

LOUISIANA MONTHLY MORBIDITY

DISEASES REPORTED DURING MONTH OF OCTOBER, 1972

BY PARISH OF RESIDENCE

EPIDEMIOLOGIC NOTES AND REPORTS *VIBRIO PARAHAEMOLYTICUS* - Louisiana

Between Aug. 26 and 29, 1972, an estimated 600 of 1,200 persons who attended a "shrimp boil" in Covington, Louisiana, became ill with acute gastroenteritis. The illness, which lasted from a few hours to more than a week, was characterized primarily by watery diarrhea and abdominal cramps, with vomiting, headache, fever, and chills reported in about half the cases. The median incubation period was 23 hours (range 5-92 hours) (Figure 1). One person consulted a physician, and 44 took non-prescription medications.

Stool specimens from 10 persons still symptomatic 5 to 6 days after onset of illness were positive for *Vibrio parahaemolyticus*.

Epidemiologic investigation focused on the 60 families

of the organization sponsoring the party. Fifty-six of the 60 families were contacted, and 44 had at least one family member who attended the party. Of the 173 persons in these 44 families, 141 attended, and 32 did not. Seventy-two of those who attended became ill, for an attack rate of 50%; none of those who did not attend became ill.

The menu at the party was shrimp, crackers, ketchup, hot sauce, beer, and soda drink. The shrimp had been boiled 5 to 6 hours prior to serving and stored in boxes at ambient temperature. The other items were all in commercially-sealed packages or bottles. Food histories obtained from 141 persons revealed no significant difference in attack rates for those who did or did not eat a certain food item. However, it was

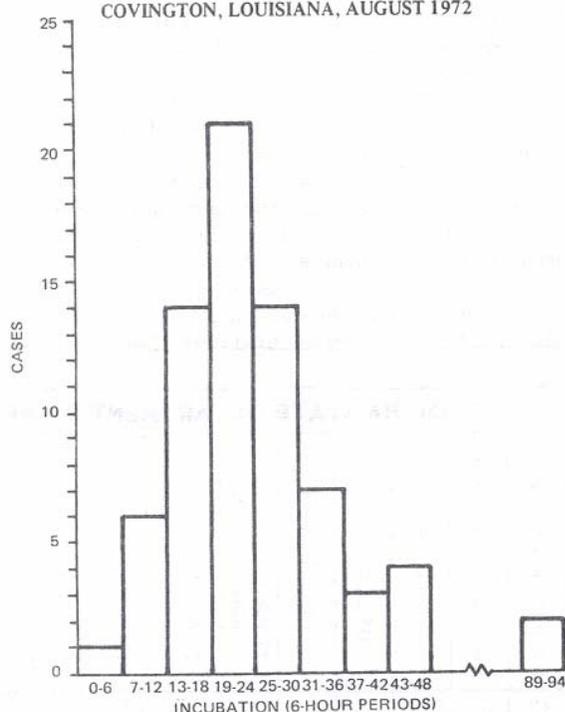
DIVISION OF PUBLIC HEALTH STATISTICS -

- LOUISIANA STATE DEPARTMENT OF HEALTH

RELEASED NOVEMBER 6, 1972	ASEPTIC MENINGITIS	DIPHThERIA	ENCEPHALITIS	ENCEPHALITIS, POST INFECTIONOUS	INFECTIOUS AND SERUM HEPATITIS	TUBERCULOSIS, PULMONARY	MENINGOCOCCAL INFECTIONS	PERTUSSIS	POLIOMYELITIS, PARALYTIC	RABIES IN ANIMALS	RHEUMATIC FEVER	RUBELLA *	SHIGELLOSIS	TYPHOID FEVER	OTHER SALMONELLOSIS	TETANUS	MEASLES	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY
TOTAL TO DATE 19 71	167	18	13	9	684	627	62	63	0	33	6	288	33	6	134	3	1697	11789	649
TOTAL TO DATE 19 72	82	5	13	9	629	511	42	41	0	41	11	96	156	7	183	5	99	14560	743
TOTAL THIS MONTH	11	1	1	0	68	99	3	4	0	4	0	4	33	1	57	0	12	1511	66
ACADIA						1												3	
ALLEN						1									1				
ASCENSION					1	1													
ASSUMPTION																		1	
AVOUELLES					1		1												1
BEAUREGARD						1													
BIENVILLE																			1
BOSSIER					1	2												44	3
CADDO					2	6				2								155	5
CALCASIEU					3	7							2		2			37	
CALDWELL																		1	
CAMERON																			
CATAHOULA						1												1	
CLAIBORNE						1												3	2
CONCORDIA																			
DESOTO																		30	
EAST BATON ROUGE	2				5	7	1								6		3	42	6
EAST CARROLL					4													15	
EAST FELICIANA						1													1
EVANGELINE					2	3												3	1
FRANKLIN						1												2	2
GRANT																		3	
IBERIA						3											1	8	2
IBERVILLE					1	2												20	

*Includes Rubella, Congenital Syndrome. Louisiana Department of Health

VIBRIO PARAHAEMOLYTICUS – Continued
 Figure 1
 72 CASES OF ACUTE GASTROENTERITIS,
 BY INCUBATION PERIOD
 COVINGTON, LOUISIANA, AUGUST 1972



noted that all persons who became ill ate shrimp, and that the only two persons who did not eat shrimp remained well. It was also noted that among a "high risk" group, defined as those families who ate simultaneously from the same batch of shrimp and experienced one or more illness, persons eating fewer than 10 shrimp were significantly less likely to be ill than those eating more than 10 ($p < .025$) (Table 1).

Specimens from two batches of shrimp which had been frozen after the party were tested and yielded *V. parahaemolyticus*.

The plant where the shrimp were boiled was subsequently investigated. All equipment was in good working order, and cultures from the boiling vats, sorting trays, packing boxes, and from samples of freshly boiled shrimp were negative for pathogens. Samples of uncooked shrimp delivered fresh to the plant from Louisiana coastal waters were also tested and were positive for *V. parahaemolyticus*. Results

Table 1
 Incidence of Acute Gastroenteritis, by Amount of Shrimp Consumed
 by "High Risk" Group – Covington, Louisiana, August 1972

Estimated Amount of Shrimp	Ill	Not Ill	Attack Rate (Percent)
< 10	3	8	27.3
10-20	18	9	66.7
> 20	43	16	73.0

of serotyping of isolates from stool and shrimp specimens are pending.

(Reported by Roy L. Gregory, M.D., Mandeville, Louisiana, Oscar Felsenfeld, M.D., Delta Regional Primate Research Center, Tulane University; Herbert E. Cannon, M.D., Director, Hugh W. Calmes, Sanitarian, St. Tammany Parish Health Unit; Charles T. Caraway, D.V.M., Chief, Epidemiology, George H. Hauser, M.D., Director, Bureau of Laboratories, and Joseph A. D'Alfonso, Food and Drug Division, Louisiana State Department of Health; Morris Fishbein, Ph.D., Food Microbiology Branch, FDA; Napoleon Gunera, M.D., PAHO Fellow, and two EIS Officers.)

Editorial Note

The clinical, epidemiologic, and laboratory features of this outbreak are compatible with *V. parahaemolyticus* gastroenteritis. This is the largest such outbreak in the United States to date. Furthermore, it is the first such outbreak reported from the Gulf Coast region and the first time that shrimp have been implicated as the vehicle for *V. parahaemolyticus* gastroenteritis in the United States.

V. parahaemolyticus has been previously isolated from Gulf Coast shrimp (1) and shown to be able to survive in shrimp at temperatures ranging from -18°C . to 80°C . (2).

In the present episode, it may be speculated that the shrimp were contaminated with small numbers of *V. parahaemolyticus* at the time of delivery to the plant. Some of the bacteria may have survived the cooking process or the cooked shrimp may have been recontaminated from the plant environment while being packed. During the several hours that the shrimp was held at ambient temperature prior to eating, *V. parahaemolyticus*, with a generation time as short as 20 minutes, would have had ample time to proliferate to levels sufficient to cause illness.

References

1. Vanderzant C, Nickelson R, Parker J: Isolation of *Vibrio parahaemolyticus* from Gulf Coast shrimp. *Journal of Milk and Food Technology* 33:161-162, 1970
2. Vanderzant C, Nickelson R: Survival of *Vibrio parahaemolyticus* in shrimp tissue under various environmental conditions. *Appl Microbiol* 23:34-37, 1972

From: "Morbidity and Mortality Weekly Report" published by the Center for Disease Control, Public Health Service, Atlanta, Georgia, for week ending October 7, 1972.

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JACKSON															1				1
JEFFERSON		1			2								1		24			101	4
JEFFERSON DAVIS						3												9	
LAFAYETTE	2				6	4	1											14	
LAFourCHE					1	2												19	1
LASALLE																		1	
LINCOLN					3	1			1									37	
LIVINGSTON					1	1											1		
MADISON																		4	
MOREHOUSE																		11	1
NATCHITOCHES					1	2											2	8	1
ORLEANS	6				17	27		1				26		16			3	506	26
OUACHITA					1	3		2										112	3
PLAQUEMINES															2			2	
POINTE COUPEE																			
RAPIDES					2	5						2					1	38	2
RED RIVER																			1
RICHLAND						2												12	
SABINE																		1	
ST. BERNARD					2							1			2			6	
ST. CHARLES															1			15	
ST. HELENA						1													
ST. JAMES																		2	1
ST. JOHN													3		1			2	
ST. LANDRY						3												18	
ST. MARTIN					1	2												5	
ST. MARY																		10	
ST. TAMMANY																		14	
TANGIPAHOA						2							1	1	1			20	
TENSAS																		1	
TERREBONNE	1					1		1										14	
UNION					5													3	
VERMILION						1						1						5	
VERNON					2	1												124	
WASHINGTON					2													8	
WEBSTER																		6	
WEST BATON ROUGE																	1	5	
WEST CARROLL					2													1	
WEST FELICIANA																		7	
WINN			1							1								2	1
OUT OF STATE																			

From January 1 through October 31, the following cases were also reported: 1 - Actinomycosis; 2 - Brucellosis; 6 - Malaria (contracted outside the U. S. A.)