

# Morbidity and Mortality



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

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**EPIDEMIOLOGIC NOTES AND REPORTS**  
**VIBRIO PARAHAEMOLYTICUS GASTROENTERITIS**  
**ON CRUISE SHIPS**

In the first 2 months of 1975, large outbreaks of *Vibrio parahaemolyticus* gastroenteritis occurred on 2 cruise ships sailing between Florida and the Caribbean Sea.

**Outbreak 1**

On the December 21, 1974-January 5, 1975 cruise of the S/S *Federico C*, 252 (36%) of the 703 passengers and none of the 321 crew members experienced a diarrheal illness. Additional symptoms of passengers with diarrhea are given in Table 1. The median duration of illness was 2 days; none of the 69 passengers who saw the ship's medical personnel required hospitalization. The outbreak peaked on January 2; and the shape of the epidemic curve (Figure 1) was compatible with a common-source outbreak.

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A Kanagawa-positive strain of *Vibrio parahaemolyticus*, serotype O<sub>g</sub>K<sub>22</sub>, was isolated from rectal swabs obtained on January 5 from 17 (49%) of 35 ill passengers and 2 of 3 non-ill passengers. Rectal swabs from 15 crew members (food and beverage handlers) and cultures of potable water, ice, and

**TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES**  
(Cumulative totals include revised and delayed reports through previous weeks)

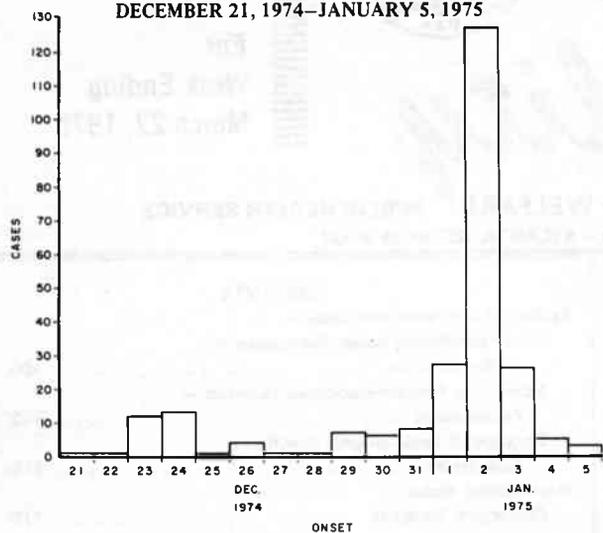
DISEASE	12th WEEK ENDING		MEDIAN 1970-1974	CUMULATIVE, FIRST 12 WEEKS		
	March 22, 1975	March 23, 1974		1975	1974	MEDIAN 1970-1974
Aseptic meningitis	37	29	27	418	394	395
Brucellosis	2	4	2	31	23	22
Chickenpox	5,130	3,956	---	45,612	43,560	---
Diphtheria	16	8	1	111	44	47
Encephalitis	18	26	16	151	200	202
	8	3	6	47	47	54
Hepatitis, Viral	192	219	177	2,415	2,033	1,964
	680	879	1,179	8,357	10,293	12,902
	123	150	14	1,745	1,932	367
	4	2	14	64	36	9,240
Malaria	885	952	1,126	5,493	6,598	429
Measles (rubeola)	30	37	37	415	378	429
Meningococcal infections, total	29	37	37	403	372	411
	1	---	2	12	6	18
Mumps	1,812	1,846	2,229	17,739	20,322	25,398
Pertussis	29	25	---	276	313	---
Rubella (German measles)	500	393	1,558	3,629	3,170	7,793
Tetanus	1	3	3	14	13	17
Tuberculosis	670	701	---	6,770	6,412	---
Tularemia	---	2	2	9	24	23
Typhoid fever	8	5	5	57	81	59
Typhus, tick-borne (Rky. Mt. spotted fever)	---	---	---	11	15	6
Veneral Diseases:						
Gonorrhea	17,566	16,057	---	212,199	192,689	---
Syphilis, primary and secondary	407	520	---	6,754	6,240	---
Rabies in animals	502	466	---	6,018	5,588	---
	9	8	---	80	104	---
	40	51	88	430	611	776

**TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY**

	Cum.		Cum.
Anthrax:	---	Poliomyelitis, total:	1
Botulism:	7	Paralytic:	1
Congenital rubella syndrome:	6	Psittacosis: Tex. 1:	9
Leprosy: Colo. 1, Tex. 1:	41	Rabies in man:	1
Leptospirosis:	10	Trichinosis: N.Y. Ups. 1:	23
Plague:	1	Typhus, murine:	4

GASTROENTERITIS - Continued

Figure 1  
DIARRHEAL ILLNESS IN PASSENGERS ABOARD THE  
S.S. FEDERICO C, BY DATE OF ONSET,  
DECEMBER 21, 1974-JANUARY 5, 1975



environmental surfaces in the galley were negative for *V. parahaemolyticus*.

Telephone interviews with a random sample of passengers implicated a seafood cocktail served to passengers at dinner on January 1 as the vehicle of transmission ( $p < 0.01$ ). The attack rate was significantly higher for passengers who ate at the second of 2 dinner sittings. The seafood cocktail contained frozen shrimp, canned crab meat, and frozen grouper. After boiling, the shrimp were cleaned on a table in the galley between 8 and 10 a.m. on January 1 and subsequently refrigerated. Beginning at approximately 5 p.m., the shrimp were mixed with the other ingredients and placed in serving cups. The cocktail was then served to passengers at the first meal sitting at 6:45 p.m. and the second sitting at 8:30 p.m.

Cultures of frozen shrimp, grouper, and canned crab meat obtained from the ship on January 17 were negative for *V. parahaemolyticus*; a water sample from an outlet of the ship's circulating saltwater system in the galley near the fish-preparation area was positive for a different strain of *V. parahaemolyticus* (serotype O<sub>5</sub>K<sub>30</sub>, Kanagawa-negative). Water from this system was used to wash the galley decks after each meal and was observed to splash on food-preparation surfaces, including the area where the shrimp were cleaned. Control measures consisted of a review of appropriate food handling practices with ship personnel and removal of the saltwater outlet from the ship's galley.

(Reported by Epidemiologic Investigations Laboratory Branch and Enteric Diseases Branch, Bacterial Diseases Division and Quarantine Division, Bureau of Epidemiology, CDC; and 2 EIS Officers.)

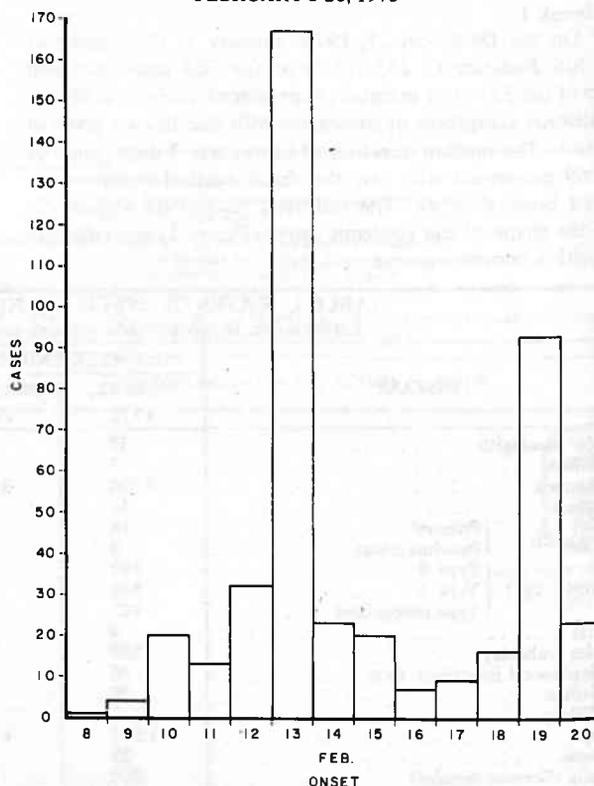
Outbreak 2

On the February 8-20 cruise of the S/S *Leonardo da Vinci*, 445 (61%) of 734 passengers and 27 (5%) of 586 crew members experienced a diarrheal illness. Most passengers became ill on the 6th and 12th days of the cruise; their other symptoms are given in Table 1. *V. parahaemolyticus*, serotype O<sub>2</sub>K<sub>3</sub>, Kanagawa-positive, was isolated from rectal swabs of 16 (48%) of 33 ill passengers and 9 (60%) of 15 ill crew members.

Table 1  
Symptoms Associated With Diarrhea in Passengers on  
2 Cruise Ships, January-February 1975

Ship	S/S Federico C		S/S Leonardo da Vinci			
	2 Jan 1975		13 Feb 1975		19 Feb 1975	
Date of Onset						
Symptoms	No.	%	No.	%	No.	%
Abdominal cramps	108	85	160	96	80	86
Nausea	59	46	104	63	47	51
Vomiting	42	33	97	59	35	38
Headache	42	33	77	46	30	32
Chills	57	45	118	71	34	37
Fever	36	28	57	34	16	17
Bloody diarrhea	4	3	8	5	1	1
Total Ill	127		166		93	

Figure 2  
DIARRHEAL ILLNESS IN PASSENGERS ABOARD THE  
S.S. LEONARDO DA VINCI, BY DATE OF ONSET,  
FEBRUARY 8-20, 1975



Epidemiologic investigation incriminated shrimp cocktail served at dinner on the 5th day ( $p < 0.01$ ) and lobster served at dinner on the 11th day ( $p < 0.01$ ); however, the original incriminated foods had been discarded. Cultures of shrimp and lobsters from the seafood freezer and environmental swabs from the food preparation and holding areas were negative for *V. parahaemolyticus*.

The incriminated lobster was pre-cooked and frozen; it thawed at room temperature for approximately 8 hours. While thawing, it was washed with seawater, which is available throughout the ship in the fire system. The shrimp were reportedly washed in salted, potable water after cooking and cleaning, so their source of contamination remains unclear.

(Continued on page 115)

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**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING MARCH 22, 1975 AND MARCH 23, 1974 (12th WEEK)**

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1975	1974	1975	1975	1975	1975		
UNITED STATES . . .	37	2	5,130	16	111	18	26	8	192	680	123	4	64
NEW ENGLAND . . .	2	-	545	-	-	1	1	-	6	21	13	-	3
Maine *	-	-	-	-	-	-	-	-	-	-	-	-	-
New Hampshire	1	-	14	-	-	-	-	-	-	2	-	-	-
Vermont	-	-	6	-	-	-	-	-	-	-	-	-	-
Massachusetts	1	-	155	-	-	1	-	-	3	5	13	-	2
Rhode Island	-	-	146	-	-	-	1	-	-	5	-	-	-
Connecticut	-	-	224	-	-	-	-	-	3	9	-	-	1
MIDDLE ATLANTIC . . .	5	-	216	-	1	2	1	-	21	64	14	-	9
Upstate New York	2	-	107	-	-	-	-	-	2	22	3	-	3
New York City	1	-	101	-	-	-	-	-	1	14	-	-	3
New Jersey *	2	-	NN	-	-	1	-	-	11	18	9	-	3
Pennsylvania *	-	-	8	-	1	1	1	-	7	10	2	-	-
EAST NORTH CENTRAL . . .	3	-	1,879	-	1	2	1	-	33	92	3	-	1
Ohio	-	-	215	-	-	-	-	-	13	30	-	-	-
Indiana	-	-	123	-	-	-	-	-	-	6	-	-	-
Illinois	-	-	-	-	-	1	-	-	1	5	-	-	1
Michigan	3	-	921	-	1	1	1	-	13	43	3	-	-
Wisconsin	-	-	620	-	-	-	-	-	6	8	-	-	-
WEST NORTH CENTRAL . . .	1	-	718	-	-	-	3	-	9	27	5	-	3
Minnesota	1	-	19	-	-	-	-	-	6	12	-	-	1
Iowa	-	-	367	-	-	-	-	-	1	4	-	-	-
Missouri	-	-	7	-	-	-	3	-	1	3	5	-	2
North Dakota	-	-	5	-	-	-	-	-	-	-	-	-	-
South Dakota	-	-	30	-	-	-	-	-	-	-	-	-	-
Nebraska	-	-	10	-	-	-	-	-	-	2	-	-	-
Kansas	-	-	280	-	-	-	-	-	1	6	-	-	-
SOUTH ATLANTIC . . .	5	-	354	-	-	1	6	-	29	117	37	1	8
Delaware	-	-	8	-	-	-	-	-	-	-	-	-	-
Maryland	-	-	2	-	-	-	-	-	11	6	6	-	1
District of Columbia	-	-	3	-	-	-	-	-	1	2	-	-	-
Virginia	1	-	19	-	-	1	1	-	4	10	8	-	4
West Virginia	-	-	289	-	-	-	-	-	-	3	-	-	-
North Carolina	2	-	NN	-	-	-	-	-	8	13	3	1	1
South Carolina	-	-	33	-	-	-	1	-	-	8	11	-	-
Georgia	-	-	-	-	-	-	1	-	-	34	-	-	-
Florida	2	-	-	-	-	-	3	-	5	41	9	-	2
EAST SOUTH CENTRAL . . .	2	1	144	-	-	1	-	-	18	70	1	1	6
Kentucky	-	-	90	-	-	-	-	-	3	22	-	-	2
Tennessee	1	1	NN	-	-	1	-	-	7	23	1	-	-
Alabama	1	-	42	-	-	-	-	-	6	7	-	1	3
Mississippi	-	-	12	-	-	-	-	-	2	18	-	-	1
WEST SOUTH CENTRAL . . .	7	-	933	-	1	7	2	6	14	119	8	1	6
Arkansas	-	-	-	-	-	-	-	-	-	11	-	-	1
Louisiana	1	-	NN	-	-	1	-	1	4	7	1	-	-
Oklahoma	-	-	60	-	-	6	1	-	7	22	4	-	1
Texas	6	-	873	-	1	1	1	5	3	79	3	1	4
MOUNTAIN . . .	-	1	83	-	12	1	10	-	6	31	12	-	10
Montana	-	-	33	-	-	-	9	-	-	2	-	-	-
Idaho	-	-	-	-	-	-	-	-	1	-	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	1	-	-
Colorado	-	-	44	-	-	-	-	-	-	1	7	-	8
New Mexico	-	1	3	-	1	-	-	-	1	9	-	-	-
Arizona	-	-	-	-	11	-	-	-	3	12	-	-	2
Utah	-	-	3	-	-	1	1	-	-	7	4	-	-
Nevada *	-	-	-	-	-	-	-	-	1	-	-	-	-
PACIFIC . . .	12	-	258	16	96	3	2	2	56	139	30	1	18
Washington	-	-	191	16	93	-	1	-	7	16	19	-	1
Oregon	-	-	2	-	-	-	-	-	3	8	4	-	-
California*	11	-	-	-	2	2	1	2	45	96	7	1	16
Alaska	1	-	10	-	1	1	-	-	-	14	-	-	-
Hawaii	-	-	55	-	-	-	-	-	1	5	-	-	1
Guam *	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	55	-	-	-	-	-	-	6	-	-	1
Virgin Islands	-	-	3	-	-	-	-	-	-	-	-	-	-

\*Delayed reports: Aseptic Meningitis: (1974) N.J. 2  
 Chickenpox: Me. 23, Nev. 9, Calif. 14, Guam 3  
 Hepatitis B: Guam 1; (1974) Pa. 2  
 Hepatitis A: Me. 6; (1974) Pa. 26  
 Hepatitis unspecified: Guam 1; (1974) Pa. 7

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING MARCH 22, 1975 AND MARCH 23, 1974 (12th WEEK) - Continued

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1975	Cumulative		1975	Cumulative		1975	Cum. 1975	1975	1975	Cum. 1975	Cum. 1975
		1975	1974		1975	1974						
UNITED STATES	885	5,493	6,598	30	415	378	1,812	17,739	29	500	3,629	14
NEW ENGLAND	10	56	376	2	25	23	47	746	-	82	602	-
Maine *	-	4	22	-	3	-	-	33	-	-	15	-
New Hampshire	-	15	192	-	1	6	1	55	-	5	222	-
Vermont	-	-	1	-	-	-	1	2	-	1	14	-
Massachusetts	6	20	90	-	6	7	6	101	-	63	290	-
Rhode Island *	-	2	45	-	2	4	24	321	-	4	10	-
Connecticut	4	15	26	2	13	6	15	234	-	9	51	-
MIDDLE ATLANTIC	37	297	2,486	-	33	50	35	883	4	67	311	1
Upstate New York	25	87	33	-	11	21	15	395	3	7	33	-
New York City	3	39	119	-	6	12	11	166	1	1	48	1
New Jersey	8	123	2,052	-	4	14	7	146	-	24	134	-
Pennsylvania	1	48	282	-	12	3	2	176	-	35	96	-
EAST NORTH CENTRAL	210	1,998	2,605	9	61	40	805	7,863	5	181	1,036	-
Ohio	2	33	1,144	3	11	12	72	737	-	5	64	-
Indiana	25	139	78	2	3	2	102	875	-	18	145	-
Illinois	22	401	443	-	10	7	122	718	-	11	100	-
Michigan	133	1,022	799	4	31	13	343	3,809	2	121	532	-
Wisconsin	28	403	141	-	6	6	166	1,724	3	26	195	-
WEST NORTH CENTRAL	256	1,513	169	-	28	24	130	1,145	2	17	268	1
Minnesota	-	-	76	-	5	10	13	23	-	2	5	-
Iowa	65	196	7	-	4	5	61	398	1	6	8	-
Missouri *	15	67	24	-	15	5	2	122	1	-	86	1
North Dakota	16	245	18	-	-	1	34	247	-	1	42	-
South Dakota	-	204	1	-	-	-	3	4	-	-	2	-
Nebraska	6	186	1	-	1	-	-	5	-	-	5	-
Kansas	154	615	42	-	3	3	17	346	-	8	120	-
SOUTH ATLANTIC	7	63	231	5	70	77	105	1,101	2	13	227	5
Delaware	-	-	3	-	1	3	-	5	-	-	6	-
Maryland	-	-	19	1	5	12	-	29	-	-	-	-
District of Columbia	-	-	-	1	4	-	-	23	-	-	-	-
Virginia *	1	8	11	-	8	11	12	228	1	1	20	-
West Virginia	4	40	60	-	2	2	65	439	-	7	42	-
North Carolina	-	1	2	3	15	15	5	31	1	2	3	2
South Carolina	1	1	13	-	8	9	1	19	-	3	128	2
Georgia	-	-	1	-	7	4	-	-	-	-	-	-
Florida	1	13	122	-	20	21	22	327	-	-	28	1
EAST SOUTH CENTRAL	22	64	47	5	58	35	123	1,582	3	46	236	1
Kentucky	19	51	36	3	22	16	26	765	-	3	50	1
Tennessee	2	9	1	2	20	17	87	641	1	42	177	-
Alabama	1	1	2	-	10	2	8	123	-	-	5	-
Mississippi	-	3	8	-	6	-	2	53	2	1	4	-
WEST SOUTH CENTRAL	9	79	82	5	82	76	259	1,494	8	21	224	2
Arkansas	-	-	4	-	4	5	-	13	-	-	-	-
Louisiana *	-	-	6	2	18	12	20	156	-	13	93	-
Oklahoma	3	15	10	-	8	8	8	52	1	1	56	-
Texas	6	64	62	3	52	51	231	1,273	7	7	75	2
MOUNTAIN	122	444	215	3	13	9	17	187	1	5	178	-
Montana	-	-	119	-	2	1	-	3	-	4	144	-
Idaho	-	3	44	1	1	1	-	2	-	1	6	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	122	435	15	-	5	1	15	95	-	-	15	-
New Mexico *	-	1	30	-	2	2	2	10	1	-	5	-
Arizona	-	4	4	-	1	3	-	-	-	-	1	-
Utah	-	-	-	2	2	1	-	42	-	-	4	-
Nevada *	-	1	3	-	-	-	-	35	-	-	3	-
PACIFIC	212	979	387	1	45	44	291	2,738	4	68	547	4
Washington	10	39	25	-	6	7	163	1,471	2	12	125	-
Oregon	2	52	-	-	-	6	16	159	-	2	64	-
California	200	888	359	1	39	28	109	1,089	2	54	353	4
Alaska	-	-	-	-	2	2	2	11	-	-	-	-
Hawaii	-	-	3	-	-	1	1	8	-	-	5	-
Guam *	-	4	1	-	-	-	-	13	-	-	1	-
Puerto Rico	25	145	180	-	1	-	20	220	6	-	14	6
Virgin Islands	-	2	6	-	-	-	3	20	-	-	2	-

\*Delayed reports: Measles: R.I. delete 1, Va. delete 1,  
La. delete 1, Guam 1Meningococcal infections: Mo. 3, N.M. delete 1  
Mumps: Me. 2, Nev. 1, Guam 3

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING MARCH 22, 1975 AND MARCH 23, 1974 (12th WEEK) - Continued

AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS	
	1975	Cum. 1975	Cum. 1975	1975	Cum. 1975	1975	Cum. 1975	GONORRHEA			SYPHILIS (Pri. & Sec.)		Cum. 1975		
								1975	Cumulative		1975	Cumulative			
								1975	1975	1974	1975	1975	1974		
UNITED STATES	670	6,770	9	8	57	-	11	17,566	212,199	192,689	502	6,018	5,588	430	
NEW ENGLAND	28	250	-	-	6	-	-	490	5,805	4,901	22	218	214	10	
Maine	1	20	-	-	-	-	-	42	366	348	-	4	10	9	
New Hampshire *	-	12	-	-	-	-	-	17	182	138	1	9	2	-	
Vermont	2	3	-	-	-	-	-	13	112	140	-	3	1	-	
Massachusetts	16	125	-	-	3	-	-	267	2,969	2,273	10	141	152	-	
Rhode Island	6	31	-	-	-	-	-	42	446	392	2	4	3	-	
Connecticut	3	59	-	-	3	-	-	109	1,730	1,610	9	57	46	1	
MIDDLE ATLANTIC	129	1,180	1	2	8	-	-	1,888	25,683	24,050	70	1,143	1,183	12	
Upstate New York	20	169	1	-	2	-	-	174	4,711	4,506	3	123	118	11	
New York City	51	521	-	1	4	-	-	963	11,421	9,992	46	665	671	-	
New Jersey	29	229	-	1	2	-	-	263	3,212	3,605	14	172	195	-	
Pennsylvania	29	261	-	-	-	-	-	488	6,339	5,947	7	183	199	1	
EAST NORTH CENTRAL	70	1,006	-	-	8	-	1	2,954	35,788	30,701	45	486	468	10	
Ohio	24	298	-	-	1	-	1	650	9,740	8,528	12	107	60	-	
Indiana	9	148	-	-	-	-	-	467	3,160	2,715	2	31	43	-	
Illinois	14	252	-	-	5	-	-	818	12,025	9,393	18	235	243	-	
Michigan	23	295	-	-	2	-	-	695	7,348	7,401	9	84	97	-	
Wisconsin	-	13	-	-	-	-	-	324	3,515	2,664	4	29	25	10	
WEST NORTH CENTRAL	40	242	2	2	3	-	-	912	10,370	9,820	8	131	125	109	
Minnesota	5	33	-	-	1	-	-	207	2,171	2,188	2	15	11	34	
Iowa	3	16	-	-	-	-	-	46	1,099	1,429	-	5	11	19	
Missouri	26	132	1	2	2	-	-	420	3,952	3,065	5	78	81	14	
North Dakota	-	-	-	-	-	-	-	8	172	168	-	3	-	30	
South Dakota	2	13	-	-	-	-	-	44	449	433	1	3	1	-	
Nebraska	1	9	-	-	-	-	-	46	879	780	-	3	3	2	
Kansas	3	39	1	-	-	-	-	141	1,648	1,757	-	24	18	10	
SOUTH ATLANTIC	159	1,555	4	-	2	-	7	4,282	52,545	47,702	161	1,884	1,781	65	
Delaware	2	33	-	-	-	-	-	81	750	724	4	21	19	-	
Maryland	25	234	-	-	-	-	-	479	5,900	4,289	15	144	196	-	
District of Columbia	6	98	-	-	-	-	-	150	3,366	4,796	6	151	157	-	
Virginia	13	189	2	-	1	-	-	506	5,393	4,347	13	152	220	41	
West Virginia	8	69	-	-	-	-	-	59	647	572	1	5	7	1	
North Carolina *	32	230	-	-	1	-	7	601	7,906	6,375	39	264	189	1	
South Carolina	23	82	2	-	-	-	-	342	4,911	5,065	8	148	146	2	
Georgia	24	217	-	-	-	-	-	974	9,496	8,448	21	269	281	16	
Florida	26	403	-	-	-	-	-	1,090	14,176	13,086	54	730	566	4	
EAST SOUTH CENTRAL	38	581	1	-	2	-	2	1,602	17,193	16,410	22	266	292	53	
Kentucky	7	106	-	-	1	-	1	196	2,199	2,005	3	39	66	43	
Tennessee	9	204	1	-	-	-	-	560	6,945	6,461	11	103	112	5	
Alabama	11	190	-	-	-	-	1	532	4,656	4,640	4	71	56	5	
Mississippi	11	81	-	-	1	-	-	314	3,393	3,304	4	53	58	-	
WEST SOUTH CENTRAL	65	739	1	1	1	-	1	2,231	26,860	25,622	59	567	511	122	
Arkansas	4	97	1	-	-	-	-	288	2,570	2,803	2	13	25	17	
Louisiana *	10	115	-	-	-	-	-	402	5,053	5,534	24	133	150	3	
Oklahoma	3	73	-	-	-	-	1	219	2,399	1,942	1	29	37	37	
Texas	48	454	-	1	1	-	-	1,322	16,838	15,343	32	392	299	65	
MOUNTAIN	6	132	-	-	3	-	-	720	8,016	6,811	7	145	137	15	
Montana	-	2	-	-	-	-	-	32	474	412	-	3	-	7	
Idaho	-	4	-	-	-	-	-	41	420	438	1	3	-	-	
Wyoming	-	5	-	-	1	-	-	18	195	165	-	1	2	-	
Colorado	-	-	-	-	-	-	-	170	2,202	1,961	-	31	29	-	
New Mexico *	1	30	-	-	1	-	-	236	1,432	946	-	38	26	6	
Arizona	2	65	-	-	1	-	-	143	2,088	1,768	3	52	54	2	
Utah	3	6	-	-	-	-	-	68	486	332	3	4	5	-	
Nevada *	-	20	-	-	-	-	-	12	719	789	-	13	21	-	
PACIFIC	135	1,085	-	3	24	-	-	2,487	29,939	26,672	108	1,178	877	34	
Washington	9	84	-	1	1	-	-	-	2,520	2,559	-	56	32	-	
Oregon	7	41	-	-	-	-	-	178	2,483	2,298	2	28	21	-	
California	109	840	-	2	23	-	-	2,172	23,601	20,729	104	1,081	815	32	
Alaska *	-	6	-	-	-	-	-	78	793	569	-	-	-	2	
Hawaii	10	114	-	-	-	-	-	59	542	517	2	13	9	-	
Guam *	-	12	-	-	-	-	-	-	90	-	-	1	-	-	
Puerto Rico	8	103	-	-	-	-	-	73	735	743	23	165	228	15	
Virgin Islands	-	3	-	-	-	-	-	4	45	169	-	9	15	-	

\*Delayed reports: Tuberculosis: N.H. delete 1, N.C. delete 1  
Typhoid: N.M. 1Gonorrhoea: La. delete 1, Nev. 8, Alaska 7, Guam 7  
Syphilis: La. delete 2, Nev. 1

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

Area	All Causes					Pneumonia and Influenza All Ages	Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year			All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
<b>NEW ENGLAND</b>	709	454	174	36	24	48	<b>SOUTH ATLANTIC</b>	1,289	702	398	84	58	67
Boston, Mass.	212	120	51	15	15	14	Atlanta, Ga.	150	76	49	12	8	7
Bridgeport, Conn.	52	33	12	4	1	1	Baltimore, Md.	271	165	66	18	13	11
Cambridge, Mass.	24	20	3	-	-	3	Charlotte, N. C.	60	23	22	5	4	2
Fall River, Mass.	22	19	3	-	-	2	Jacksonville, Fla.	93	48	32	3	5	-
Hartford, Conn.	52	31	17	2	1	1	Miami, Fla.	120	71	32	9	5	4
Lowell, Mass.	29	21	4	3	-	-	Norfolk, Va.	60	36	14	6	3	12
Lynn, Mass.	24	13	9	2	-	4	Richmond, Va.	85	43	36	5	1	10
New Bedford, Mass.	24	18	4	2	-	1	Savannah, Ga.	26	12	9	4	-	5
New Haven, Conn.	41	23	15	1	-	1	St. Petersburg, Fla.	94	68	21	1	2	2
Providence, R. I.	83	53	20	3	5	10	Tampa, Fla.	75	38	21	5	5	4
Somerville, Mass.	10	9	1	-	-	3	Washington, D. C.	206	98	75	15	11	10
Springfield, Mass.	41	30	10	-	1	6	Wilmington, Del.	49	24	21	1	1	-
Waterbury, Conn.	41	28	12	1	-	1	<b>EAST SOUTH CENTRAL</b>	711	415	196	47	21	46
Worcester, Mass.	54	36	13	3	1	1	Birmingham, Ala.	112	58	31	6	7	1
<b>MIDDLE ATLANTIC</b>	3,237	2,038	820	193	89	126	Chattanooga, Tenn.	63	42	16	5	-	4
Albany, N. Y.	50	35	10	2	2	-	Knoxville, Tenn.	40	28	8	2	-	-
Allentown, Pa.	27	20	6	1	-	2	Louisville, Ky.	113	63	32	9	5	16
Buffalo, N. Y.	139	89	37	6	4	7	Memphis, Tenn.	173	102	52	8	3	9
Camden, N. J.	41	19	11	4	2	3	Mobile, Ala.	63	37	16	3	2	2
Elizabeth, N. J.	33	20	13	-	-	1	Montgomery, Ala.	43	23	13	7	-	4
Erie, Pa.	38	23	10	-	-	1	Nashville, Tenn.	104	62	28	7	4	10
Jersey City, N. J.	63	46	7	5	3	1	<b>WEST SOUTH CENTRAL</b>	1,298	712	379	107	40	38
Newark, N. J.	69	35	15	11	4	2	Austin, Tex.	33	16	12	1	1	2
New York City, N. Y. †	1,655	1,048	405	109	42	58	Baton Rouge, La.	59	33	19	3	2	2
Paterson, N. J.	37	27	7	2	1	3	Corpus Christi, Tex.	41	20	15	2	1	1
Philadelphia, Pa.	504	292	153	30	18	9	Dallas, Tex.	171	84	55	18	8	2
Pittsburgh, Pa.	174	107	47	6	7	15	El Paso, Tex.	46	27	9	6	2	1
Reading, Pa.	50	40	8	1	-	2	Fort Worth, Tex.	88	53	20	11	3	1
Rochester, N. Y.	117	84	25	4	3	10	Houston, Tex.	340	169	110	35	8	4
Schenectady, N. Y.	24	13	6	3	1	-	Little Rock, Ark.	69	41	21	5	1	4
Scranton, Pa.	24	16	7	1	-	1	New Orleans, La.	158	106	38	3	4	6
Syracuse, N. Y.	84	54	23	2	1	3	San Antonio, Tex.	148	74	47	10	6	6
Trenton, N. J.	45	29	11	3	1	1	Shreveport, La.	65	40	14	4	3	2
Utica, N. Y.	26	18	7	1	-	5	Tulsa, Okla.	80	49	19	9	1	7
Yonkers, N. Y.	37	23	12	2	-	2	<b>MOUNTAIN</b>	560	338	137	36	26	32
<b>EAST NORTH CENTRAL</b>	2,428	1,432	654	153	109	94	Albuquerque, N. Mex.	61	35	17	2	3	5
Akron, Ohio	75	47	21	2	3	-	Colorado Springs, Colo.	22	18	3	-	-	4
Canton, Ohio	49	34	7	6	2	1	Denver, Colo.	139	89	36	6	4	7
Chicago, Ill.	611	308	202	41	36	24	Las Vegas, Nev.	28	13	6	5	3	5
Cincinnati, Ohio	154	98	41	10	3	5	Ogden, Utah	18	14	3	1	-	3
Cleveland, Ohio	167	87	44	17	7	8	Phoenix, Ariz.	128	74	28	12	7	3
Columbus, Ohio	136	80	39	3	9	8	Pueblo, Colo.	28	20	7	1	-	3
Dayton, Ohio	104	61	26	8	4	-	Salt Lake City, Utah	50	34	6	3	4	2
Detroit, Mich.	326	192	80	32	9	13	Tucson, Ariz.	86	41	31	6	5	-
Evansville, Ind.	44	31	11	2	-	3	<b>PACIFIC</b>	1,781	1,124	432	101	66	72
Fort Wayne, Ind.	63	43	14	4	1	4	Berkeley, Calif.	21	13	5	3	-	-
Gary, Ind.	21	10	8	-	1	-	Fresno, Calif.	63	40	11	3	5	3
Grand Rapids, Mich.	44	27	14	-	3	4	Glendale, Calif.	32	24	6	-	1	-
Indianapolis, Ind.	155	96	40	9	5	3	Honolulu, Hawaii	49	24	17	5	2	-
Madison, Wis.	48	29	9	2	6	8	Long Beach, Calif.	107	69	27	5	2	4
Milwaukee, Wis.	153	96	38	6	10	8	Los Angeles, Calif.	585	363	151	34	13	20
Peoria, Ill.	35	19	7	2	5	-	Oakland, Calif.	77	42	22	5	6	3
Rockford, Ill.	34	23	6	2	3	1	Pasadena, Calif.	31	24	4	-	3	-
South Bend, Ind.	31	21	8	1	-	2	Portland, Oreg.	133	89	29	7	4	13
Toledo, Ohio	115	87	22	6	-	2	Sacramento, Calif.	60	38	20	1	1	-
Youngstown, Ohio	63	43	17	-	2	-	San Diego, Calif.	136	89	25	9	7	1
<b>WEST NORTH CENTRAL</b>	768	495	168	43	36	26	San Francisco, Calif.	174	110	38	18	5	9
Des Moines, Iowa	63	41	16	1	3	1	San Jose, Calif.	47	27	10	-	5	-
Duluth, Minn.	25	19	3	2	-	3	Seattle, Wash.	156	97	43	7	8	11
Kansas City, Kans.	32	17	10	1	3	1	Spokane, Wash.	60	43	13	2	2	3
Kansas City, Mo.	120	77	19	7	14	5	Tacoma, Wash.	50	32	11	2	2	5
Lincoln, Nebr.	31	21	7	3	-	1	<b>Total</b>	12,781	7,710	3,358	800	469	549
Minneapolis, Minn.	86	55	19	5	4	2	<b>Expected Number</b>	12,862	7,744	3,432	822	383	519
Omaha, Nebr.	98	66	22	4	3	2							
St. Louis, Mo.	194	118	48	14	7	4							
St. Paul, Minn.	68	47	12	4	1	1							
Wichita, Kans.	51	34	12	2	1	6							

† Delayed report for week ending March 15, 1975

## GASTROENTERITIS — Continued

Control measures included terminating the use of seawater in food handling areas.

(Reported by Epidemiologic Investigations Laboratory Branch and Enteric Diseases Branch, Bacterial Diseases Division and Quarantine Division, Bureau of Epidemiology, CDC; and an EIS Officer.)

## NONHUMAN PRIMATE-ASSOCIATED HEPATITIS — Pennsylvania

Between May 22 and May 28, 1974, 5 individuals in Cumberland County, Pennsylvania, developed jaundice, and diagnoses of hepatitis were made. Tests for hepatitis B surface antigen (HB<sub>s</sub>Ag) conducted on specimens from these individuals were negative.

None of the patients had been exposed to known cases of viral hepatitis, blood transfusions, needles, raw shellfish, or contaminated food or water. All 5 patients, however, had had contact with a young, newly-imported chimpanzee. This 12-month-old chimpanzee had arrived at a privately-owned zoo on April 10, 1974. She was thin and highly nervous, with dry, scaly skin. In addition, she had a poor appetite and persistent diarrhea.

On May 1 the chimpanzee was treated by a local veterinarian and cared for by an assistant of another veterinarian in her home. Subsequently, over a 7-day period in late May, the chimpanzee owner (aged 53), his wife (55), a part-time employee (17), the veterinarian's assistant (20), and her boyfriend (24), all of whom had had frequent contact with the chimpanzee, developed acute HB<sub>s</sub>Ag-negative hepatitis.

Fifty-two contacts of these 5 individuals and the chimpanzee received immune serum globulin (ISG). No additional cases of hepatitis were discovered. A blood specimen from the implicated chimpanzee revealed an SGOT of 85 IU (chimpanzee normal 0-15 IU) and a bilirubin of 2.0 mg% (chimpanzee normal 0.1-0.5 mg%). A cage mate of the implicated chimpanzee appeared healthy, but blood tests revealed a normal bilirubin with an SGOT of 81 IU.

(Reported by Robert Rill, VMD, veterinarian, Cumberland County; WD Schrack, Jr, MD, EJ Witte, VMD, WE Parkin, DVM, Joyce Jacobs, RN, Frances Rumberger, RN, Pennsyl-

## GONOCOCCAL SCALP-WOUND INFECTION — New Jersey

On November 19, 1974, a 34-year-old, gravida 6, para 5 woman, last menstrual period uncertain, was admitted to Saint Peter's General Hospital in New Brunswick, New Jersey, with amniotic membranes which had ruptured 24 hours earlier. She was afebrile, and pelvic examination revealed meconium-stained fluid and a cervix dilated 4 cm. After placing a scalp electrode for fetal monitoring, oxytocin administration was begun. Labor progressed rapidly, and on November 20 the patient delivered an apparently healthy, 5 lb 9 oz girl. Routine AgNO<sub>3</sub> prophylaxis was given.

The child was well until November 25, when exudate and erythema appeared at the site where the scalp electrode had been previously placed. Specimens for culture were obtained and local therapy initiated. However, on November 27, the hospital laboratory reported a pure culture of *Neisseria gonorrhoeae* grown from the exudate. No other site of neonatal gonococcal infection was clinically evident. Upon

## Editorial Note

These are the first known outbreaks caused by *V. parahaemolyticus* on cruise ships sailing from U. S. ports. Both outbreaks were associated with consumption of seafood which was probably contaminated by seawater aboard the ship and which had been held at room temperature. *V. parahaemolyticus*, a halophilic bacterium, is found in coastal waters throughout most of the world. Fish and seafoods have been the incriminated vehicles of transmission in most previously reported outbreaks.

*vania Department of Health; and the Viral Zoonoses Section and Hepatitis Branch, Viral Diseases Division, CDC.)*

## Editorial Note

Since the first reports of nonhuman primate-associated hepatitis, over 200 cases have been reported in humans (1,2,3,4). The frequency of such reports appears to be increasing; and in 1974, 8 separate outbreaks occurring in 7 different states were reported to CDC. The disease is usually mild, of brief duration, and clinically indistinguishable from hepatitis A. Tests for HB<sub>s</sub>Ag in human cases and implicated animals have been uniformly negative. Various nonhuman primates have been associated with cases of hepatitis in humans, but the most frequently implicated have been chimpanzees. These have generally been young, newly-imported chimpanzees that appear well or have non-specific clinical illness (1,2,3,4). Immune serum globulin seems to protect animal handlers from the development of clinical hepatitis.

Those persons who must work with newly-imported nonhuman primates are advised to maintain scrupulous hygiene and to wear protective clothing when handling primates and primate excreta. Routine administration of ISG is recommended for those persons having repeated close contact with such animals.

## References

1. Center for Disease Control: Hepatitis Surveillance, Rep No 34, Sep 1971
2. Center for Disease Control: Hepatitis Surveillance, Rep No 36, Sep 1973
3. Center for Disease Control: Morbidity and Mortality Weekly Rep 22 (49): 407-408, 8 Dec 1973
4. Center for Disease Control: Morbidity and Mortality Weekly Rep 23 (43): 371-372, 26 Oct 1974

initiating penicillin G treatment, the infection rapidly resolved.

On the basis of colonial morphology, Gram stain, and oxidase reaction, the bacterial isolates, initially grown on chocolate agar and then transferred to Thayer-Martin media, were presumptively identified as *N. gonorrhoeae*. Sugar fermentation and fluorescent antibody testing done both in the hospital laboratory and at the New Jersey State Health Department confirmed this identification.

Investigation revealed that the mother had been examined infrequently during pregnancy. On September 9, 1974, a gonorrhea-screening culture had been negative. The mother refused examination after the discovery of the child's infection, but subsequently was treated with penicillin.

(Reported by Anthony D'Auria, MS, Microbiologist, Leon Tan, MD, Resident, Department of Pediatrics, Michael Kreitzer, MD, Assistant Clinical Professor of Obstetrics and Gyne-

**SCALP-WOUND INFECTION – Continued**

*cology and Obstetrical Consultant to the New Jersey Maternal and Child Health Program, and Vincent Galdi, MD, Director of Laboratories, Saint Peter's General Hospital, New Brunswick, New Jersey.)*

**Editorial Note**

This is the first report of gonococcal scalp-wound infection reported to CDC. Although maternal gonorrhea was not

documented, infection of the fetus during the period of ruptured membranes or during delivery seems most likely. The possibility of anogenital or pharyngeal gonorrhea in a hospital staff member resulting in hand contamination, and then neonatal infection, is unlikely but cannot be excluded. In addition to ophthalmia neonatorum, orogastric contamination, and disseminated gonococcal infection, this scalp-wound infection should probably be added to the list of possible sequelae for infants born to mothers with gonorrhea.

**INTERNATIONAL NOTES  
QUARANTINE MEASURES**

The following changes should be made in the listing of U.S. Designated Yellow Fever Vaccination Centers included in the "Supplement – Health Information for International Travel," MMWR, Vol. 23, September 1974:

**OREGON – Eugene**  
Lane County Community Health and  
Social Services Department 97401  
Change hours to: By appointment,  
Thursday, 10 a.m.

The Morbidity and Mortality Weekly Report, circulation 45,000, is published by the Center for Disease Control, Atlanta, Ga.

Director, Center for Disease Control  
Director, Bureau of Epidemiology, CDC  
Editor, MMWR

David J. Sencer, M.D.  
Phillip S. Brachman, M.D.  
Michael B. Gregg, M.D.

The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials.

Address all correspondence to: Center for Disease Control  
Attn: Editor  
Morbidity and Mortality Weekly Report  
Atlanta, Georgia 30333

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