1	82	94	-	1
Pennsylvania.....	-	27	9	18	1,135	1,653	3	93	71	-	7
EAST NORTH CENTRAL...	-	124	45	52	5,301	4,881	6	364	303	2	32
Ohio.....	-	50	16	14	1,475	1,283	1	97	77	-	2
Indiana.....	-	8	3	5	452	419	1	47	48	2	9
Illinois.....	-	10	3	4	998	909	1	100	78	-	15
Michigan.....	-	50	23	27	2,040	1,920	2	78	69	-	3
Wisconsin.....	-	6	-	2	336	350	1	42	31	-	3
WEST NORTH CENTRAL...	3	28	13	14	1,555	1,679	2	128	130	1	19
Minnesota.....	1	11	1	9	175	196	2	29	29	-	8
Iowa.....	1	2	-	2	531	267	-	12	7	-	4
Missouri.....	-	9	8	1	332	413	-	52	58	-	2
North Dakota.....	-	-	-	-	29	60	-	11	19	1	1
South Dakota.....	-	-	-	-	20	129	-	3	3	-	-
Nebraska.....	1	3	3	-	78	45	-	10	6	-	2
Kansas.....	-	3	1	2	390	569	-	11	8	-	2
SOUTH ATLANTIC.....	-	80	42	32	2,847	2,928	7	471	439	-	47
Delaware.....	-	8	4	4	74	65	-	9	6	-	-
Maryland.....	-	15	10	5	498	539	1	45	32	-	1
Dist. of Columbia..	-	2	-	2	41	60	-	9	14	-	-
Virginia.....	-	17	7	6	679	463	-	57	50	-	7
West Virginia.....	-	9	5	4	395	419	1	25	33	-	1
North Carolina.....	-	18	13	5	275	489	1	96	75	-	7
South Carolina.....	-	2	2	-	128	113	2	62	53	-	6
Georgia.....	-	-	-	-	98	86	1	58	64	-	5
Florida.....	-	9	1	6	659	694	1	110	112	-	20
EAST SOUTH CENTRAL...	-	51	32	18	1,958	2,144	1	194	177	-	28
Kentucky.....	-	17	11	5	698	771	1	76	57	-	6
Tennessee.....	-	20	10	10	660	751	-	61	56	-	10
Alabama.....	-	11	8	3	351	407	-	35	40	-	10
Mississippi.....	-	3	3	-	249	215	-	22	24	-	2
WEST SOUTH CENTRAL...	1	44	17	26	2,364	2,423	5	324	260	-	46
Arkansas.....	-	4	1	3	301	228	1	16	23	-	11
Louisiana.....	-	12	7	5	394	593	3	180	124	-	5
Oklahoma.....	-	1	1	-	50	117	-	20	11	-	1
Texas.....	1	27	8	18	1,619	1,485	1	108	102	-	29
MOUNTAIN.....	-	35	14	9	1,515	1,874	1	87	74	-	3
Montana.....	-	5	4	1	127	165	-	2	-	-	-
Idaho.....	-	1	-	-	185	263	-	9	3	-	-
Wyoming.....	-	-	-	-	40	65	-	5	5	-	-
Colorado.....	-	8	3	5	321	493	-	24	13	-	2
New Mexico.....	-	6	4	-	322	261	-	11	29	-	-
Arizona.....	-	9	-	-	324	419	-	16	7	-	1
Utah.....	-	6	3	3	187	157	1	17	7	-	-
Nevada.....	-	-	-	-	9	51	-	3	10	-	-
PACIFIC.....	-	166	68	94	5,430	5,443	10	484	513	1	21
Washington.....	-	16	7	9	418	550	2	37	39	-	-
Oregon.....	-	19	5	10	460	570	-	33	21	-	4
California.....	-	111	54	57	4,291	3,977	8	388	434	1	17
Alaska.....	-	3	1	2	196	240	-	18	7	-	-
Hawaii.....	-	17	1	16	65	106	-	8	12	-	-
Puerto Rico	-	22	14	8	1,177	859	-	9	31	3	48

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
OCTOBER 23, 1965 AND OCTOBER 17, 1964 (42nd 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...	782	243,772	465,411	6,149	3	208	16	353	71	3,565
NEW ENGLAND.....	25	36,932	17,296	357	-	1	1	7	3	44
Maine.....	7	2,828	3,068	15	-	-	-	-	-	4
New Hampshire.....	1	382	260	11	-	-	-	-	-	3
Vermont.....	-	1,301	2,346	10	-	-	-	-	-	31
Massachusetts.....	10	19,315	5,461	73	-	1	-	3	-	2
Rhode Island.....	3	3,943	1,974	34	-	-	-	1	-	-
Connecticut.....	4	9,163	4,187	214	-	-	1	3	3	4
MIDDLE ATLANTIC.....	127	15,162	52,368	360	-	-	3	63	9	164
New York City.....	19	2,488	15,382	9	-	-	-	29	-	-
New York, up-State.	31	4,195	12,773	188	-	-	-	15	9	151
New Jersey.....	57	2,714	12,234	144	-	-	-	7	-	-
Pennsylvania.....	20	5,765	11,979	19	-	-	3	12	-	13
EAST NORTH CENTRAL...	214	56,581	103,347	385	-	13	1	42	2	538
Ohio.....	10	8,921	19,669	42	-	-	-	11	-	277
Indiana.....	38	1,998	22,884	66	-	5	1	9	1	65
Illinois.....	23	2,827	16,653	82	-	5	-	10	-	83
Michigan.....	52	26,695	29,038	114	-	2	-	7	-	53
Wisconsin.....	91	16,140	15,103	81	-	1	-	5	1	60
WEST NORTH CENTRAL...	37	16,714	30,343	233	-	26	-	11	18	728
Minnesota.....	7	705	335	13	-	1	-	1	6	149
Iowa.....	16	9,068	23,338	65	-	-	-	2	3	206
Missouri.....	5	2,600	1,025	-	-	19	-	7	6	104
North Dakota.....	8	3,773	4,796	125	-	-	-	-	-	45
South Dakota.....	-	115	35	6	-	2	-	-	3	56
Nebraska.....	1	453	814	-	-	-	-	1	-	36
Kansas.....	NN	NN	NN	24	-	4	-	-	-	132
SOUTH ATLANTIC.....	98	25,230	38,657	651	2	33	2	68	5	474
Delaware.....	-	506	412	18	-	-	-	4	-	-
Maryland.....	-	1,170	3,413	58	-	-	-	20	-	23
Dist. of Columbia..	-	78	354	16	-	-	-	-	-	-
Virginia.....	13	3,913	12,724	188	-	8	-	8	3	289
West Virginia.....	60	14,020	8,835	191	-	-	-	3	-	21
North Carolina.....	1	396	1,169	32	2	8	-	15	-	3
South Carolina.....	-	1,058	4,269	9	-	3	-	8	-	2
Georgia.....	-	617	199	5	-	14	2	6	1	63
Florida.....	24	3,472	7,282	134	-	-	-	4	1	73
EAST SOUTH CENTRAL...	69	14,205	68,111	1,129	-	21	5	38	13	753
Kentucky.....	24	2,714	18,585	40	-	3	1	10	1	81
Tennessee.....	35	8,026	24,440	982	-	17	-	12	8	615
Alabama.....	4	2,339	18,397	86	-	1	2	9	-	16
Mississippi.....	6	1,126	6,689	21	-	-	2	7	4	41
WEST SOUTH CENTRAL...	59	31,164	72,338	643	1	88	-	50	6	568
Arkansas.....	-	1,085	1,134	3	1	61	-	13	1	82
Louisiana.....	1	110	117	20	-	5	-	9	-	72
Oklahoma.....	-	210	1,021	16	-	11	-	6	1	126
Texas.....	58	29,759	70,066	604	-	11	-	22	4	288
MOUNTAIN.....	84	19,982	19,048	1,200	-	16	-	28	3	80
Montana.....	18	3,764	3,238	57	-	4	-	1	-	5
Idaho.....	28	2,832	1,952	47	-	-	-	-	-	-
Wyoming.....	1	852	265	28	-	4	-	1	-	-
Colorado.....	19	5,715	3,263	485	-	-	-	-	-	9
New Mexico.....	2	679	507	356	-	-	-	11	-	14
Arizona.....	7	1,357	6,702	79	-	-	-	12	3	49
Utah.....	9	4,577	2,129	148	-	8	-	1	-	2
Nevada.....	-	206	992	-	-	-	-	2	-	1
PACIFIC.....	69	27,802	63,903	1,191	-	10	4	46	12	216
Washington.....	12	7,295	20,167	295	-	-	-	4	-	7
Oregon.....	12	3,315	8,718	22	-	5	-	8	-	9
California.....	26	13,106	33,276	792	-	5	4	33	12	198
Alaska.....	3	190	1,124	14	-	-	-	-	-	2
Hawaii.....	16	3,896	618	68	-	-	-	1	-	-
Puerto Rico	27	2,531	6,632	26	-	-	1	13	-	13

Week No. 42

DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED OCTOBER 23, 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:	703	429	35	46
Boston, Mass.	257	148	11	16
Bridgeport, Conn.	35	23	2	4
Cambridge, Mass.	27	17	-	1
Fall River, Mass.	19	10	2	1
Hartford, Conn.	54	28	3	3
Lowell, Mass.	21	16	-	1
Lynn, Mass.	30	24	-	1
New Bedford, Mass.	36	28	3	-
New Haven, Conn.	44	24	1	7
Providence, R. I.	69	48	5	3
Somerville, Mass.	5	5	-	-
Springfield, Mass.	46	28	6	4
Waterbury, Conn.	23	11	2	3
Worcester, Mass.	37	19	-	2
MIDDLE ATLANTIC:	3,340	1,946	148	170
Albany, N. Y.	52	33	1	5
Allentown, Pa.	33	24	2	1
Buffalo, N. Y.	137	84	6	10
Camden, N. J.	53	33	2	4
Elizabeth, N. J.	41	25	1	2
Erie, Pa.	39	28	7	4
Jersey City, N. J.	90	50	1	5
Newark, N. J.	99	41	3	13
New York City, N. Y.	1,688	1,004	72	69
Paterson, N. J.	41	24	2	1
Philadelphia, Pa.	476	268	17	25
Pittsburgh, Pa.	221	100	5	12
Reading, Pa.	33	21	2	2
Rochester, N. Y.	103	61	12	10
Schenectady, N. Y.	31	18	4	-
Scranton, Pa.	39	26	2	2
Syracuse, N. Y.	60	43	1	2
Trenton, N. J.	43	22	3	2
Utica, N. Y.	26	21	4	-
Yonkers, N. Y.	35	20	1	1
EAST NORTH CENTRAL:	2,570	1,427	88	150
Akron, Ohio	60	34	-	6
Canton, Ohio	33	23	2	1
Chicago, Ill.	720	372	29	28
Cincinnati, Ohio	167	106	7	11
Cleveland, Ohio	237	118	2	26
Columbus, Ohio	142	85	-	9
Dayton, Ohio	93	51	4	4
Detroit, Mich.	321	181	10	19
Evansville, Ind.	40	29	4	-
Flint, Mich.	50	25	2	8
Fort Wayne, Ind.	43	23	5	1
Gary, Ind.	49	19	5	7
Grand Rapids, Mich.	42	26	4	1
Indianapolis, Ind.	154	82	6	9
Madison, Wis.	38	19	-	2
Milwaukee, Wis.	117	70	2	7
Peoria, Ill.	43	23	-	2
Rockford, Ill.	25	21	1	-
South Bend, Ind.	36	21	1	1
Toledo, Ohio	90	60	4	5
Youngstown, Ohio	70	39	-	3
WEST NORTH CENTRAL:	818	503	24	46
Des Moines, Iowa	57	33	-	-
Duluth, Minn.	29	22	-	1
Kansas City, Kans.	43	24	-	5
Kansas City, Mo.	118	72	6	7
Lincoln, Nebr.	21	14	-	3
Minneapolis, Minn.	125	84	4	6
Omaha, Nebr.	69	36	1	3
St. Louis, Mo.	232	136	9	13
St. Paul, Minn.	75	50	-	3
Wichita, Kans.	49	32	4	5

Area	All Causes		Pneumonia and Influenza	Under 1 year
	All Ages	65 years and over	All Ages	All Causes
SOUTH ATLANTIC:	1,139	552	55	82
Atlanta, Ga.	130	54	6	9
Baltimore, Md.	268	131	3	21
Charlotte, N. C.	47	22	4	3
Jacksonville, Fla.	58	26	3	4
Miami, Fla.	71	42	2	5
Norfolk, Va.	55	23	5	3
Richmond, Va.	95	41	3	9
Savannah, Ga.	29	16	4	1
St. Petersburg, Fla.	63	47	2	4
Tampa, Fla.	74	39	9	4
Washington, D. C.	207	91	14	16
Wilmington, Del.	42	20	-	3
EAST SOUTH CENTRAL:	593	312	23	33
Birmingham, Ala.	102	54	1	5
Chattanooga, Tenn.	53	29	6	3
Knoxville, Tenn.	34	23	1	2
Louisville, Ky.	126	70	4	7
Memphis, Tenn.	112	57	3	3
Mobile, Ala.	58	29	1	3
Montgomery, Ala.	27	16	-	2
Nashville, Tenn.	81	34	7	8
WEST SOUTH CENTRAL:	1,084	571	41	91
Austin, Tex.	34	22	3	-
Baton Rouge, La.	37	25	1	2
Corpus Christi, Tex.	25	10	-	1
Dallas, Tex.	150	70	5	16
El Paso, Tex.	36	19	-	2
Fort Worth, Tex.	53	33	4	2
Houston, Tex.	195	95	10	16
Little Rock, Ark.	71	41	3	13
New Orleans, La.	165	79	6	14
Oklahoma City, Okla.	79	41	1	7
San Antonio, Tex.	117	68	2	6
Shreveport, La.	71	42	3	9
Tulsa, Okla.	51	26	3	3
MOUNTAIN:	376	225	17	21
Albuquerque, N. Mex.	27	12	1	1
Colorado Springs, Colo.	16	13	1	-
Denver, Colo.	109	66	4	6
Ogden, Utah	18	12	1	1
Phoenix, Ariz.	102	54	10	8
Pueblo, Colo.	22	13	-	2
Salt Lake City, Utah	44	28	-	3
Tucson, Ariz.	38	27	-	-
PACIFIC:	1,514	860	44	111
Berkeley, Calif.	30	15	-	4
Fresno, Calif.	59	37	2	1
Glendale, Calif.	38	29	1	-
Honolulu, Hawaii	39	15	1	9
Long Beach, Calif.	70	41	1	2
Los Angeles, Calif.	407	215	17	43
Oakland, Calif.	113	62	2	12
Pasadena, Calif.	32	24	1	1
Portland, Oreg.	110	49	2	9
Sacramento, Calif.	63	35	2	2
San Diego, Calif.	98	59	4	2
San Francisco, Calif.	216	116	7	13
San Jose, Calif.	32	24	-	1
Seattle, Wash.	129	85	3	6
Spokane, Wash.	50	35	1	3
Tacoma, Wash.	28	19	-	3
Total	12,137	6,825	475	750

Cumulative Totals
including reported corrections for previous weeks

All Causes, All Ages	516,209
All Causes, Age 65 and over	291,190
Pneumonia and Influenza, All Ages	20,829
All Causes, Under 1 Year of Age	30,659

SURVEILLANCE SUMMARY
SHIGELLA – SECOND QUARTER, 1965

(Continued from page 363)

isolated in Colorado were found during a routine culturing of checked eggs and cattle feed, which was initiated to determine if enteric pathogens, particularly salmonella, were present. No report of animal or human disease associated with any of these isolations was received.

(Reported by the Shigella Surveillance Unit, CDC.)

EPIDEMIOLOGIC NOTES AND REPORTS

MEASLES – Newark, New Jersey

An analysis of 84 cases of measles reported from Newark, New Jersey, during the period from September 1 through October 19 revealed that 64 cases were concentrated in the central and the south wards of the city's five wards. Altogether, 63 families were affected, of which 17 families had more than one reported case of measles. There were 8 instances of presumed co-primary infections and 7 instances of a primary case in a school-age child with subsequent spread to siblings of preschool age. In two families spread from a child of preschool age occurred. The age distribution is listed below:

Age	<1 year	1-4 years	5-9 years	>10 years
Number of Cases	4	48	32	0

An immunization survey was conducted by the New Jersey State Health Department in February 1965. This indicated that 6 percent of the children of 1-4 years of age in the lower socioeconomic areas of Newark had been vaccinated against measles, whereas 19 percent was the average figure for the same age group in the city as a whole. The State Health Department has since made available, to private physicians, measles vaccine for children in the lower socioeconomic areas and the Newark Health Department is also sponsoring measles vaccination of young children at the public well-baby clinics.

(Reported by Dr. Pascal J. Baiocchi, Director, Health and Welfare Department, City of Newark; Dr. Aaron H. Haskin, Health Officer, City of Newark; Dr. W. J. Dougherty, Director, Epidemiology, New Jersey State Health Department; and an EIS Officer.)

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 14,000, IS PUBLISHED AT THE COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

CHIEF, COMMUNICABLE DISEASE CENTER — JAMES L. GODDARD, M.D.
CHIEF, EPIDEMIOLOGY BRANCH — A. D. LANGMUIR, M.D.
ACTING CHIEF, STATISTICS SECTION — IDA L. SHERMAN, M.S.
CHIEF, SURVEILLANCE SECTION — D. A. HENDERSON, M.D.

EDITOR: MMWR — D.J.M. MACKENZIE, M.B., F.R.C.P.E.

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

THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT
COMMUNICABLE DISEASE CENTER
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.