

Morbidity and Mortality



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE
DATE OF RELEASE: AUGUST 9, 1973 - ATLANTA, GEORGIA 30333

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EPIDEMIOLOGIC NOTES AND REPORTS
CHOLERA - Guam

On July 19, 1974, a 57-year-old male resident of Guam, who had had a gastrectomy in 1958, became ill with abdominal cramps, profuse watery diarrhea, and vomiting. He was hospitalized and treated with intravenous fluids and antibiotics. He subsequently developed congestive heart failure, pulmonary edema, and an intracranial hemorrhage and died on July 27. Stool cultures obtained prior to his death grew no pathogens on routine enteric media. However, cultures obtained from the intestinal tract at autopsy and plated on TCBS medium grew *Vibrio cholerae* biotype El Tor, serotype Ogawa. The strain identity has been confirmed at CDC.

Preliminary epidemiologic investigation revealed that the patient lived with 9 family members, including a daughter

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and son-in-law who had returned from the Philippines (a cholera-infected country) 14 hours before the onset of his illness. These individuals had been well and had neither brought food from the Philippines nor prepared food for the patient following their arrival.

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

DISEASE	31st WEEK ENDING		MEDIAN 1969-1973	CUMULATIVE, FIRST 31 WEEKS		
	August 3, 1974	August 4, 1973		1974	1973	MEDIAN 1969-1973
Aseptic meningitis	72	182	156	1,387	1,849	1,673
Brucellosis	5	2	3	97	110	110
Chickenpox	325	449	---	97,868	143,576	---
Diphtheria	5	2	---	159	112	94
Encephalitis:						
Primary: Arthropod-borne and unspecified	13	42	37	503	727	722
Post-Infectious	7	3	8	165	185	204
Hepatitis, Viral:						
Type B	202	170	156	5,618	4,723	4,723
Type A	769	924	964	25,437	30,121	32,911
Type unspecified	124	---	---	4,962	---	---
Malaria	1	2	20	107	140	1,633
Measles (rubeola)	155	147	228	19,257	23,574	26,136
Meningococcal infections, total	21	14	19	891	970	1,632
Civilian	21	14	19	868	946	1,449
Military	---	---	---	23	24	174
Mumps	327	543	701	42,917	53,451	65,312
Pertussis	39	---	---	855	---	---
Rubella (German measles)	89	141	328	9,190	25,471	37,290
Tetanus	5	1	4	46	48	67
Tuberculosis, new active	672	541	---	18,315	18,854	---
Tularemia	2	1	2	87	94	87
Typhoid fever	7	9	9	220	423	181
Typhus, tick-borne (Rky. Mt. spotted fever)	42	26	19	506	412	277
Veneral Diseases:						
Gonorrhoea	17,592	17,493	---	516,250	474,515	---
Syphilis, primary and secondary	463	464	---	14,352	14,560	---
Rabies in animals	58	73	71	1,754	2,228	2,228

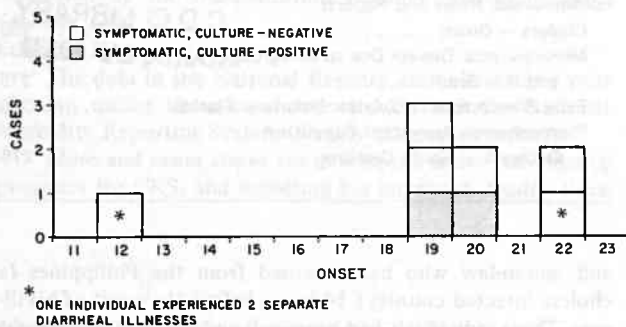
TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax	2	Poliomyelitis, total:	3
Botulism	9	Paralytic:	3
Congenital rubella syndrome: N. Dak 1	35	Psittacosis: Calif. 1, Tex. 1	77
Leprosy: Calif. 2, Tex. 2	65	Rabies in man:	---
Leptospirosis: Hawaii 1	25	Trichinosis:	61
Plague:	1	Typhus, murine:	13

CHOLERA - Continued

The patient had worked on a construction site in Harmon, about 3 miles north of Agana, since July 1. Six of his 14 co-workers, who live in separate areas of the island and rarely have contact with one another except at work, experienced a diarrheal illness with onsets between July 12 and 22 (Figure 1). One man who became ill on July 20 was still having persistent diarrhea when cultured on August 2; his stool specimen taken on that day also grew *V. cholerae* biotype El Tor, serotype Ogawa.

Figure 1
CASES OF DIARRHEAL ILLNESS IN 7 CONSTRUCTION WORKERS
BY DATE OF ONSET, HARMON, GUAM, JULY 12-22, 1974



The patient and his 14 co-workers are residents of Guam. One of the unaffected men visited the Philippines during May and June, and a second unaffected man returned from the Philippines on July 16; neither experienced diarrheal illness while there. None of the other 13 men have left the island during the last year. Only 1 of the family contacts of these 15 men experienced a diarrheal illness during the month of July.

The construction site is supplied by the municipal water system which is derived from deep wells. In addition, the men bring water and ice in a 5-gallon plastic container to the site from the headquarters of their firm approximately 3 miles away. These men use the same container for ice each day. The water from which the ice is made comes from the same distribution line that serves the construction site. All 7 ill men drank water at the site on July 18. Two unaffected men drank only bottled water which they had brought from home on that day.

The workmen bring their lunches from home. In addition, during the week ending July 20, the man who had experienced a diarrheal illness on July 12 and subsequently became ill again on July 22, prepared an item made of commercial sardines and amargoso leaves which was boiled for 15 minutes prior to serving. This food item was shared by 6 of the 7 men on July 18 prior to the onset of their illness. However, the seventh case, who worked at the site only on July 18 and 19 of that week, denied eating this dish. None of the affected persons gave a history of raw shellfish ingestion.

None of the 50 other employees of the same company who work at different construction sites but also obtain water and ice at the headquarters of the firm admitted to diarrheal illness during July. In addition, only 1 of approximately 20 people interviewed who work in completed build-

ings on the construction site admitted to having diarrhea during July.

Review of inpatient discharges and deaths due to gastroenteritis at the main civilian hospital on Guam during the last 5-year period has revealed no increase above previous background levels.

Additional epidemiologic studies to define the magnitude of the problem and the mode of transmission are in progress.

Control measures have consisted of insuring adequate chlorination of the municipal water supply, notifying physicians and the public of the occurrence of the disease, treating family contacts of the second culture-positive case with tetracycline, and warning the public not to eat raw shellfish from Agana Bay because of raw sewage contamination of the bay where shellfish may be harvested. In addition, TCBS medium has been supplied to the military and civilian hospitals and to a large outpatient clinic. Physicians have been requested to obtain cultures on this medium from all individuals presenting with diarrhea. The public was advised of the limitations of cholera vaccine in a press release; cholera vaccine was not administered by health authorities.

(Reported by Abdiel M. Angeles, M.D., Chief, Communicable Disease Control, Eduardo del Rosario, M.D., Officer in Charge, Foreign Quarantine, Emelita Santos, Laboratory Technologist, John Rosario, R.S., M.P.H., Chief of Consumer Protection, Richard A. Mackie, M.S., Chief, Environmental Health Section, Robert L. Haddock, D.V.M., M.P.H., Territorial Epidemiologist, and a Public Health Advisor, Department of Public Health and Social Services, Guam; the Enteric Section, Enterobacteriology Branch, Bacteriology Division, Bureau of Laboratories; the Epidemiologic Services Laboratory Branch, and the Enteric Diseases Branch, Bacterial Diseases Division, Bureau of Epidemiology, CDC.)

Editorial Note

The epidemiologic data suggest that transmission of the disease occurred at the construction site, but the vehicle and the source of *V. cholerae* have not yet been identified. Water at the construction site, water or ice brought from the construction company headquarters, or a common food item eaten by the men at the construction site on or about July 18 may have been contaminated. The significance of the diarrheal illness that affected the cook on July 12 is unknown. There is as yet no evidence that individuals other than those working on the construction site have been affected.

The risk of cholera to persons who have visited or plan to visit Guam is considered very small. During the current pandemic, millions of Americans have traveled in cholera-infected areas; only 4 documented cases have occurred (1). There is no evidence at this time to justify any precautions for travelers to Guam. Travelers to Guam who are returning to the United States are not required to carry a cholera vaccination certificate.

Reference

1. Gangarosa EJ, Faich GA: Cholera: The risk to American travelers. *Ann Intern Med* 74:412-415, 1971

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**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING AUGUST 3, 1974 AND AUGUST 4, 1973 (31st WEEK)**

AREA	ASEPTIC MENINGITIS	BRUCellosIS	CHICKEN-POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified		
						1974	1973	1974	1974	1974	1974		
UNITED STATES	72	5	325	5	159	13	42	7	202	769	124	1	107
NEW ENGLAND	3	-	68	-	-	-	1	-	5	27	21	-	5
Maine *	-	-	3	-	-	-	-	-	-	-	-	-	-
New Hampshire *	-	-	7	-	-	-	-	-	-	1	-	-	-
Vermont	-	-	2	-	-	-	-	-	-	-	-	-	-
Massachusetts	1	-	-	-	-	-	1	-	2	10	20	-	1
Rhode Island	2	-	24	-	-	-	-	-	1	7	-	-	3
Connecticut	-	-	32	-	-	-	-	-	2	9	1	-	1
MIDDLE ATLANTIC	6	-	50	-	1	3	5	-	40	99	21	-	16
Upstate New York	6	-	8	-	-	2	1	-	5	21	-	-	4
New York City	-	-	42	-	-	-	-	-	6	20	-	-	6
New Jersey	-	-	11	-	-	-	4	-	12	26	16	-	3
Pennsylvania	-	-	-	-	1	1	-	-	17	32	5	-	3
EAST NORTH CENTRAL	4	-	110	-	2	2	14	2	17	99	5	1	10
Ohio	1	-	9	-	1	-	10	1	3	19	-	-	4
Indiana	1	-	1	-	-	-	-	-	-	18	-	-	-
Illinois	-	-	-	-	1	-	-	-	3	3	2	-	2
Michigan	2	-	31	-	-	2	4	1	9	52	3	1	3
Wisconsin *	-	-	69	-	-	-	-	-	2	7	-	-	1
WEST NORTH CENTRAL	10	-	10	-	-	1	1	-	9	14	15	-	3
Minnesota	3	-	-	-	-	-	-	-	4	2	3	-	1
Iowa	7	-	4	-	-	-	-	-	3	1	-	-	-
Missouri	-	-	2	-	-	-	-	-	1	2	8	-	1
North Dakota	-	-	4	-	-	-	1	-	1	-	-	-	-
South Dakota	-	-	-	-	-	-	-	-	-	-	-	-	1
Nebraska	-	-	-	-	-	-	-	-	-	4	2	-	-
Kansas	-	-	-	-	-	1	-	-	-	5	2	-	-
SOUTH ATLANTIC	23	2	35	-	1	3	1	1	29	200	21	-	18
Delaware	-	-	-	-	-	-	-	-	1	1	1	-	-
Maryland	1	-	1	-	-	-	-	-	4	9	5	-	2
District of Columbia	-	-	2	-	-	-	-	-	2	2	-	-	2
Virginia *	3	-	7	-	-	1	-	-	7	5	3	-	4
West Virginia	-	-	22	-	-	-	1	-	-	-	-	-	-
North Carolina	4	-	11	-	1	1	-	-	2	30	2	-	4
South Carolina	2	-	3	-	-	-	-	-	-	5	-	-	-
Georgia	-	2	-	-	-	-	-	-	-	32	-	-	1
Florida	13	-	-	-	-	1	-	1	13	116	10	-	5
EAST SOUTH CENTRAL	1	2	7	-	-	1	2	1	12	44	2	-	4
Kentucky *	-	1	6	-	-	-	-	-	1	11	1	-	3
Tennessee	1	1	11	-	-	1	1	1	3	26	1	-	1
Alabama	-	-	1	-	-	-	1	-	8	3	-	-	-
Mississippi	-	-	-	-	-	-	-	-	-	4	-	-	-
WEST SOUTH CENTRAL	6	1	23	-	9	-	10	-	19	109	9	-	9
Arkansas	-	-	4	-	-	-	-	-	-	8	1	-	1
Louisiana	1	-	11	-	-	-	-	-	13	20	6	-	1
Oklahoma	-	1	1	-	-	-	9	-	1	8	2	-	3
Texas	5	-	18	-	9	-	1	-	5	73	-	-	4
MOUNTAIN	-	-	7	-	28	1	-	-	3	38	7	-	4
Montana	-	-	3	-	-	-	-	-	-	8	3	-	-
Idaho	-	-	-	-	-	1	-	-	-	2	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	-	-	-	-	-	-	-	-	-	-	-	-	2
New Mexico	-	-	4	-	10	-	-	-	3	19	-	-	1
Arizona *	-	-	-	-	18	-	-	-	-	3	4	-	-
Utah	-	-	-	-	-	-	-	-	-	3	-	-	-
Nevada	-	-	-	-	-	-	-	-	-	3	-	-	1
PACIFIC	19	-	15	5	118	2	8	3	68	139	23	-	38
Washington	-	-	4	5	109	-	-	-	7	12	17	-	-
Oregon	1	-	2	-	-	1	-	-	9	21	6	-	1
California *	18	-	-	-	5	1	8	3	50	106	-	-	37
Alaska	-	-	6	-	4	-	-	-	2	-	-	-	-
Hawaii	-	-	3	-	-	-	-	-	-	-	-	-	-
Guam *	-	-	-	-	-	-	-	-	-	-	-	-	2
Puerto Rico	-	-	-	-	-	-	-	-	-	-	-	-	1
Virgin Islands	-	-	-	-	-	-	-	-	-	2	-	-	-

*Delayed reports: Aseptic meningitis: N.H. 1
 Chickenpox: Me. 7, N.H. 5, Calif. 27, Guam 1
 Encephalitis, primary: N.H. delete 1

Hepatitis B: Guam 1
 Hepatitis A: Me. 1, Wis. 2, Ky. delete 1,
 Ariz. 1, Guam 8
 Hepatitis unspecified: Va. delete 1, Ariz. delete 1,
 Guam 4

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING AUGUST 3, 1974 AND AUGUST 4, 1973 (31st WEEK) - Continued

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1974	Cumulative		1974	Cumulative		1974	Cum. 1974	1974	1974	Cum. 1974	Cum. 1974
		1974	1973		1974	1973						
UNITED STATES	155	19,257	23,574	21	891	970	327	42,917	39	89	9,190	46
NEW ENGLAND	14	900	7,324	2	49	44	40	5,757	-	5	924	1
Maine *	2	41	64	-	2	1	3	780	-	1	262	-
New Hampshire *	-	197	856	-	11	6	1	273	-	-	16	1
Vermont	-	57	118	1	2	2	-	28	-	-	18	-
Massachusetts	7	374	3,887	1	14	12	10	940	-	3	323	-
Rhode Island	-	59	603	-	7	3	19	2,329	-	-	18	-
Connecticut	5	172	1,796	-	13	20	7	1,407	-	1	287	-
MIDDLE ATLANTIC	81	7,837	2,352	3	119	129	40	3,436	1	14	1,006	3
Upstate New York	20	890	780	3	50	46	12	834	1	4	227	1
New York City	21	549	859	-	15	26	17	576	-	7	129	1
New Jersey	7	5,493	382	-	39	29	1	647	-	1	430	1
Pennsylvania	33	905	331	-	15	28	10	1,379	-	2	220	-
EAST NORTH CENTRAL	14	7,443	8,314	2	105	123	67	12,357	2	30	3,049	7
Ohio	1	2,992	278	1	36	54	14	3,065	-	2	484	2
Indiana	5	214	617	-	9	4	13	953	-	12	499	-
Illinois	-	1,915	2,004	-	10	24	1	1,068	1	3	491	3
Michigan	5	1,886	4,302	1	34	36	15	5,308	-	8	1,147	1
Wisconsin *	3	436	1,113	-	16	5	24	1,963	1	5	428	1
WEST NORTH CENTRAL	5	685	434	-	71	75	14	2,635	-	-	206	9
Minnesota	2	83	19	-	22	6	1	36	-	-	11	1
Iowa	-	134	276	-	13	17	2	1,613	-	-	15	-
Missouri	1	261	49	-	18	31	6	367	-	-	32	2
North Dakota	2	28	58	-	3	3	5	28	-	-	11	3
South Dakota	-	27	-	-	3	4	-	2	-	-	25	-
Nebraska	-	2	5	-	3	7	-	77	-	-	6	-
Kansas	-	150	27	-	9	7	-	512	-	-	106	3
SOUTH ATLANTIC	7	461	1,178	6	180	162	38	5,083	10	11	990	12
Delaware	-	6	8	-	3	1	-	87	-	-	24	-
Maryland	-	22	12	-	18	22	1	94	-	-	2	-
District of Columbia	-	3	5	1	1	4	1	48	-	-	4	-
Virginia	-	21	410	-	29	29	14	522	8	-	38	3
West Virginia	7	148	193	1	7	4	15	2,870	-	9	174	-
North Carolina	-	4	4	2	39	35	NN	NN	2	-	53	3
South Carolina	-	44	57	-	16	10	1	106	-	-	546	1
Georgia	-	4	147	1	8	20	1	1	-	-	2	-
Florida	-	209	342	1	59	37	5	1,355	-	2	147	5
EAST SOUTH CENTRAL	9	195	587	2	95	91	32	5,388	3	11	487	2
Kentucky	8	131	363	-	37	32	4	2,167	1	-	171	-
Tennessee	-	34	165	1	43	37	26	2,371	2	11	245	1
Alabama	1	17	5	-	9	15	2	480	-	-	56	-
Mississippi	-	13	54	1	6	7	-	370	-	-	15	1
WEST SOUTH CENTRAL	5	171	634	4	150	152	53	2,983	4	5	299	4
Arkansas	-	6	69	-	11	13	1	125	1	-	8	-
Louisiana	-	13	84	2	30	30	2	199	1	-	59	2
Oklahoma	-	24	51	1	16	27	-	355	-	1	37	-
Texas	5	128	430	1	93	82	50	2,304	2	4	195	2
MOUNTAIN	1	722	573	1	28	30	5	1,009	-	-	391	-
Montana	-	372	16	-	1	6	2	170	-	-	65	-
Idaho	-	50	247	-	2	4	-	156	-	-	12	-
Wyoming	-	1	79	-	3	-	-	9	-	-	-	-
Colorado	---	29	102	---	7	9	---	484	---	---	158	-
New Mexico	-	54	112	-	2	3	3	168	-	-	109	-
Arizona	1	14	14	-	5	4	-	-	-	-	-	-
Utah	-	3	2	1	5	2	-	18	-	-	14	-
Nevada	-	199	1	-	3	2	-	4	-	-	33	-
PACIFIC	19	843	2,178	1	94	164	38	4,269	19	13	1,838	8
Washington	5	60	1,000	-	9	17	4	1,519	2	-	329	-
Oregon	-	-	452	-	11	12	5	742	1	7	200	1
California	14	723	643	1	68	129	29	1,859	16	5	1,294	7
Alaska	-	-	65	-	3	6	-	96	-	-	-	-
Hawaii	-	60	18	-	3	-	-	53	-	1	15	-
Guam *	-	13	40	-	1	-	-	345	-	-	5	-
Puerto Rico	---	545	1,717	---	4	7	---	819	---	---	21	3
Virgin Islands	-	24	-	-	-	-	-	30	-	-	-	1

*Delayed reports: Mumps: Me. 3, N.H. 2, Guam 8
Rubella: Me. 17, Wisc. delete 2
Tetanus: N.H. 1

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**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING AUGUST 3, 1974 AND AUGUST 4, 1973 (31st WEEK) — Continued**

AREA	TUBERCULOSIS (New Active)		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES					RABIES IN ANIMALS	
	1974	Cum. 1974		1974	1974	1974	Cum. 1974	1974	GONORRHEA		SYPHILIS (Pri. & Sec.)			Cum. 1974
			1974						Cumulative		1974	Cumulative		
								1974	1973	1974		1973		
UNITED STATES	672	18,315	87	7	220	42	506	17,592	516,250	474,515	463	14,352	14,560	1,754
NEW ENGLAND	39	743	—	1	7	1	7	452	12,413	13,234	6	297	423	10
Maine	—	56	—	—	—	—	—	55	1,088	751	—	22	14	1
New Hampshire	2	19	—	—	1	—	—	16	425	448	—	9	5	2
Vermont	—	15	—	—	—	—	—	4	378	200	1	2	13	1
Massachusetts	17	406	—	1	3	1	5	200	5,128	6,360	3	121	204	3
Rhode Island	1	67	—	—	2	—	2	76	1,200	1,342	1	11	10	3
Connecticut	19	180	—	—	1	—	—	101	4,194	4,133	1	132	177	—
MIDDLE ATLANTIC	153	3,283	2	—	30	1	45	2,052	62,286	67,041	102	3,205	3,356	31
Upstate New York	38	459	2	—	6	—	21	377	11,732	12,115	16	311	210	12
New York City*	42	1,251	—	—	20	1	1	1,080	27,343	31,371	53	1,855	2,104	—
New Jersey *	21	625	—	—	4	—	3	184	8,298	9,334	10	501	593	9
Pennsylvania	52	948	—	—	—	—	20	411	14,913	14,221	23	538	449	10
EAST NORTH CENTRAL	84	2,472	5	—	20	3	11	2,488	73,417	55,373	29	998	803	106
Ohio *	25	685	—	—	5	2	8	879	22,086	17,897	5	163	170	—
Indiana	13	365	—	—	1	1	1	357	7,680	6,558	7	110	182	10
Illinois	27	719	3	—	7	—	2	410	17,239	8,014	5	418	107	22
Michigan	15	645	—	—	6	—	—	515	18,270	17,021	11	244	296	1
Wisconsin	4	58	2	—	1	—	—	327	8,142	5,883	1	63	48	73
WEST NORTH CENTRAL	15	665	15	—	7	1	4	928	27,148	25,913	9	353	206	490
Minnesota	5	114	—	—	3	—	—	337	6,277	5,378	4	51	64	161
Iowa	1	70	—	—	1	—	1	—	3,492	3,354	—	23	43	88
Missouri	6	322	11	—	1	—	2	211	8,674	8,786	4	236	76	22
North Dakota	—	16	2	—	—	—	—	14	403	378	—	3	1	83
South Dakota *	—	37	2	—	—	—	—	47	1,293	1,334	—	2	3	91
Nebraska	—	31	—	—	—	—	—	131	2,275	2,650	1	8	3	4
Kansas	3	75	—	—	2	1	1	188	4,734	4,033	—	30	16	41
SOUTH ATLANTIC	128	3,856	8	—	31	24	289	4,721	133,212	118,887	167	4,646	4,268	217
Delaware	1	55	—	—	—	3	7	38	1,693	1,644	1	48	61	1
Maryland	16	503	—	—	2	—	38	749	13,924	9,993	16	466	434	15
District of Columbia	4	235	—	—	1	—	—	397	9,806	9,853	10	387	525	—
Virginia *	12	481	3	—	1	9	90	520	11,533	11,800	22	499	448	62
West Virginia	3	178	—	—	8	—	4	51	1,550	1,776	—	9	16	23
North Carolina *	21	606	3	—	3	6	72	760	17,429	17,381	19	572	364	18
South Carolina	13	379	—	—	3	—	42	543	14,072	12,819	17	520	643	3
Georgia	16	533	2	—	2	6	34	685	27,972	22,792	18	504	664	67
Florida	42	886	—	—	11	—	2	978	35,233	30,829	64	1,641	1,113	28
EAST SOUTH CENTRAL	74	1,636	9	1	31	8	77	1,084	44,033	39,402	24	740	921	169
Kentucky	16	378	2	—	14	2	10	213	5,456	4,816	10	174	340	107
Tennessee	11	516	5	1	13	5	50	572	17,473	14,979	7	290	260	40
Alabama	26	480	2	—	2	—	7	258	12,074	11,110	—	132	101	21
Mississippi	21	262	—	—	2	1	10	41	9,030	8,497	7	144	220	1
WEST SOUTH CENTRAL	63	2,274	39	1	21	4	65	2,536	71,543	65,144	44	1,374	1,651	415
Arkansas	8	302	25	—	1	—	7	142	6,974	7,832	1	66	98	55
Louisiana	21	300	2	—	8	—	1	634	14,633	13,747	12	391	497	21
Oklahoma	14	196	10	1	2	4	51	206	6,341	6,468	6	87	109	100
Texas *	20	1,476	2	—	10	—	6	1,554	43,595	37,097	25	830	947	239
MOUNTAIN	15	594	5	—	12	—	6	659	19,641	17,220	20	340	449	100
Montana	1	51	—	—	—	—	1	43	1,091	958	—	3	3	5
Idaho	—	22	—	—	—	—	1	40	1,129	1,051	—	7	7	—
Wyoming	—	13	2	—	3	—	1	9	390	302	—	5	21	9
Colorado	—	105	—	—	—	—	1	—	5,292	4,652	—	75	133	27
New Mexico *	8	127	2	—	2	—	1	141	2,939	3,013	8	50	47	28
Arizona	5	216	1	—	6	—	—	185	5,943	4,953	5	130	93	30
Utah	—	23	—	—	—	—	1	41	1,046	885	2	11	9	1
Nevada	1	37	—	—	1	—	—	200	1,811	1,406	5	59	136	—
PACIFIC	101	2,792	4	4	61	—	2	2,672	72,557	72,301	62	2,399	2,483	216
Washington	7	192	—	—	11	—	—	226	6,797	6,548	—	53	92	—
Oregon	3	114	—	—	—	—	2	304	6,330	6,357	3	51	43	8
California	75	2,213	4	2	47	—	—	2,076	56,267	56,288	57	2,261	2,247	200
Alaska *	—	56	—	2	2	—	—	38	1,599	1,762	—	10	45	8
Hawaii	16	217	—	—	1	—	—	28	1,564	1,346	2	24	56	—
Guam *	—	24	—	—	—	—	—	—	175	213	—	2	2	—
Puerto Rico	—	308	—	—	3	—	—	—	1,772	2,507	—	498	450	35
Virgin Islands	—	3	—	—	—	—	—	3	192	139	—	30	16	—

*Delayed reports: Tuberculosis: Ohio delete 1, N.C. delete 1, Texas delete 106, N.M. 9, Alaska delete 1

Gonorrhea: NYC delete 16, Guam 14
Syphilis: NYC 48
Rabies: N.J. 8, S.D. 90, Texas 5

Week No.

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING AUGUST 3, 1974

31

(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	
NEW ENGLAND	621	365	174	31	26	35	SOUTH ATLANTIC	1,375	746	405	106	49	37
Boston, Mass.	204	108	57	14	14	13	Atlanta, Ga.	168	96	50	8	5	7
Bridgeport, Conn.	39	24	11	2	2	1	Baltimore, Md.	226	111	78	18	8	2
Cambridge, Mass.	27	22	4	—	—	4	Charlotte, N. C.	43	28	8	3	2	4
Fall River, Mass.	20	12	7	1	—	—	Jacksonville, Fla.	118	62	32	9	7	—
Hartford, Conn.	49	34	10	1	4	1	Miami, Fla.	176	87	59	10	9	3
Lowell, Mass.	23	14	7	1	—	—	Norfolk, Va.	54	30	12	2	8	4
Lynn, Mass.	17	11	6	—	—	—	Richmond, Va.	81	40	31	7	1	4
New Bedford, Mass.	29	21	8	—	—	1	Savannah, Ga.	49	21	18	4	—	1
New Haven, Conn.	42	23	14	2	2	1	St. Petersburg, Fla.	83	69	7	3	3	1
Providence, R. I.	55	27	21	4	—	7	Tampa, Fla.	74	38	18	10	2	5
Somerville, Mass.	3	3	—	—	—	—	Washington, D. C.	251	128	79	30	4	5
Springfield, Mass.	32	23	4	2	2	3	Wilmington, Del.	52	36	13	2	—	1
Waterbury, Conn.	27	18	7	1	1	—							
Worcester, Mass.	54	25	18	3	1	4	EAST SOUTH CENTRAL	616	365	161	43	19	20
MIDDLE ATLANTIC	2,777	1,634	734	174	125	107	Birmingham, Ala.	74	44	21	3	3	—
Albany, N. Y.	49	28	14	3	3	—	Chattanooga, Tenn.	59	45	10	1	1	5
Allentown, Pa.	24	18	5	—	1	2	Knoxville, Tenn.	37	28	7	—	1	1
Buffalo, N. Y.	129	77	36	5	7	7	Louisville, Ky.	96	49	27	13	4	3
Camden, N. J.	45	25	16	1	2	3	Memphis, Tenn.	158	95	39	9	4	3
Elizabeth, N. J.	21	8	10	2	—	1	Mobile, Ala.	62	38	13	7	1	1
Erie, Pa.	41	29	10	—	—	4	Montgomery, Ala.	33	16	14	2	—	1
Jersey City, N. J.	51	31	14	3	3	4	Nashville, Tenn.	97	50	30	8	5	6
Newark, N. J.	59	27	20	8	3	3							
New York City, N. Y. †	1,359	803	354	90	55	45	WEST SOUTH CENTRAL	1,124	599	336	82	44	30
Paterson, N. J.	34	18	8	4	3	1	Austin, Tex.	44	25	13	5	—	3
Philadelphia, Pa.	406	222	94	36	30	5	Baton Rouge, La.	33	17	8	3	2	2
Pittsburgh, Pa.	161	95	45	13	5	9	Corpus Christi, Tex.	26	12	9	1	3	—
Reading, Pa.	24	16	6	1	—	3	Dallas, Tex.	193	105	61	10	6	1
Rochester, N. Y.	117	76	24	3	7	6	El Paso, Tex.	53	27	11	4	4	4
Schenectady, N. Y.	19	13	3	1	—	2	Fort Worth, Tex.	94	54	27	3	6	1
Scranton, Pa.	34	24	10	—	—	3	Houston, Tex.	200	91	69	20	7	1
Syracuse, N. Y.	92	58	25	2	4	1	Little Rock, Ark.	69	40	17	5	4	6
Trenton, N. J.	49	25	21	1	2	4	New Orleans, La.	139	70	51	10	3	—
Utica, N. Y.	18	13	5	—	—	2	San Antonio, Tex.	143	74	39	15	5	3
Yonkers, N. Y.	45	28	14	1	—	2	Shreveport, La.	59	35	15	5	2	4
							Tulsa, Okla.	71	49	16	1	2	5
EAST NORTH CENTRAL	2,399	1,365	667	169	73	62	MOUNTAIN	467	262	112	45	22	15
Akron, Ohio	73	40	22	3	3	—	Albuquerque, N. Mex.	57	28	15	9	1	3
Canton, Ohio	29	9	12	3	1	1	Colorado Springs, Colo.	21	13	4	—	—	1
Chicago, Ill.	642	349	188	52	19	19	Denver, Colo.	97	51	28	9	3	6
Cincinnati, Ohio	157	95	38	11	11	5	Las Vegas, Nev.	19	—	8	8	1	—
Cleveland, Ohio	177	98	56	14	4	7	Ogden, Utah	22	15	6	1	—	2
Columbus, Ohio	139	78	39	8	4	1	Phoenix, Ariz.	117	70	26	8	7	2
Dayton, Ohio	104	58	28	9	4	3	Pueblo, Colo.	22	17	3	2	—	1
Detroit, Mich.	315	172	88	29	7	—	Salt Lake City, Utah	47	31	8	4	4	—
Evansville, Ind.	40	26	8	2	—	1	Tucson, Ariz.	65	37	14	4	6	—
Fort Wayne, Ind.	63	37	20	4	1	7							
Gary, Ind.	20	8	5	4	1	1	PACIFIC	1,583	955	406	101	59	37
Grand Rapids, Mich.	57	37	12	2	3	7	Berkeley, Calif.	20	11	3	5	—	—
Indianapolis, Ind.	150	85	44	5	3	—	Fresno, Calif.	65	41	11	6	3	1
Madison, Wis.	37	23	5	—	2	4	Glendale, Calif.	36	25	10	—	—	1
Milwaukee, Wis.	114	66	38	5	4	1	Honolulu, Hawaii	47	23	13	5	2	—
Peoria, Ill.	47	29	12	4	—	—	Long Beach, Calif.	96	55	31	1	5	2
Rockford, Ill.	41	25	10	3	1	1	Los Angeles, Calif.	422	280	94	25	12	11
South Bend, Ind.	26	22	2	—	—	2	Oakland, Calif.	89	54	18	8	2	4
Toledo, Ohio	111	69	29	7	3	2	Pasadena, Calif.	43	33	6	2	2	—
Youngstown, Ohio	57	39	11	4	2	—	Portland, Oreg.	151	83	44	7	11	3
							Sacramento, Calif.	76	36	23	8	2	4
WEST NORTH CENTRAL	851	513	196	61	47	41	San Diego, Calif.	118	64	35	9	8	2
Des Moines, Iowa	62	40	11	5	2	8	San Francisco, Calif.	143	76	42	16	5	4
Duluth, Minn.	16	13	—	1	1	5	San Jose, Calif.	52	34	10	2	2	1
Kansas City, Kans.	41	26	6	4	3	3	Seattle, Wash.	130	79	39	3	3	2
Kansas City, Mo.	149	90	40	11	5	3	Spokane, Wash.	50	32	15	2	1	—
Lincoln, Nebr.	42	30	7	4	—	3	Tacoma, Wash.	45	29	12	2	1	2
Minneapolis, Minn.	111	68	25	7	7	3							
Omaha, Nebr.	101	51	26	12	7	1	Total	11,813	6,804	3,191	812	464	384
St. Louis, Mo.	201	112	54	10	16	5	Expected Number	11,657	6,719	3,168	807	431	330
St. Paul, Minn.	74	51	13	4	4	4							
Wichita, Kans.	54	32	14	3	2	6							

†Delayed report for week ending July 27, 1974

MENINGOCOCCAL DISEASE DUE TO SEROGROUPS A AND C — Brazil

A large urban epidemic of meningococcal disease is occurring in Brazil. The epidemic was first detected in the area of São Paulo in June 1971 with serogroup C *Neisseria meningitidis* responsible for the major portion of disease. Since then meningococcal disease in Brazil has remained above endemic levels with increasingly larger peaks occurring during the winter in 1971, 1972, and 1973. In February and March 1974 the predominant strain of *N. meningitidis* changed from serogroup C to serogroup A. Both strains are sulfonamide resistant. No official data are available concerning the number of cases, deaths, age, and sex, the incidence, or the geographic distribution of cases.

(Reported by the Bacterial Diseases Division, Bureau of Epidemiology, CDC.)

Editorial Note

Although this epidemic has been in progress for 4 epidemic seasons, there have been no reports of illness in Americans traveling in or living in the affected area. Although some South American countries have imposed restrictions on travelers arriving from Brazil (1), there are no restrictions by the United States.

Reference

1. Howe M: Brazil reports meningitis rise. *New York Times*, 7 Aug 1974

FATAL PLASMODIUM FALCIPARUM MALARIA — Florida

On March 10, 1974, a 56-year-old employee of a North American mining corporation returned to the United States in apparent good health after a 1-month field trip to Liberia. Ten days later he traveled to Venezuela, and on March 24, 5 days after arrival, he was hospitalized in a company-operated hospital in Port Ordes for suspected food poisoning. His symptoms on admission included diarrhea and weakness.

On March 31, he arrived back in the United States and was admitted to a hospital in metropolitan Miami, Florida, with the additional symptom of dyspnea. On examination, he was noted to be diaphoretic, confused, and restless. He was hypotensive and afebrile; no hepatomegaly or splenomegaly was apparent. The initial diagnostic impression was cardiogenic shock, but within a few hours, the diagnosis of *Plasmodium falciparum* malaria was established by microscopic examination of a peripheral blood smear. It was estimated that 20% of the peripheral circulating erythrocytes were parasitized. Results of other laboratory studies were: hemoglobin 17.8 gm%, hematocrit 50%, white blood cell count 14,500 with a differential of 77% polymorphonuclear leukocytes, 14% stabs, 7% lymphocytes, and 2% monocytes, platelet count 60,000/mm³, serum creatinine 4.2 mg%, and blood urea nitrogen 92 mg%. He subsequently developed a progressive hyperbilirubinemia with a peak bilirubin of 14 mg%.

After early administration of fluid therapy, the patient's blood pressure returned to 130/90, and his temperature rose to 102° F. Antimalarial therapy was begun using quinine hydrochloride administered intravenously and pyramethamine and sulfamethoxazole administered through a naso-gastric tube. After 2 days of therapy, it was determined that the patient had not been in a region where chloroquine-resistant *P. falciparum* malaria had been identified, and his therapy was changed from the above regimen to chloroquine phosphate intravenously. However, despite specific antimalarial treatment and general supportive therapy, his condition deteriorated. The onset of seizures was followed by progressive

obundation and finally cardiopulmonary arrest on April 3, 1974.

Pathologic examination demonstrated a marked *P. falciparum* parasitemia with marked hepatic and splenic enlargement. A pinkish discoloration of the pia and cortex of the brain was grossly evident, and microvascular occlusion by parasitized red blood cells accompanied by perivascular extravasation was apparent in the microscopic examination. During his trip to Liberia, the patient did not take malaria chemoprophylaxis.

(Reported by Luisa Yu, Supervising Technologist, and Francis O. Niel Young, M.D., Chief of Pathology, Hialeah Hospital; Bernard Halperin, M.D., Private Physician; Phineas Hyams, M.D., Consultant; Joseph L. Burton, M.D., Assistant Pathologist, Joseph H. Davis, Chief Pathologist, Office of the Medical Examiner, Dade County; Myriam Enriquez, M.D., Head, Disease Control Section, Milton S. Saslaw, M.D., Director, Dade County Department of Public Health; and Chester L. Nayfield, M.D., State Epidemiologist, Florida Division of Health.)

Editorial Note

This is the first death due to malaria reported to CDC in 1974. In 1973, 4 deaths were reported, all as a result of infection with *P. falciparum* and all in civilians. The 1973 *P. falciparum* malaria case-fatality ratio of 8.6% was significantly greater than the ratio of 1.4% for the preceding 10-year period.

Physicians treating patients who have recently returned from the tropics should consider malaria in the diagnosis of any patient with unexplained fever or diarrhea. Persons traveling to malarious areas should take chloroquine phosphate 500 mg (300 mg base) once a week beginning 1 week before entering the malarious area and continuing until 6 weeks after departure.

PLASMAPHERESIS-ASSOCIATED HEPATITIS-A OUTBREAK — South Carolina

On January 11, 1974, 2 cases of viral hepatitis were reported to the Greenville County, South Carolina, Health Department; both persons had a history of plasma donation at a commercial plasmapheresis center in Greenville which had opened in September 1973. In March, follow-up of 3 cases of

hepatitis in prisoners in the Greenville County prison system revealed that they also had a history of recent plasma donation at the same center.

Subsequent case-finding efforts revealed that 35 persons with a history of prior plasma donation at the Greenville cen-

HEPATITIS-A - Continued

ter had onset of viral hepatitis diagnosed by a physician between December 19, 1973, and April 7, 1974. Nineteen of the 35 were tested for hepatitis B antigen by radioimmunoassay; all were negative. The attack rate of 3.5% (35/1,013) for all plasma donors at the center compared with the attack rate of 0.03% (80/240,546) for Greenville County as a whole corresponded to a relative risk greater than 100 for the plasma donors. Further investigation revealed that persons who donated plasma more than one time were at increased risk of developing hepatitis ($p < .05$). Study of hepatitis among prisoners currently in the Greenville County prison system also implicated plasma donation in the transmission of disease (Table 1).

On March 7, officials from the Food and Drug Administration inspected the plasmapheresis center. Their investigation revealed that 2 techniques likely to allow hepatitis transmission had been practiced. 1) The method of pooling plasma from donors during its extraction from the cells allowed potential reflux of this pooled plasma into the bags of red cells to be reinfused into donors. 2) Centrifugation of free plasma directly in the centrifuge cups permitted continuous contamination of the centrifuges in which all donor bags were spun. Both of these practices were corrected on March 9, and no other cases of hepatitis in persons who donated plasma at the center since that date have been reported.

Although initial epidemiologic information showed probable control of the outbreak following the March 9 procedural

Table 1
Distribution of Hepatitis Cases Among Prisoners
Who Did and Did Not Give Plasma at the Plasmapheresis Center
Greenville County, South Carolina

	Ill	Well	Total
Donor	13	3	16
Non-Donor	0	9	9
	<u>13</u>	<u>12</u>	<u>25</u>

$p = 0.0001075$ (Fisher's Exact Test)

changes, the facility was voluntarily closed on the recommendation of local health authorities pending completion of the investigation. At the same time local and state authorities took the first steps toward passing legislation to regulate plasmapheresis facilities.

(Reported by C.A. Dreskin, M.D., and A.T. Smith, Clinical Chemist, T.R.W. Wilson Memorial Laboratory, Greenville General Hospital; R.W. Penick, M.D., Greenville County Health Department; W.B. Gamble, Jr., M.D., Director, Division of Epidemiology, and E.K. Aycock, M.D., M.P.H., Commissioner, South Carolina Department of Health and Environmental Control; K.H. Wong, Ph.D., Microbiologist, Division of Bacterial Products, and S.T. Gibson, M.D., Assistant to the Director, Bureau of Biologics, Food and Drug Administration; and 2 EIS Officers.)

The Morbidity and Mortality Weekly Report, circulation 39,000, is published by the Center for Disease Control, Atlanta, Ga.

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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

DHEW Publication No. (CDC) 75-8017

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