REPORT NO. 31
DECEMBER 1972

center for disease control

SHIGELLA

surveillance

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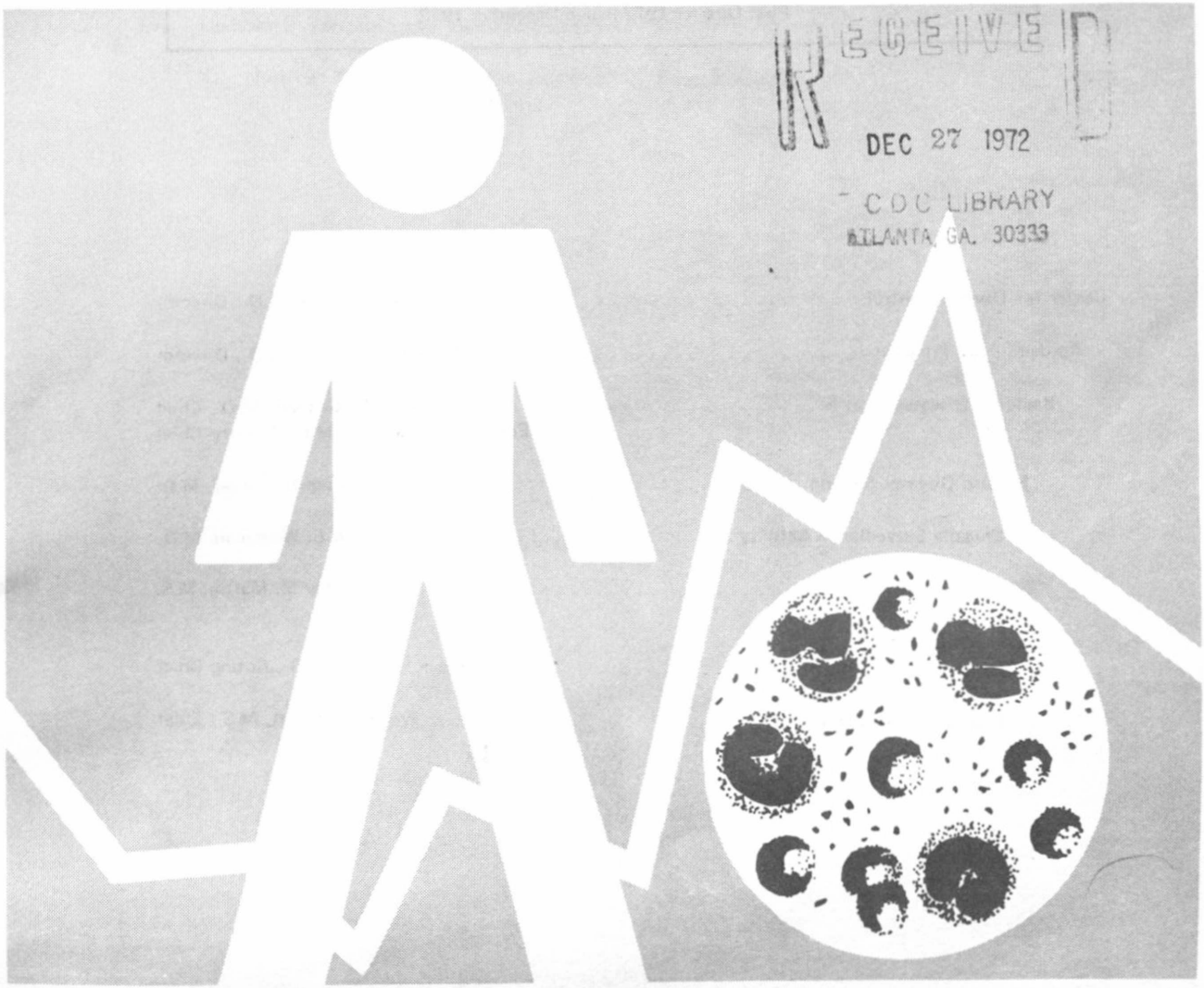
for the
First Quarter 1972



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE: PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

PREFACE

This report summarizes data voluntarily reported from participating state, territorial, and city health departments. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the original investigator for confirmation and interpretation.

Contributions to the surveillance report are most welcome. Please address to:

Center for Disease Control
Attn: Shigella Surveillance Activity
Epidemiology Program
Atlanta, Georgia 30333

SUGGESTED CITATION

Center for Disease Control: Shigella Surveillance Report No. 31
First Quarter 1972 issued December 1972

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I. Summary

In the first quarter of 1972, 2,798 shigella isolations from humans were reported, a decrease of 1,196 (29.9 percent) from the 3,994 isolations in the fourth quarter 1971, and a decrease of 439 (13.6 percent) from the 3,237 isolations in the first quarter of 1971 (Table I).*

II. Reported Isolations

A. Human

1. General Incidence

In the first quarter of 1972, 69.2 percent of isolations were from children under 10 years of age (Table II); this is consistent with previous quarters. The highest attack rate was in the 1-4 age group.

2. Serotype Frequency

Fifty of the 54 reporting centers participating in the Shigella Surveillance Program reported isolations of shigella. Twenty serotypes were reported (Table I). The six most frequently reported serotypes for the 3-month period were the following (Table 1).

Table 1

Rank	Serotype	Reported	Calculated Number**	Calculated Percent**	Rank Last Quarter
1	S. sonnei	2,181	2,206	78.8	1
2	S. flexneri 3a	105	167	6.0	3
3	S. flexneri 2a	88	165	5.9	2
4	S. flexneri 6	72	94	3.4	6
5	S. flexneri 4a	40	60	2.1	5
6	S. flexneri 1a	17	33	1.2	>6
Subtotal		2,503	2,725	97.4	
Total (all serotypes)		2,798	2,798		

**From Table III

Table III, calculated from data compiled in the first quarter 1972, shows the relative frequency of isolations of the various serotypes; the isolations in each of the unspecified categories are distributed in their subgroups in the same proportions as the completely specified isolations of that group. In the tables the resulting distribution is called the "calculated number," and from this is derived a "calculated percent" for each serotype. These provide approximate indices of the relative frequencies of the more common shigella serotypes in the United States. S. sonnei accounted for approximately three-fourths of all isolations in the first quarter. Table IV shows the distribution of shigella serotype reported from mental institutions.

3. Geographical and Seasonal Observations

All centersexcept Delaware, West Virginia, Montana, Nebraska, North Dakota, South Dakota, Wyoming, Mississippi, and Arizona reported more S. sonnei than S. flexneri (Figure 1). The seasonal distribution is shown in Figure 2. Figure 3 shows the number of reported isolations per million population by state for the first quarter, utilizing population estimates for July 1, 1971. Approximately 13.7

*No laboratory reports were received from California or the Virgin Islands

isolations per million population were reported for the first quarter of 1972. Table V shows the residence of those patients from whom shigella was isolated.

Figure 1 PERCENTAGE *S. flexneri* AND *S. sonnei* OF TOTAL SHIGELLA ISOLATIONS REPORTED FROM INDICATED REGIONS UNITED STATES, JANUARY - MARCH 1972

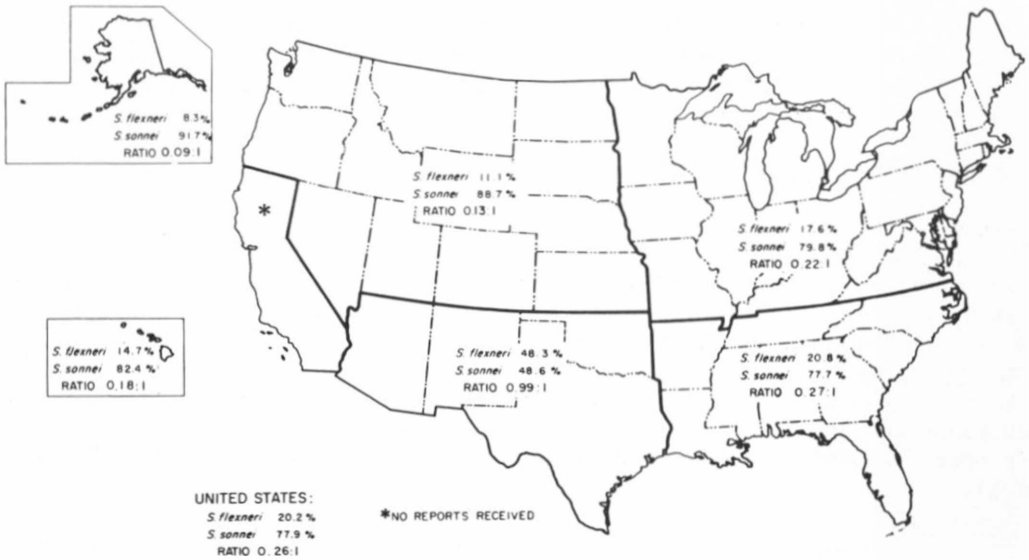


Figure 2 REPORTED ISOLATIONS OF SHIGELLA IN THE UNITED STATES

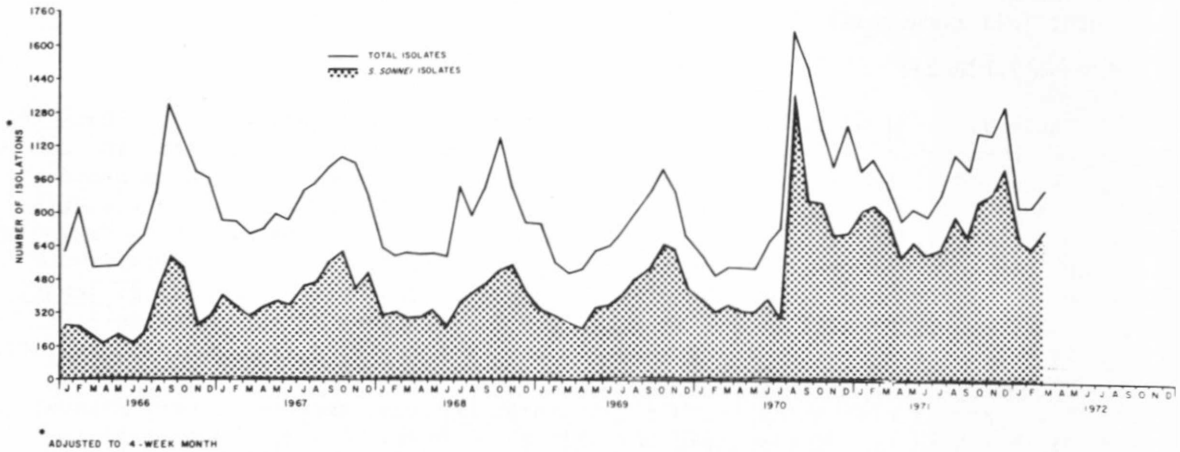
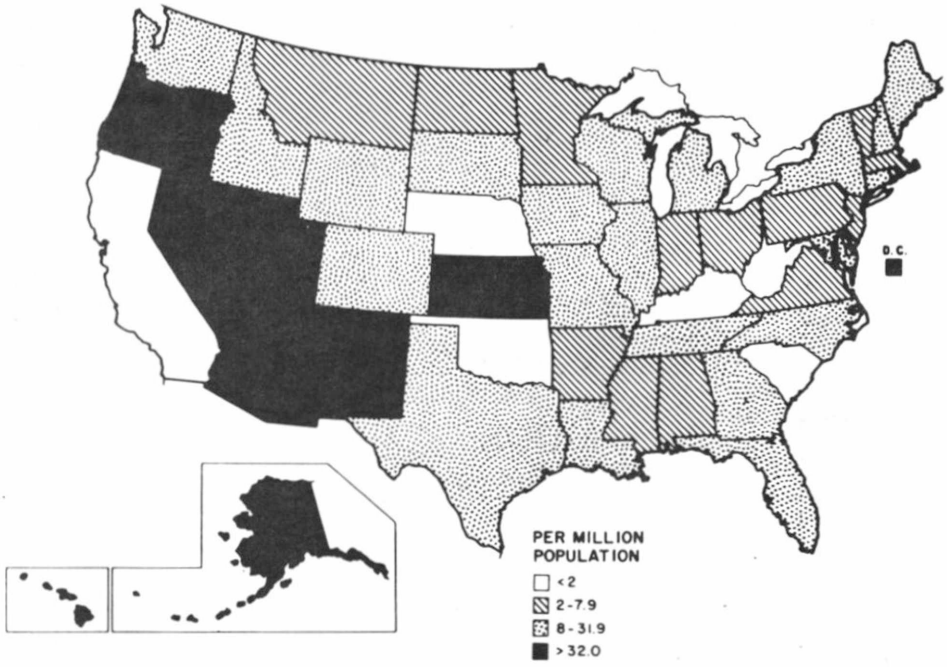


Figure 3 ATTACK RATES OF SHIGELLIS, BY STATE, JANUARY - MARCH 1972



B. Nonhuman

In the first quarter 1972, five nonhuman isolations of shigella were reported:

Table 2

Serotype	Number	Source	State
S. flexneri 1 (unspec)	1	lab stock culture	New Mexico
S. flexneri 3 (unspec)	1	lab stock culture	New Mexico
S. flexneri 4b	1	monkey	Illinois
S. flexneri 6	2	monkeys	Illinois

III. Reports from the States

A. Shigellosis, Portsmouth, New Hampshire. Reported by Mr. Arthur H. VanBuskirk, Immunization Branch Public Health Advisor located in New Hampshire; Mary M. Atchison, M.D., Director, Division of Public Health, New Hampshire State Department of Health and Welfare; Steven H. Lamm, M.D. and John N. Lewis, M.D., EIS Officers.

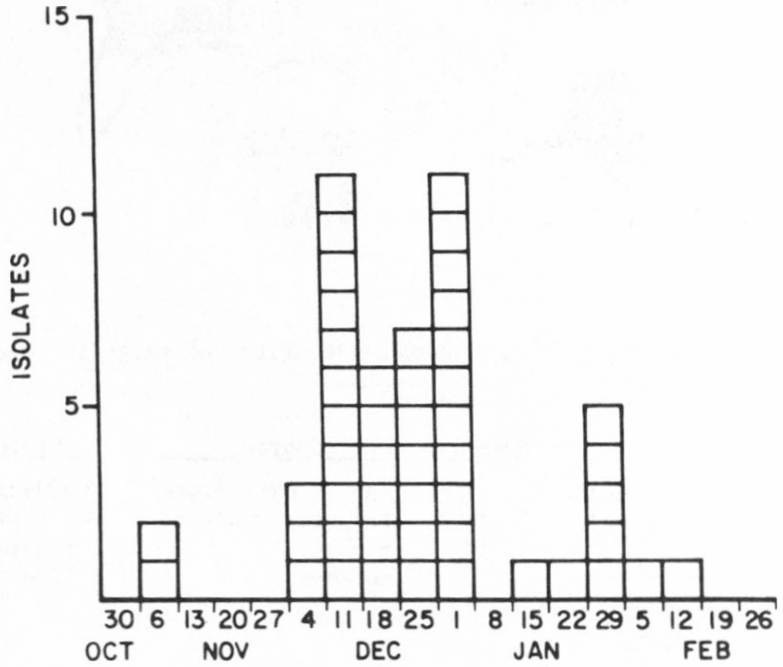
In October 1971-February 1972, 49 cases of shigellosis due to S. sonnei were reported in Portsmouth, New Hampshire; 38 of the cases occurred in December. Most of these cases were in children, employees, and family members at two day-care centers in Portsmouth. The method of spread appeared to be person-to-person contact from children in the day-care centers to family members and to members of a low-cost housing area. Efforts to detect and treat all those infected in the day-care center appeared to be effective in curtailing the outbreak.

Portsmouth is a seaport on the coast of New Hampshire with a population of 25,717. Two large military installations, an Air Force Base and a Naval Yard are adjacent to the town. Hospital coverage for the town is provided by a civilian general hospital and a Naval hospital, each of which treat ambulatory patients in their clinics or emergency rooms.

The two day-care centers involved in this outbreak care for pre-school children and are quite a distance from each other, one north and one south of downtown Portsmouth. The one to the north serves children who live in a low-cost housing project.

In December 1971, an increase in the number of shigella isolates was observed at the civilian hospital laboratory (Figure 4). These and all other isolates from patients in the Portsmouth outbreak were later identified at CDC as being S. sonnei. In all, 38 persons were found to have shigellosis during December. The disease was characterized by diarrhea, abdominal cramps, and fever. Few had vomiting, and only one reported blood in the stool. Many visited hospital emergency rooms, but only five were hospitalized. There were no deaths.

Figure 4 ISOLATES OF *S. SONNEI*, BY WEEK, PORTSMOUTH, N.H., NOVEMBER 1971–FEBRUARY 1972



Interviews of patients and their families revealed the following relationships of cases. Of the two persons first found to have shigellosis the first week of November 1971, one was a child and one the parent of two children at the day-care center north of town. In late November and early December, it was apparent that many children at the day-care center had diarrhea. In December, employees were cultured and five of them were found to have shigellosis. Many children and employees lived in the surrounding low-cost housing. Sixteen other patients with positive cultures also lived in this housing area. Three other patients were children at the day-care center south of town, and in 11 additional patients were family members of the three. Some relationships between patients at the day-care centers were as follows: one infected family had a child at the south day-care center but lived in the low-cost housing to the north where neighbor children attended the other center. Other contact between infected families in diverse areas of the town was demonstrated both in the elementary schools and through two birthday parties for small children after which some children became ill.

In two cases the type of contact exposure appeared to be limited, as is sometimes the case with shigellosis. One patient, a young adult female, applied for a job at the north day-care center. Her only contact with persons there was shaking hands with a manager, who later had a positive culture, and holding a small child for a few minutes. The patient had some mild diarrhea 2 days later. However, the stool stool culture which the applicant submitted as part of her job application was positive. A physician at the Naval Base developed shigellosis the day after treating a 5-year-old child, one of a family of six who had positive cultures.

Spread within families was clearly the cause of many cases. The 49 cases involved 23 families (more than 2 cases per family).

To detect the magnitude of gastroenteritis in Portsmouth at the time the 49 cases of shigellosis were reported, log books at the emergency clinic of the two hospitals were reviewed. Any diagnosis suggesting gastroenteritis was included, even "intestinal flu." Cases of plain "flu" were tabulated separately to make sure that they did not include gastroenteritis patients because of the common misuse of the word "flu." Figures 5 and 6 show the cases seen between September and February. Doctors recalled an outbreak of viral upper respiratory illness in January, explaining the peak in the "flu" curve. The sharp drop in gastroenteritis cases in January could be the result of some such cases being mislabeled as "flu" cases during the peak of a real influenza outbreak (Figure 5). Gastroenteritis visits at the Naval Hospital appeared to remain stable throughout this period. At the civilian hospital there was a sizable increase in such cases at the end of November and in December, and this corresponds in time to the increase in known shigellosis cases (Figure 4). Visits in such large numbers were no longer present in February.

Figure 5 EMERGENCY CLINIC VISITS AT THE CIVILIAN HOSPITAL, PORTSMOUTH, N.H., SEPTEMBER 1971 - FEBRUARY 1972

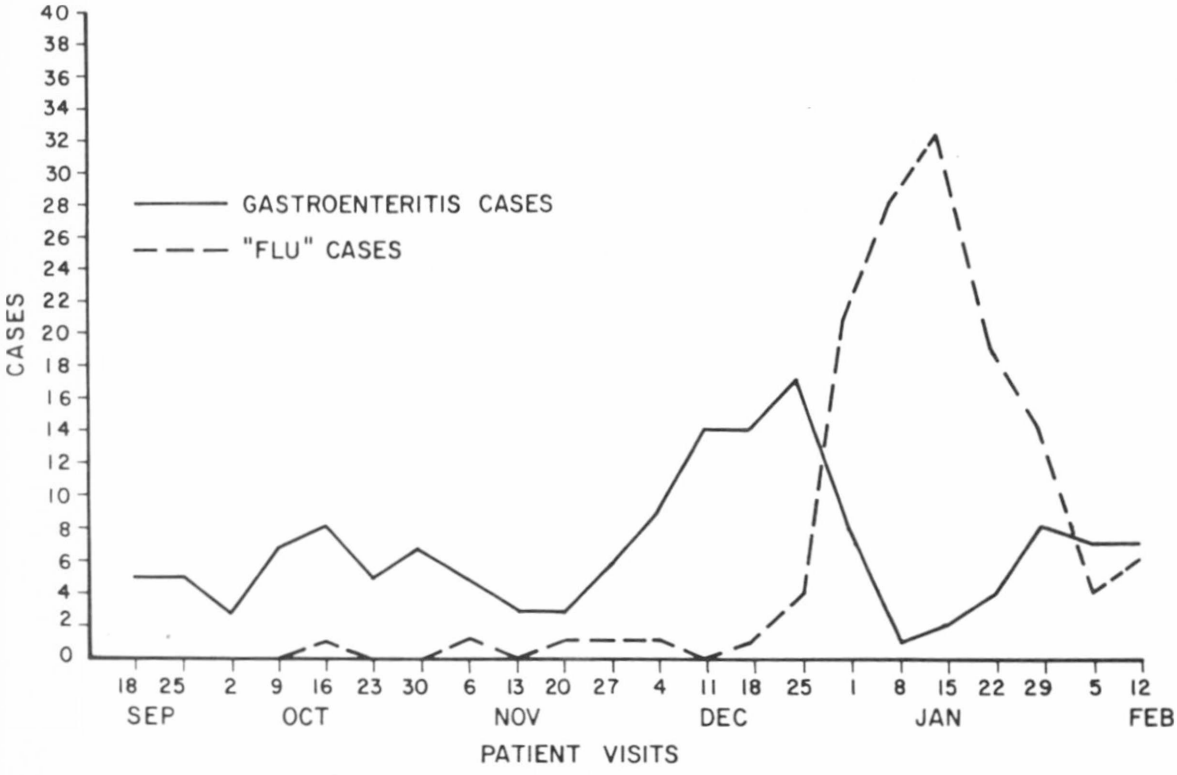
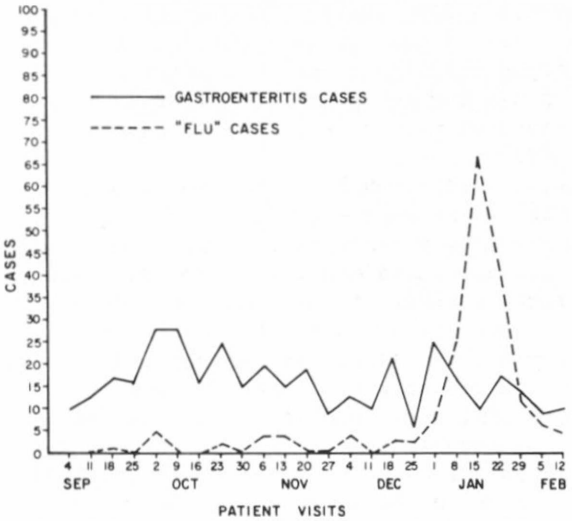


Figure 6 EMERGENCY CLINIC VISITS AT THE NAVAL HOSPITAL, PORTSMOUTH, N.H., SEPTEMBER 1971 – FEBRUARY 1972



It is possible that some small common-source clusters of cases were included in the larger outbreak, as could have been the case at either day-care center. But the high case rate in the low cost housing area and the high secondary attack rates in families were good evidence that most of the patients became infected through person-to-person contact rather than from any one common source.

After the initial outbreak observed in the day-care center, public health nurses continued surveillance for new cases in these centers. Initial detection of cases in children, culture screening of employees, and post-treatment follow-up appeared to be effective in preventing subsequent outbreaks in the day-care centers.

Editorial Comment: The spread of shigellosis in Portsmouth in this outbreak was typical of outbreaks of the disease caused by S. sonnei in all parts of the United States. Numbers of isolates of S. sonnei reported to the CDC have increased steadily in recent years. The highest rates of illness have been among urban rather than rural populations. Secondary spread is especially common within families, and small outbreaks in day-care centers for pre-school children are seen frequently. The sub-optimal toilet habits of many small children probably account for the ease of spread of shigellosis between these children and their parents. Employees at day-care centers are very much at risk, also, and they may become an important link in transmission. Frequent handwashing by employees as well as children is probably the most effective measure in limiting the spread of shigellosis in day-care centers. When outbreaks do occur, it is most important to detect infected persons quickly and to treat them. Treatment with appropriate antibiotics is a very effective way of stopping excretion of shigellae by either ill persons or asymptomatic carriers. Temporarily closing a center may be an effective interim measure while cases are being detected and treatment instituted.

IV. Current Trends and Developments

A. Acute Infectious Non-bacterial Gastroenteritis

Reported by R. J. Martin, D.V.M., Acting State Epidemiologist; Karl Langkop, Public Health Advisor; James Hundley, microbiologist; Merle King, Lynn Gamble, regional engineers; Muriel Matthews, R.N., regional advisory nurse, Illinois Department of Public Health, and an EIS Officer.

A recent outbreak in Illinois is an example of one form of the very common syndrome of "acute infectious non-bacterial gastroenteritis."

On May 19, 1972, a group of 25 students visited a state park in Illinois. Sixteen of them went to the riding stables, and by the following day, 14 had become ill with gastroenteritis.

Epidemiologic investigation revealed 90 cases of gastroenteritis in approximately 600 visitors to the park and riding stables between May 11 and 26 (Figure 7). Onset of illness occurred an average of 30.5 hours after patients visited the park, with a range of 8-72 hours. The symptoms for 85 persons are shown in Table 3. Four secondary cases were found in persons who had not been to the park, but had been exposed to some of the primary cases. Onset of illness for these patients occurred an average of 48 hours after onset of illness in their contacts.

Figure 7 GASTROENTERITIS IN PARK VISITORS, BY DAY OF ONSET, ILLINOIS, MAY 1972

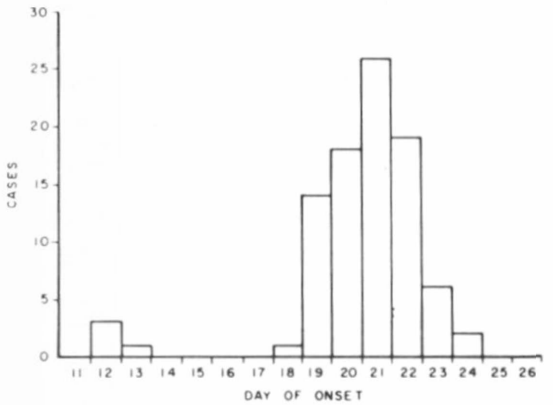


Table 3

Symptoms of 85 Persons with Gastroenteritis
Illinois Park -- May 1972

Symptom	Percent Affected
Abdominal cramps	82
Malaise	82
Vomiting	79
Nausea	68
Headache	62
Diarrhea	46
Fever	41
Chills	24
Myalgia	5
Mucoid diarrhea	5
Bloody diarrhea	1

The epidemic curve strongly suggested a common-source outbreak. There was no concession stand or other common-source food for those who visited the park between May 11 and 26. Further investigation revealed that the stable manager, his wife, and two children had moved into a trailer at the stables in late March, and all had experienced gastroenteritis shortly after their arrival. Four employees at the stables were also interviewed, and two of them had had similar illnesses. The 600 persons who had visited the park were asked whether they had consumed water from the drinking fountain or trailer at the stables; attack rates are shown in Table 4. Those interviewed included 243 girl scouts who camped in the park; 37 went to the stables to ride, but they brought and drank their own water. None of the Girl Scouts became ill. Many other persons did not drink water at the stables but drank water from other wells in the park, and none of them became ill.

Table 4

Attack Rates Among Patients with Gastroenteritis
Illinois -- May 1972

	Persons ill	Persons not ill	Percent ill
Drank water	96	15	86.5
Did not drink water	3	499	0.6

The riding stables with well and septic tank were built in the fall and winter of 1971-72. They were opened for business in March 1972, but only a few persons came to ride before May 11, when many groups of scouts, school children, and others came. Questioning about the well and septic tank construction revealed that the hole for the septic tank had been placed an appropriate distance from the well; however, persons digging the hole struck water 10 feet below the surface. The septic tank had been placed in the hole nonetheless, and it was noted that water from the well turned muddy while the septic tank was being built. The water in the well was not chlorinated.

Water samples obtained on May 24 contained 1,100 fecal coliforms per ml. Shigella, salmonella, and Escherichia coli were not found in cultures of the water or of stools from ill persons. Use of the well was discontinued on May 25.

Editorial Comment: The disease described in this outbreak is commonly referred to as "sewage poisoning." Laboratory investigations of this and previous outbreaks have failed to identify an etiologic agent. There has been speculation that a toxic product may be responsible,[1, 2] but the more prevalent view is that the syndrome is caused by an infectious agent.[3] The occurrence of secondary cases is this and other similar outbreaks[4] supports the latter view.

At a recent NIH conference this syndrome was discussed extensively.[5] Neil R. Blacklow, M.D., described acute infectious nonbacterial gastroenteritis as

> ".... a disease of uncertain cause that most likely encompasses several syndromes, including viral diarrhea,[6] epidemic diarrhea and vomiting,[8] winter vomiting disease,[7] epidemic collapse,[9] and epidemic nausea and vomiting.[10] The illness varies in its clinical presentation and duration. Its spread is characteristically epidemic, but the disease also persists in an endemic form that is responsible for sporadic cases or localized outbreaks, posing a major recurring problem. Indeed, acute infectious nonbacterial gastroenteritis is second only to acute respiratory illness as the most frequent form of illness in civilian families under epidemiological surveillance in the United States.[11] Yet the cause and pathogenesis of this disease are obscure.
>
> "The disease is self-limited and generally benign, occurring most frequently from September to March. The clinical features last 24 to 48 hours, consist of combinations of diarrhea, nausea, vomiting, low-grade fever, abdominal cramps, headache, and malaise. All or some of these features may be present with varying prominence in difference outbreaks. Specific treatment is not required, and sequels have not been reported."

In addition to the very common endemic occurrence of this syndrome,[11] it is less commonly observed in epidemic form. In the spring of 1971, approximately 20,000 cases of gastroenteritis were observed in Monongalia County, West Virginia, one-third of the entire population.[13] The distribution of cases in time, the high rates of secondary cases in families, and the presence of some upper respiratory along with gastrointestinal symptoms, suggested that the disease was spread by the respiratory route, especially between people who had close contact. In spite of the very large size of the epidemic, the community was not immobilized; it was thought by those affected that there was just "a virus going around." A large retrospective survey revealed the true extent of the outbreak.

Gastroenteritis has repeatedly been transmitted serially to human volunteers using bacteria-free filtrates, but it has never been possible to isolate an infectious agent in vitro. Some recent work by Dolin, et al,[14] using stool material from epidemics has yielded data very suggestive that a virus-like organism was present. This agent replicates in vitro in human fetal intestinal tissue. It was further possible to deduce that the agent was probably relatively acid and heat stable, was 20 to 36 mμ in size, and seemed to induce immunity in volunteers.

It must be emphasized that the diagnosis of acute infectious nonbacterial gastroenteritis has been up to this time one of exclusion. The new evidence pointing to the etiologic role of a viral agent opens new horizons to study and better understand the causes and factors responsible for transmission of such outbreaks. Some bacterial pathogens not commonly sought may account for some outbreaks of gastrointestinal illness. Enteropathogenic E. coli has been incriminated as a cause of waterborne diseases in adults.[15] Some strains known to be pathogenic for man are not included among the serologically recognized enteropathogenic E. coli.[16] To separate such organisms from normal E. coli flora invariably found in stool cultures one may use an assay for toxigenicity in the rabbit ileum.[17] Non-cholera vibrios and Yersinia enterocoliticus are other potentially pathogenic organisms which require special media for isolation, and are not usually sought in cultures in gastroenteritis cases.

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TABLE I
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
FIRST QUARTER, 1972

SEROTYPE	NORTHEAST																											NORTHWEST													NORTH TOTAL
	CONN	DEL	DC	ILL	IND	IOWA	KY	ME	MD	MASS	MICH	MINN	MO	NH	NJ	NY-A	NY-BI	NY-C	OHIO	PA	RI	VT	VA	W VA	WISC	NORTHEAST TOTAL	COLO	IDAHO	KANS	MONT	NEB	NEV	ND	ORE	SD	UTAH	WASH	WYO	NORTHWEST TOTAL	
A. *S. dysenteriae*																																								
Unspecified																1										1														0	1
1																										0														0	0
2																			1							1														0	1
3				1																						1														0	1
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
B. *S. flexneri*																																								
Unspecified		2	2		1	2		4	1	1	2		14		1	2	3	36		3						74	9			1				5	7	1		2	25	99
1 Unspecified									2		1															3											3		3	6
1A	2			3																						5				1									1	6
1B				1																						1													0	1
2 Unspecified									1	7			1												5	14										8			8	22
2A				19							1	2							2							24		2	2				1						5	29
2B	1			4											1				1							7													0	7
3 Unspecified									1	1	1				11											15			1										1	16
3A	4			41								1			5										1	51													0	51
3B				1																						1													0	1
3C												2														2													0	2
4 Unspecified													1													1													0	1
4A				7								3														10			15						2			17	27
4B																										0									2			2	2
5				2																						2													0	2
6				10			1				1															12									5			5	17
Total	7	2	2	88	1	2	1	4	5	9	6	8	16	0	18	2	3	36	3	3	0	0	0	0	6	222	9	2	18	2	0	0	1	5	7	18	3	2	67	289
C. *S. boydii*																																								
Unspecified																	1									1							1						1	2
1																										0													0	0
2	1																									1													0	1
4																										0													0	0
5																										0													0	0
6																										0													0	0
Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	1	3
D. *S. sonnei*	53	1	83	151	11	65	3	7	91	25	82	12	44	10	20	20	20	140	18	33	5	2	32		77	1,005	59	18	166	1		41		150	1	43	53	1	533	1,538
Unknown			23											3							2					28													0	28
TOTAL	61	3	108	240	12	67	4	11	96	34	88	20	60	13	38	23	24	176	22	36	7	2	32	0	83	1,260	68	20	184	3	0	41	2	155	8	61	56	3	601	1,861

TABLE I (CONTINUED)
SHIGELLA SEROTYPES ISOLATED FROM HUMANS
FIRST QUARTER, 1972

SOUTHEAST										SOUTHWEST						OTHER							PREVIOUS QUARTER		SEROTYPE
ALA	ARK	FLA	GA	LA	MISS	NC	SC	TENN	SOUTHEAST TOTAL	ARIZ	NM	OKLA	TEX	SOUTHWEST TOTAL	SOUTH TOTAL	ALASKA	CALIF	HAWAII	VIRGIN ISLANDS	OTHER TOTAL	TOTAL	PERCENT OF TOTAL	TOTAL	PERCENT OF TOTAL	
									0					0	0			1		1	2	0.1	7	0.2	A. *S. dysenteriae* Unspecified
									0				1	1	1					0	1	0.0	3	0.1	1
				1					1				2	2	3					0	4	0.1	9	0.2	2
									0				2	2	2					0	3	0.1	4	0.1	3
0	0	0	0	1	0	0	0	0	1	0	0	0	5	5	6	0	0	1	0	1	10	0.4	27	0.7	Total
																									B. *S. flexneri*
2					6				8		17			17	25	3				3	127	4.5	196	4.9	Unspecified
		2	1						3		1			1	4					0	10	0.4	18	0.5	1 Unspecified
								2	2	5			4	9	11					0	17	0.6	14	0.4	1A
			1						1				1	1	2					0	3	0.1	7	0.2	1B
1		4	14			4			23					0	23					0	45	1.6	87	2.2	2 Unspecified
	2			3				1	6	22		1	25	48	54			5		5	88	3.1	135	3.4	2A
				1				1	2	3			3	6	8	1				1	16	0.6	27	0.7	2B
		2	3						5		2		1	3	8					0	24	0.9	86	2.2	3 Unspecified
				1				5	6	27			21	48	54					0	105	3.8	95	2.4	3A
									0				2	2	2					0	3	0.1	7	0.2	3B
									0	1			1	2	2					0	4	0.1	10	0.3	3C
		2							2		3			3	5					0	6	0.2	8	0.2	4 Unspecified
	1			3					4	6			3	9	13					0	40	1.4	47	1.2	4A
									0					0	0					0	2	0.1	3	0.1	4B
									0				1	1	1					0	3	0.1	23	0.6	5
	1	14	4	1				3	23	2	12		11	25	48	7				7	72	2.6	70	1.8	6
3	4	24	23	9	6	4	0	12	85	66	35	1	73	175	260	11	0	5	0	16	565	20.2	834	20.9	Total
																									C. *S. boydii*
									0					0	0					0	2	0.1	2	0.1	Unspecified
									0				1	1	1					0	1	0.0	1	0.0	1
									0	1			2	3	3					0	4	0.1	8	0.2	2
									0	1				1	1					0	1	0.0	1	0.0	4
		1							1					0	1					0	1	0.0	0	0	5
	1								1					0	1					0	1	0.0	0	0	6
0	1	1	0	0	0	0	0	0	2	2	0	0	3	5	7	0	0	0	0	0	10	0.4	16	0.4	Total
23	5	72	90	29	5	48	2	44	318	33	52	3	88	176	494	121		28		149	2,181	77.9	3,077	77.0	D. *S. sonnei*
	1				1		1		3			1		1	4						32	1.1	40	1.0	Unknown
26	11	97	113	39	12	52	3	56	409	101	87	5	169	362	771	132	0	34	0	166	2,798		3,994		TOTAL

Table II

Age and Sex Distribution of Individuals Infected With Shigella in the United States, First Quarter, 1972

Age (Years)	Male	Female	Unknown	Total	Percent	Cumulative Percent	Number of Reported Isolations/ Million Population*
1	58	58	2	118	6.7	6.7	33.9
1-4	359	326	1	686	39.0	45.7	50.2
5-9	208	204	1	413	23.5	69.2	20.7
10-19	130	92		222	12.6	81.8	5.6
20-29	46	123		169	9.6	91.4	5.7
30-39	28	46		74	4.2	95.6	3.3
40-49	18	21		39	2.2	97.8	1.6
50-59	9	9		18	1.0	98.8	0.9
60-69	3	7		10	.6	99.4	0.6
70-79	1	5		6	.3	99.7	0.6
>79		2		2	.1	99.8	0.5
Subtotal	860	893	4	1,757			
Child (unspec)	1	2		3			
Adult (unspec)	3	5	1	9			
Unknown	533	485	11	1,029			
TOTAL	1,397	1,385	16	2,798			
Percent	50.2	49.8					

*Based on 1970 Census of Population, General Population Characteristics, United States Summary, Issued January 1972.

Table III

Relative Frequencies of Shigella Serotypes
Reported, First Quarter, 1972

	Serotype	Number Reported	Calculated Number*	Calculated Percent*	Rank
A.	S. dysenteriae				
	unspecified	2			
	1	1	1	.04	12
	2	4	5	.18	9
	3	3	4	.14	10
B.	S. flexneri				
	unspecified	127			
	1 unspecified	10			
	1a	17	33	1.18	6
	1b	3	6	.21	8
	2 unspecified	45			
	2a	88	165	5.90	3
	2b	16	30	1.07	7
	3 unspecified	24			
	3a	105	167	5.97	2
	3b	3	5	.18	9
	3c	4	6	.21	8
	4 unspecified	6			
	4a	40	60	2.14	5
	4b	2	3	.11	11
	5	3	4	.14	10
	6	72	94	3.36	4
C.	S. boydii				
	unspecified	2			
	1	1	1	.04	12
	2	4	5	.18	9
	4	1	1	.04	12
	5	1	1	.04	12
	6	1	1	.04	12
D.	S. sonnei	2,181	2,206	78.84	1
	unknown	32			
	TOTAL	2,798	2,798		

*Calculated number is derived by distributing the unspecified isolationsin each group to their subgroup in the same proportion as the distribution of the specified isolations of that group.

Table IV

Shigella Serotypes from Mental Institutions
Number of Isolations by State, First Quarter, 1972

State	flexneri (unspecified)	flexneri 1 (unspecified)	flexneri 2 (unspecified)	flexneri 2a	flexneri 2b	flexneri 3 (unspecified)	flexneri 3a	flexneri 3c	flexneri 4a	flexneri 5	flexneri 6	sonnei	Total
Alabama	0	0	0	0	0	0	0	0	0	0	0	4	4
Florida	0	1	0	0	0	0	0	0	0	0	13	1	15
Georgia	0	1	10	0	0	0	0	0	0	0	0	3	14
Illinois	0	0	0	12	3	0	28	0	0	1	6	3	53
Iowa	0	0	0	0	0	0	0	0	0	0	0	4	4
Kansas	0	0	0	0	0	0	0	0	12	0	0	101	113
Massachusetts	0	0	1	0	0	0	0	0	0	0	0	0	1
Michigan	0	0	0	0	0	1	0	0	0	0	0	0	1
Minnesota	0	0	0	1	0	0	0	1	0	0	0	0	2
Mississippi	1	0	0	0	0	0	0	0	0	0	0	0	1
New Jersey	1	0	0	0	1	11	5	0	0	0	0	1	19
New York	15	0	0	0	0	0	0	0	0	0	0	2	17
Oregon	0	0	0	0	0	0	0	0	0	0	0	7	7
Wisconsin	0	0	0	0	0	0	0	0	0	0	0	5	5
Total	17	2	11	13	4	12	33	1	12	1	19	131	256

Table V

Sources of Reported Isolations of Shigella
By Residence at Time of Onset
First Quarter, 1972

Source	Jan	Feb	Mar	Total	Percent of Subtotal	Percent of Total
Mental institutions	59	92	105	256	20	
Indian Reservations	7	13	5	25	2	
Other residencies	302	327	389	1019	78	
Subtotal	368	432	499	1300		46
Residencies unknown	459	397	597	1498		54
Total	827	829	1096	2798		

STATE EPIDEMIOLOGISTS AND STATE LABORATORY DIRECTORS

The State Epidemiologists are the key to all disease surveillance activities. They are responsible for collecting, interpreting, and transmitting data and epidemiologic information from their individual States; their contributions to this report are gratefully acknowledged. In addition, valuable contributions are made by State Laboratory Directors; we are indebted to them for their valuable support.

STATE	*STATE EPIDEMIOLOGIST*	*STATE LABORATORY DIRECTOR*
Alabama	Frederick S. Wolf, M.D.	Thomas S. Hosty, Ph.D.
Alaska	Donald K. Freedman, M.D.	Frank P. Pauls, Dr.P.H.
Arizona	Philip M. Hotchkiss, D.V.M.	H. Gilbert Crecelius, Ph.D.
Arkansas	G. Doty Murphy, III, M.D.	Robert T. Howell, Dr.P.H.
California	James Chin, M.D.	Edwin H. Lannette, M.D.
Colorado	Thomas M. Vernon, Jr., M.D.	C. D. McGuire, Ph.D.
Connecticut	James C. Hart, M.D.	William W. Ullmann, Ph.D.
Delaware	Floyd I. Hudson, M.D.	Irene V. Mazeika, M.D.
District of Columbia	William E. Long, M.D.	Alton Shields, Dr.P.H.
Florida	Ralph B. Hogan, M.D.	Nathan J. Schneider, Ph.D.
Georgia	John E. McCroan, Ph.D.	Earl E. Long, M.S.
Hawaii	Ned Wiebenga, M.D.	Ralph H. Tanimoto, M.S.
Idaho	John A. Mather, M.D.	Darrell W. Brock, Dr.P.H.
Illinois	Byron J. Francis, M.D.	Richard Morrissey, M.P.H.
Indiana	Charles L. Barrett, M.D.	Josephine Van Fleet, M.D.
Iowa	Arnold M. Reeve, M.D.	W. J. Hausler, Jr., Ph.D.
Kansas	Don E. Wilcox, M.D.	Nicholas D. Duffett, Ph.D.
Kentucky	Calixto Hernandez, M.D.	B. F. Brown, M.D.
Louisiana	Charles T. Caraway, D.V.M.	George H. Hauser, M.D.
Maine	Timothy R. Townsend, M.D. (Acting)	Charles Okey, Ph.D.
Maryland	John D. Stafford, M.D.	Robert L. Cavenaugh, M.D.
Massachusetts	Nicholas J. Fiumara, M.D.	Morton A. Madoff, M.D.
Michigan	Norman S. Hayner, M.D.	Kenneth R. Wilcox, Jr., M.D.
Minnesota	D. S. Fleming, M.D.	Henry Bauer, Ph.D.
Mississippi	Durward L. Blakey, M.D.	R. H. Andrews, M.S.
Missouri	H. Denny Donnell, Jr., M.D.	Elmer Spurrier, Dr.P.H.
Montana	John S. Anderson, M.D. (Acting)	David B. Lackman, Ph.D.
Nebraska	Russell W. Currier, D.V.M.	Henry McConnell, Dr.P.H.
Nevada	William M. Edwards, M.D.	Paul Fugazzotto, Ph.D.
New Hampshire	Vladas Kaupas, M.D.	Robert A. Miliner, Dr.P.H.
New Jersey	Ronald Altman, M.D.	Martin Goldfield, M.D.
New Mexico	Nancy C. McCaig, M.D.	Daniel E. Johnson, Ph.D.
New York City	Pascal J. Imperato, M.D.	Paul S. May, Ph.D.
New York State	Alan R. Hinman, M.D.	Donald J. Dean, D.V.M.
North Carolina	Martin P. Hines, D.V.M.	Lynn G. Maddry, Ph.D.
North Dakota	Kenneth Mosser	C. Patton Steele, B.S.
Ohio	John H. Ackerman, M.D.	Charles C. Croft, Sc.D.
Oklahoma	Stanley Ferguson, Ph.D.	William R. Schmieding, M.D.
Oregon	John A. Googins, M.D.	Gatlin R. Brandon, M.P.H.
Pennsylvania	W. D. Schrack, Jr., M.D.	James E. Prier, Ph.D.
Puerto Rico	Luis Mainardi, M.D.	Eduardo Angel, M.D.
Rhode Island	James R. Allen, M.D. (Acting)	Malcolm C. Hinchliffe, M.S.
South Carolina	Donald H. Robinson, M.D.	Arthur F. DiSalvo, M.D.
South Dakota	Robert H. Hayes, M.D.	B. E. Diamond, M.S.
Tennessee	Robert H. Hutcheson, Jr., M.D.	J. Howard Barrick, Dr.P.H.
Texas	M. S. Dickerson, M.D.	J. V. Irons, Sc.D.
Utah	Taira Fukushima, M.D.	Russell S. Fraser, M.S.
Vermont	Geoffrey Smith, M.D.	Dymitry Pomar, D.V.M.
Virginia	Karl A. Western, M.D.	Frank W. Lambert, Ph.D.
Washington	John Beare, M.D. (Acting)	Jack Allard, Ph.D.
West Virginia	N. H. Dyer, M.D.	J. Roy Monroe, Ph.D.
Wisconsin	H. Grant Skinner, M.D.	S. L. Inhorn, M.D.
Wyoming	Herman S. Parish, M.D.	Donald T. Lee, Dr.P.H.

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