CENTER FOR DISEASE CONTROL

Morbidity and Mortality

Vol. 23, No. 23

WEEKLY REPORT

For Week Ending June 8, 1974

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

DATE OF RELEASE: JUNE 14, 1974 – ATLANTA, GEORGIA 30333

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EPIDEMIOLOGIC NOTES AND REPORTS
CIGUATERA – Hawaii

In February and early March 1974, the Epidemiology Branch of the Hawaii State Department of Health received telephone calls from local health authorities and private citizens about neurologic illness consistent with ciguatera following consumption of Kahala (amberjack or *Seriola drumerilii*) weighing 30 lb or more. Sporadic cases and small clusters were reported on Maui, Kauai, and Oahu.

On the afternoon of March 10, an emergency room physician on the island of Kauai reported to the local health department that he had seen a number of patients with diarrhea, weakness, paresthesias, and paradoxical temperature sensation. Preliminary questioning indicated that all ill persons had eaten small amounts of 1 food item – Kahala sashimi (raw, sliced amberjack) – at a restaurant which had served 2 groups at about 7:30 p.m. on March 9.

One of the groups, a wedding party consisting of 110 persons, was selected for further investigation. Telephone interviews with 57 persons revealed that 29 (51%) had been ill (defined as diarrhea and/or a neurologic symptom) following

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

DISEASE	23rd WEEK ENDING		MEDIAN 1969-1973	CUMULATIVE, FIRST 23 WEEKS		
	June 8, 1974	June 9, 1973		1974	1973	MEDIAN 1969-1973
Aseptic meningitis	41	55	52	824	897	841
Brucellosis	4	4	4	61	60	69
Chickenpox	3,632	4,566	– – –	86,407	129,436	– – –
Diphtheria	6	3	3	139	93	79
Encephalitis:						
Primary: Arthropod-borne and unspecified	12	28	21	365	471	453
Post-Infectious	11	13	10	114	132	132
Hepatitis, Viral:						
Type B	197	188	159	3,998	3,454	3,454
Type A	732	} 1,038	} 1,076	19,201	} 22,866	} 24,881
Type unspecified	185			3,839		
Malaria	1	7	50	67	102	1,161
Measles (rubeola)	919	813	1,216	16,066	20,550	22,681
Meningococcal infections, total	24	25	33	716	773	1,416
Civilian	23	25	33	697	755	1,239
Military	1	–	3	19	18	146
Mumps	1,546	1,816	2,038	37,220	46,197	56,047
Pertussis	27	– – –	– – –	548	– – –	– – –
Rubella (German measles)	356	743	1,302	7,736	22,956	32,510
Tetanus	–	1	1	26	35	41
Tuberculosis, new active	619	582	– – –	13,429	14,082	– – –
Tularemia	4	12	3	40	46	45
Typhoid fever	10	12	5	147	345	122
Typhus, tick-borne (Rky. Mt. spotted fever)	56	46	18	183	144	89
Venereal Diseases:						
Gonorrhea	16,361	15,918	– – –	372,290	339,877	– – –
Syphilis, primary and secondary	441	426	– – –	10,617	10,935	– – –
Rabies in animals	59	86	78	1,218	1,677	1,705

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	2	Poliomyelitis, total:	2
Botulism: *	5	Paralytic:	2
Congenital rubella syndrome:	32	Psittacosis: N.Y.C. 1	12
Leprosy: Calif. 2, V.I. 1	55	Rabies in man:	–
Leptospirosis:	20	Trichinosis: Conn. 1	50
Plague:	–	Typhus, murine:	10

*Delayed reports: Botulism: (1973) Utah 1

CIGUATERA – Continued

the meal. Symptoms were consistent with ciguatera (Table 1). The mean incubation period was 12 hours (Figure 1). Illness was mild in most persons, but 2 individuals required hospitalization.

Food-specific attack rates implicated Kahala sashimi as the vehicle of transmission ($x^2 = 31.29$, $p < .001$). Using a mongoose bioassay *(1)*, pieces of the fish served at the wedding party were found to produce an illness in the animals compatible with ciguatera.

A second group of 6 people ate chunks of the fish (Kahala nitsuke) at the restaurant on March 9; all developed a more severe illness than that experienced by the previous group with a shorter mean incubation period of 7 hours.

The 2 amberjacks served at the restaurant had been caught off Niihau on March 3 and frozen until the day of the outbreak; one weighed 20 lb and the other 30 lb. The fish were cleaned by the chef at noon on March 9. Viscera from the 30-lb fish were sauteed in soy sauce and eaten that afternoon by the chef at the restaurant. He immediately had symptoms of tingling in his mouth, and within 1½ hours he developed abdominal cramps, diarrhea, and paresthesias of his extremities.

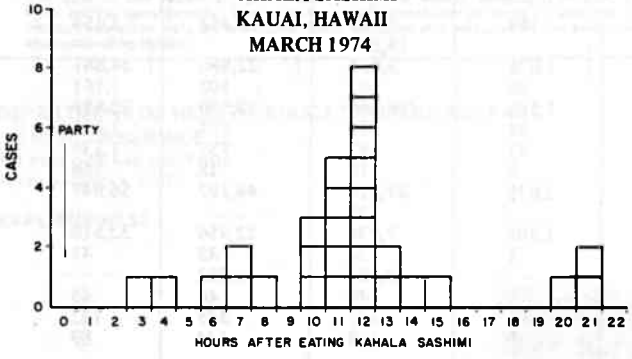
On March 11, 1974, the State Department of Health issued a warning in the news media to avoid eating Kahala. In addition, the local fishing industry cooperated by requesting that fishermen not take Kahala weighing more than 30 lb to market. A few sporadic cases continued to be reported over the next 3 weeks, but no additional large outbreaks were reported.

(Reported by Ronald Hattis, M.D., private physician, Kauai; A.H. Banner, Ph.D., Professor of Zoology, Institute of Marine Biology, University of Hawaii; Patsy Matsuura, R.N., Epidemiological Specialist, Harold Matsuura, M.P.H., Sanitarian, Richard Cardines, M.D., M.P.H., Kauai District Health Officer, John M. Gooch, D.V.M., M.P.H., State Veterinarian, and Ned H. Wiebenga, M.D., M.P.H., State Epidemiologist, Hawaii State Department of Health; and an EIS Officer.)

Table 1
Symptoms of 29 Wedding Party Guests, Kauai, Hawaii, March 9-10, 1974

	Number with symptom	Percent with symptom
Diarrhea	20	69
Weakness	16	55
Tingling of mouth or tongue	11	38
Reversal of temperature sensation	9	31
Myalgia	6	21
Tingling hands and feet	5	17
Nausea or vomiting	5	17
Headache	3	10
Dizziness	3	10
Numbness	2	7
Abdominal cramps	2	7
Burning throat	1	3
Visual difficulty	1	3
Cold sweat	1	3

Figure 1
CIGUATERA CASES BY HOURS AFTER EATING KAHALA SASHIMI KAUAI, HAWAII MARCH 1974



Editorial Note

Ciguatera is a type of ichthyosarcotoxism caused by the ingestion of certain types of marine shore or reef fish in tropical or subtropical regions and was first documented in Hawaii in 1956 *(2)*. Although over 400 species of fish have been reported as ciguatoxic, the fish most frequently implicated as the vehicle in outbreaks is the barracuda *(3)*. Amberjack, red snapper, and grouper are other common vehicles *(4)*.

Ciguatera toxin(s) is heat-stable, is not toxic to fish, and is found in the highest concentration in fish liver, followed in order by the intestinal tract, testes and ovaries, and muscles *(3)*. Large fish are more likely to be toxic than smaller ones of the same species *(3)*.

The mean incubation period of 12 hours in the wedding guests is longer than the generally accepted incubation period of 3-5 hours *(3)*. Of interest is the fact that the chef who ate the most toxic portion of the fish experienced perioral paresthesias within minutes and gastrointestinal symptoms within 1½ hours, while the group of 6 individuals who ate the larger pieces of fish muscle became ill a mean of 7 hours after the meal. These data suggest that the incubation period as well as the clinical severity was a function of the amount of toxin ingested.

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AMPICILLIN-RESISTANT *HEMOPHILUS INFLUENZAE* MENINGITIS – Texas, Florida

Case 1

On April 9, 1974, a previously healthy 6-month-old male was admitted to an El Paso, Texas, hospital with the diagnosis of bacterial meningitis. Six days before admission the child developed an upper respiratory infection with a temperature of 101°F. Four days before admission he was begun on symptomatic therapy without antibiotics. One day before admission he became progressively sicker with anorexia, vomiting, and lethargy.

On admission, the physical examination showed him to be lethargic and irritable with a temperature of 102°F, a

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JUNE 8, 1974 AND JUNE 9, 1973 (23rd WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified		
	1974	1974	1974	1974	Cum. 1974	1974	1973	1974	1974	1974	1974	1974	Cum. 1974
UNITED STATES	41	4	3,632	6	139	12	28	11	197	732	185	1	67
NEW ENGLAND	1	–	430	–	–	–	–	–	6	31	10	–	5
Maine *	–	–	10	–	–	–	–	–	–	5	–	–	–
New Hampshire *	–	–	69	–	–	–	–	–	–	2	–	–	–
Vermont	–	–	14	–	–	–	–	–	1	2	–	–	–
Massachusetts	1	–	–	–	–	–	–	–	4	11	10	–	1
Rhode Island	–	–	104	–	–	–	–	–	1	4	–	–	3
Connecticut	–	–	233	–	–	–	–	–	–	7	–	–	1
MIDDLE ATLANTIC	5	–	255	–	1	2	3	1	27	103	27	–	9
Upstate New York	1	–	109	–	–	–	1	1	2	39	4	–	3
New York City	–	–	140	–	–	–	–	–	3	20	–	–	3
New Jersey	4	–	NN	–	–	1	2	–	18	28	20	–	1
Pennsylvania	–	–	6	–	1	1	–	–	4	16	3	–	2
EAST NORTH CENTRAL	4	–	1,375	1	2	2	18	2	28	104	28	–	9
Ohio	1	–	186	1	1	1	7	1	1	18	–	–	4
Indiana	–	–	88	–	–	–	1	–	–	–	24	–	–
Illinois	–	–	–	–	1	1	4	–	12	34	2	–	2
Michigan	3	–	556	–	–	–	6	1	15	42	2	–	2
Wisconsin	–	–	545	–	–	–	–	–	–	10	–	–	1
WEST NORTH CENTRAL	–	–	285	–	–	3	1	1	4	12	17	–	2
Minnesota	–	–	41	–	–	–	–	1	1	2	–	–	–
Iowa	–	–	167	–	–	–	1	–	1	–	–	–	–
Missouri	–	–	7	–	–	2	–	–	–	–	13	–	1
North Dakota	–	–	17	–	–	–	–	–	–	2	–	–	–
South Dakota	–	–	–	–	–	–	–	–	–	2	–	–	1
Nebraska *	–	–	13	–	–	–	–	–	–	–	–	–	–
Kansas	–	–	40	–	–	1	–	–	–	6	4	–	–
SOUTH ATLANTIC	4	2	335	–	1	–	2	4	35	152	34	–	11
Delaware	–	–	8	–	–	–	–	–	6	3	–	–	–
Maryland	–	–	7	–	–	–	–	1	1	8	1	–	2
District of Columbia	–	–	5	–	–	–	–	–	3	1	–	–	2
Virginia	1	–	31	–	–	–	–	2	3	9	4	–	2
West Virginia	–	–	141	–	–	–	–	–	–	3	–	–	–
North Carolina	–	2	NN	–	1	–	2	–	1	8	3	–	2
South Carolina	1	–	138	–	–	–	–	–	–	5	5	–	–
Georgia	–	–	5	–	–	–	–	–	3	12	–	–	–
Florida	2	–	–	–	–	–	–	1	18	103	21	–	3
EAST SOUTH CENTRAL	2	2	166	–	–	–	–	1	17	45	4	–	2
Kentucky	–	–	115	–	–	–	–	–	4	11	3	–	2
Tennessee	2	2	NN	–	–	–	–	–	9	31	1	–	–
Alabama	–	–	45	–	–	–	–	1	3	2	–	–	–
Mississippi	–	–	6	–	–	–	–	–	1	1	–	–	–
WEST SOUTH CENTRAL	4	–	414	–	8	3	2	1	8	121	4	–	3
Arkansas	–	–	221	–	–	–	–	–	1	8	2	–	–
Louisiana	–	–	NN	–	–	1	–	–	1	8	2	–	1
Oklahoma	–	–	20	–	–	2	2	–	1	18	–	–	1
Texas	4	–	173	–	8	–	–	1	5	87	–	–	1
MOUNTAIN	–	–	145	1	27	–	–	–	6	33	24	–	3
Montana	–	–	73	–	–	–	–	–	1	9	–	–	–
Idaho	–	–	–	–	–	–	–	–	–	–	2	–	–
Wyoming	–	–	1	–	–	–	–	–	–	–	–	–	–
Colorado	–	–	50	–	–	–	–	–	5	4	10	–	2
New Mexico *	–	–	19	–	10	–	–	–	–	4	–	–	1
Arizona	–	–	–	1	17	–	–	–	–	4	8	–	–
Utah	–	–	2	–	–	–	–	–	–	2	4	–	–
Nevada	–	–	–	–	–	–	–	–	–	10	–	–	–
PACIFIC	21	–	227	4	100	2	2	1	66	131	37	1	23
Washington	1	–	189	4	91	–	–	–	10	19	17	–	–
Oregon	5	–	1	–	–	–	–	–	5	14	2	–	–
California *	14	–	–	–	5	2	2	1	49	92	17	1	23
Alaska	–	–	11	–	4	–	–	–	2	1	–	–	–
Hawaii	1	–	26	–	–	–	–	–	–	5	1	–	–
Guam	–	–	–	–	–	–	–	–	–	–	–	–	1
Puerto Rico	–	–	28	–	–	–	–	–	–	–	12	–	–
Virgin Islands	–	–	7	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Chickenpox: Me. 25, N.H. 4, Calif. 85
Hepatitis B: N.M. delete 1
Hepatitis A: Me. 1, N.H. 1
Hepatitis Unspecified: Me. 1, Neb. delete 3

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JUNE 8, 1974 AND JUNE 9, 1973 (23rd 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	919	16,066	20,550	24	716	773	1,546	37,220	27	356	7,736	26
NEW ENGLAND	30	724	6,881	1	40	34	189	4,956	1	54	788	–
Maine *	1	31	46	–	2	–	5	735	–	21	226	–
New Hampshire *	–	196	825	–	7	6	11	219	–	–	15	–
Vermont	2	57	105	–	1	2	2	15	1	–	11	–
Massachusetts	20	275	3,700	–	11	11	44	805	–	17	279	–
Rhode Island	–	57	534	–	7	1	91	1,922	–	3	18	–
Connecticut	7	108	1,671	1	12	14	36	1,260	–	13	239	–
MIDDLE ATLANTIC	441	6,366	1,762	2	92	109	129	2,846	3	65	843	1
Upstate New York	44	324	521	1	41	40	18	634	1	16	195	–
New York City	23	378	761	–	13	20	23	414	2	6	94	–
New Jersey	288	4,947	245	1	26	25	47	580	–	42	370	1
Pennsylvania	86	717	235	–	12	24	41	1,218	–	1	184	–
EAST NORTH CENTRAL	341	6,384	6,970	3	86	95	466	10,459	6	155	2,556	4
Ohio	120	2,815	237	2	28	42	125	2,598	–	17	426	2
Indiana	9	191	509	–	8	2	38	828	–	12	422	–
Illinois	136	1,432	1,620	–	10	20	36	894	3	18	360	1
Michigan	57	1,618	3,652	1	28	26	165	4,461	–	91	976	1
Wisconsin	19	328	952	–	12	5	102	1,678	3	17	372	–
WEST NORTH CENTRAL	2	523	403	1	52	64	35	2,470	–	8	199	6
Minnesota	1	77	15	–	17	2	–	31	–	–	7	–
Iowa	–	32	259	–	8	15	19	1,595	–	–	14	–
Missouri	1	210	47	1	15	30	4	313	–	1	30	2
North Dakota*	–	25	52	–	2	3	–	16	–	1	11	1
South Dakota	–	27	–	–	2	3	–	2	–	–	25	–
Nebraska	–	2	3	–	1	4	2	66	–	–	6	–
Kansas	–	150	27	–	7	7	10	447	–	6	106	3
SOUTH ATLANTIC	9	392	1,062	3	138	131	171	4,600	3	15	771	7
Delaware	–	6	5	–	3	1	5	68	–	–	20	–
Maryland	–	21	2	–	15	19	–	80	–	–	–	–
District of Columbia	–	3	3	–	–	3	1	41	–	–	4	–
Virginia	–	19	385	–	27	21	40	425	–	2	28	2
West Virginia	1	102	171	–	6	4	94	2,684	–	5	125	–
North Carolina	2	4	4	1	30	27	NN	NN	3	3	50	–
South Carolina	–	36	51	–	12	10	2	95	–	2	418	1
Georgia	1	4	143	–	5	17	–	–	–	–	2	–
Florida	5	197	298	2	40	29	29	1,207	–	3	124	4
EAST SOUTH CENTRAL	23	122	548	4	82	71	267	4,676	5	9	415	2
Kentucky	21	95	350	1	36	26	139	1,993	5	4	156	–
Tennessee	2	9	152	2	35	27	103	1,919	–	4	194	1
Alabama	–	6	4	–	9	13	25	421	–	1	51	–
Mississippi	–	12	42	1	2	5	–	343	–	–	14	1
WEST SOUTH CENTRAL	5	147	603	6	127	121	93	2,564	3	5	265	2
Arkansas	1	5	67	–	9	12	2	116	–	–	8	–
Louisiana	–	12	81	1	22	25	–	157	–	–	58	1
Oklahoma	–	22	48	–	12	11	15	328	–	–	30	–
Texas	4	108	407	5	84	73	76	1,963	3	5	169	1
MOUNTAIN	24	680	462	–	19	21	24	887	–	10	319	–
Montana	12	353	12	–	1	4	–	143	–	–	62	–
Idaho	–	49	219	–	2	1	–	153	–	–	11	–
Wyoming	–	4	25	–	2	–	–	9	–	–	–	–
Colorado	2	28	90	–	2	5	19	413	–	4	114	–
New Mexico	–	49	101	–	2	3	4	149	–	6	88	–
Arizona	–	11	14	–	4	4	–	–	–	–	–	–
Utah	1	3	1	–	3	2	–	17	–	–	13	–
Nevada	9	183	–	–	3	2	1	3	–	–	31	–
PACIFIC	44	728	1,859	4	80	127	172	3,762	6	35	1,580	4
Washington	8	55	853	–	8	15	59	1,410	–	4	316	–
Oregon	–	–	395	1	9	10	29	656	1	–	176	1
California	33	616	532	3	58	98	73	1,562	5	31	1,074	3
Alaska	–	–	65	–	2	4	10	93	–	–	–	–
Hawaii	3	57	14	–	3	–	1	41	–	–	14	–
Guam	–	6	7	–	1	–	–	277	–	–	2	–
Puerto Rico	30	451	1,453	–	2	4	36	1,069	–	2	16	2
Virgin Islands	3	16	–	–	–	–	3	29	–	–	–	1

*Delayed reports: Measles: Me. 2
Mumps: Me. 27, N.H. 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING JUNE 8, 1974 AND JUNE 9, 1973 (23rd WEEK) – Continued

AREA	TUBERCULOSIS (New Active)		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1974	Cum. 1974	Cum. 1974	1974	Cum. 1974	1974	Cum. 1974	1974	Cumulative 1974	Cumulative 1973	1974	Cumulative 1974	Cumulative 1973	Cum. 1974
UNITED STATES	619	13,429	40	10	147	56	183	16,361	372,290	339,877	441	10,617	10,935	1,218
NEW ENGLAND	27	556	–	–	5	–	–	327	8,452	9,226	8	206	320	9
Maine *	2	44	–	–	–	–	–	41	723	507	–	15	11	1
New Hampshire	–	14	–	–	1	–	–	16	295	314	–	6	4	2
Vermont	–	5	–	–	–	–	–	14	276	133	–	1	12	1
Massachusetts	12	325	–	–	2	–	–	170	3,537	4,373	5	82	160	3
Rhode Island	4	53	–	–	2	–	–	17	809	980	–	8	7	2
Connecticut	9	115	–	–	–	–	–	69	2,812	2,919	3	94	126	–
MIDDLE ATLANTIC	87	2,328	1	–	25	2	12	2,189	45,065	47,520	78	2,355	2,459	14
Upstate New York	12	318	1	–	6	1	2	380	8,423	8,986	2	230	141	8
New York City	35	881	–	–	16	–	–	1,080	19,609	21,731	47	1,356	1,564	–
New Jersey	15	452	–	–	3	–	–	522	6,432	6,817	17	371	427	–
Pennsylvania	25	677	–	–	–	1	10	207	10,601	9,986	12	398	327	6
EAST NORTH CENTRAL	70	1,758	5	1	11	2	2	1,986	52,501	39,589	43	741	636	82
Ohio *	18	506	–	–	4	2	2	498	16,778	12,683	11	129	126	–
Indiana	7	262	–	1	1	–	–	220	5,468	4,810	4	88	153	8
Illinois	28	496	3	–	4	–	–	535	10,895	5,895	18	306	88	16
Michigan	13	460	–	–	2	–	–	509	13,625	12,096	6	170	231	1
Wisconsin *	4	34	2	–	–	–	–	224	5,735	4,105	4	48	38	57
WEST NORTH CENTRAL	20	480	9	–	4	1	1	800	19,441	18,995	6	244	134	287
Minnesota	5	77	–	–	3	–	–	182	4,434	3,773	1	39	53	121
Iowa	2	49	–	–	–	1	1	43	2,629	2,506	–	12	13	65
Missouri	9	243	8	–	1	–	–	336	6,205	6,556	4	165	48	16
North Dakota	–	11	–	–	–	–	–	8	298	271	1	2	1	59
South Dakota	1	30	1	–	–	–	–	47	908	953	–	2	1	–
Nebraska	1	24	–	–	–	–	–	64	1,623	1,935	–	3	2	2
Kansas	2	46	–	–	–	–	–	120	3,344	3,001	–	21	16	24
SOUTH ATLANTIC	129	2,847	5	2	23	33	110	4,600	94,961	85,789	152	3,417	3,177	146
Delaware	1	40	–	–	–	1	3	47	1,267	1,158	2	42	45	1
Maryland	20	381	–	1	2	6	22	521	9,054	7,215	5	359	329	–
District of Columbia	5	180	–	–	–	–	1	283	6,869	6,938	10	287	364	–
Virginia	12	344	2	–	1	7	24	445	8,225	8,221	27	382	331	53
West Virginia	5	139	–	–	3	–	1	34	1,138	1,360	–	9	11	19
North Carolina	25	447	1	1	3	7	29	524	12,460	12,521	6	403	265	10
South Carolina	8	286	–	–	2	11	23	527	10,370	9,352	16	421	480	3
Georgia	26	367	2	–	2	1	6	1,118	19,832	15,986	15	359	560	38
Florida	27	663	–	–	10	–	1	1,101	25,746	23,038	71	1,155	792	22
EAST SOUTH CENTRAL	55	1,219	7	–	15	9	27	1,300	32,135	28,750	28	553	733	134
Kentucky *	19	272	1	–	7	3	3	183	3,972	3,545	4	127	295	86
Tennessee	22	405	4	–	6	5	17	573	12,539	10,730	10	215	185	30
Alabama	6	363	2	–	2	1	5	189	8,743	8,200	8	111	72	17
Mississippi	8	179	–	–	–	–	2	355	6,881	6,275	6	100	181	1
WEST SOUTH CENTRAL	104	1,773	10	1	10	9	27	2,199	52,452	46,127	33	1,046	1,251	321
Arkansas	13	227	4	–	1	1	4	227	5,194	6,014	2	60	68	41
Louisiana	6	205	1	–	2	–	–	453	10,889	9,696	13	301	379	12
Oklahoma	7	131	4	–	–	7	18	241	4,551	4,950	1	67	87	73
Texas	78	1,210	1	1	7	1	5	1,278	31,818	25,467	17	618	717	195
MOUNTAIN	30	444	2	–	10	–	3	520	14,174	12,676	11	253	362	46
Montana	–	32	–	–	–	–	1	33	820	748	–	1	2	–
Idaho	–	21	–	–	–	–	–	32	831	762	–	5	6	–
Wyoming	1	11	1	–	2	–	1	12	301	220	1	5	16	5
Colorado	8	88	–	–	–	–	1	178	4,047	3,354	4	56	109	–
New Mexico	7	89	1	–	1	–	–	106	1,954	2,038	–	36	38	21
Arizona	10	155	–	–	6	–	–	87	4,324	3,727	5	95	79	20
Utah	2	18	–	–	–	–	–	23	739	656	–	7	8	–
Nevada	2	30	–	–	1	–	–	49	1,158	1,171	1	48	104	–
PACIFIC	97	2,024	1	6	44	–	1	2,440	53,109	51,205	82	1,802	1,863	179
Washington	5	129	–	5	9	–	–	230	4,919	4,678	9	43	67	–
Oregon	1	80	–	–	–	–	1	251	4,584	4,415	2	36	33	8
California	87	1,635	1	1	35	–	–	1,855	41,257	39,831	71	1,703	1,678	164
Alaska	–	32	–	–	–	–	–	30	1,148	1,305	–	1	40	7
Hawaii	4	148	–	–	–	–	–	74	1,201	976	–	19	45	–
Guam	–	20	–	–	–	–	–	–	112	143	–	2	–	–
Puerto Rico	6	250	–	–	2	–	–	60	1,252	1,941	9	389	365	29
Virgin Islands	–	1	–	–	–	–	–	9	129	94	–	13	9	–

*Delayed reports: Tuberculosis: Me. 1
Typhoid: (1973) Wisc. 1
Syphilis: Me. 4, Ohio delete 1, Ky. delete 1

Week No. 23

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING JUNE 8, 1974

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

Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
NEW ENGLAND	662	394	182	44	24	28
Boston, Mass.	204	104	65	19	10	9
Bridgeport, Conn.	38	19	17	1	–	4
Cambridge, Mass.	32	24	5	1	1	4
Fall River, Mass.	26	18	7	–	1	1
Hartford, Conn.	53	29	19	2	2	–
Lowell, Mass.	32	24	5	2	1	5
Lynn, Mass.	12	10	1	1	–	–
New Bedford, Mass.	26	14	11	1	–	–
New Haven, Conn.	44	29	10	1	2	–
Providence, R. I.	54	29	12	7	3	2
Somerville, Mass.	8	7	1	–	–	1
Springfield, Mass.	61	38	14	3	3	2
Waterbury, Conn.	31	18	9	3	1	–
Worcester, Mass.	41	31	6	3	–	–
MIDDLE ATLANTIC	2,817	1,741	725	184	88	100
Albany, N. Y.	57	33	17	4	2	1
Allentown, Pa.	22	10	9	2	1	2
Buffalo, N. Y.	156	95	42	7	5	19
Camden, N. J.	34	23	8	2	1	2
Elizabeth, N. J.	27	18	5	2	1	1
Erie, Pa.	37	24	13	–	–	1
Jersey City, N. J.	48	32	11	3	1	–
Newark, N. J.	52	14	21	7	7	1
New York City, N. Y.†	1,433	896	347	111	35	42
Paterson, N. J.	38	24	11	1	1	1
Philadelphia, Pa.	399	229	116	21	21	7
Pittsburgh, Pa.	183	111	57	5	8	7
Reading, Pa.	27	20	6	1	–	2
Rochester, N. Y.	116	80	17	10	3	5
Schenectady, N. Y.	22	15	7	–	–	–
Scranton, Pa.	48	33	10	4	1	3
Syracuse, N. Y.	72	48	19	4	–	2
Trenton, N. J. *	---	---	---	---	---	---
Utica, N. Y.	23	18	4	–	1	2
Yonkers, N. Y.	23	18	5	–	–	2
EAST NORTH CENTRAL	2,512	1,451	687	150	133	76
Akron, Ohio	64	42	15	5	1	–
Canton, Ohio	40	20	12	3	3	2
Chicago, Ill.	642	371	173	44	36	14
Cincinnati, Ohio	147	94	37	6	7	3
Cleveland, Ohio	183	90	56	12	15	3
Columbus, Ohio	92	55	19	8	5	5
Dayton, Ohio	123	76	31	5	4	1
Detroit, Mich.	355	181	116	24	24	10
Evansville, Ind.	57	34	19	2	1	3
Fort Wayne, Ind.	58	33	16	1	3	5
Gary, Ind.	18	10	6	1	–	3
Grand Rapids, Mich.	57	41	8	–	5	5
Indianapolis, Ind.	163	93	40	12	12	2
Madison, Wis.	54	28	18	3	2	9
Milwaukee, Wis.	133	79	38	5	4	1
Peoria, Ill.	44	26	9	4	3	1
Rockford, Ill.	60	36	18	5	–	5
South Bend, Ind.	33	19	11	1	2	3
Toledo, Ohio	121	80	28	4	5	1
Youngstown, Ohio	68	43	17	5	1	–
WEST NORTH CENTRAL	736	458	178	39	30	31
Des Moines, Iowa	50	31	11	4	2	–
Duluth, Minn.	22	13	7	–	1	2
Kansas City, Kans.	32	16	9	4	2	1
Kansas City, Mo.	113	76	26	7	2	2
Lincoln, Nebr.	41	33	6	1	1	3
Minneapolis, Minn.	96	57	21	4	8	5
Omaha, Nebr.	80	57	17	3	1	1
St. Louis, Mo.	197	109	58	11	9	15
St. Paul, Minn.	72	49	14	4	3	1
Wichita, Kans.	33	17	9	1	1	1
SOUTH ATLANTIC	1,324	715	402	117	45	36
Atlanta, Ga.	145	72	45	20	4	1
Baltimore, Md.	275	146	89	21	7	6
Charlotte, N. C.	61	33	13	8	3	–
Jacksonville, Fla.	97	60	21	8	4	–
Miami, Fla.	128	64	44	12	6	4
Norfolk, Va.	70	32	30	5	1	2
Richmond, Va.	83	46	24	9	1	6
Savannah, Ga.	31	15	8	4	2	2
St. Petersburg, Fla.	76	62	11	3	–	3
Tampa, Fla.	86	51	22	6	3	5
Washington, D. C.	239	116	87	18	11	7
Wilmington, Del.	33	18	8	3	3	–
EAST SOUTH CENTRAL	720	391	221	42	31	27
Birmingham, Ala.	132	57	47	6	15	–
Chattanooga, Tenn.	58	39	12	3	2	5
Knoxville, Tenn.	50	31	15	2	–	1
Louisville, Ky.	128	63	44	9	5	6
Memphis, Tenn.	178	99	56	10	8	2
Mobile, Ala.	47	31	9	4	–	–
Montgomery, Ala.	48	29	13	3	1	8
Nashville, Tenn.	79	42	25	5	–	5
WEST SOUTH CENTRAL	1,100	618	288	79	41	29
Austin, Tex.	23	12	6	2	–	1
Baton Rouge, La.	52	31	12	4	–	1
Corpus Christi, Tex.	38	25	10	1	–	–
Dallas, Tex.	141	73	40	7	10	2
El Paso, Tex.	49	28	11	6	–	3
Fort Worth, Tex.	83	52	22	3	3	1
Houston, Tex.	261	138	80	22	8	5
Little Rock, Ark.	69	34	25	3	4	3
New Orleans, La.	136	77	22	13	7	4
San Antonio, Tex.	143	79	35	14	6	–
Shreveport, La.	55	38	14	–	1	6
Tulsa, Okla.	50	31	11	4	2	3
MOUNTAIN	560	307	140	45	33	20
Albuquerque, N. Mex.	61	24	22	9	2	6
Colorado Springs, Colo.	31	21	6	1	–	2
Denver, Colo.	142	80	31	7	18	4
Las Vegas, Nev.	30	13	9	4	3	–
Ogden, Utah	21	16	5	–	–	2
Phoenix, Ariz.	106	62	21	9	4	–
Pueblo, Colo.	28	14	9	1	2	1
Salt Lake City, Utah	65	35	15	8	2	3
Tucson, Ariz.	76	42	22	6	2	2
PACIFIC	1,735	1,087	440	100	61	32
Berkeley, Calif.	24	11	12	–	–	–
Fresno, Calif.	52	32	9	6	2	–
Glendale, Calif.	17	14	2	1	–	–
Honolulu, Hawaii	42	26	10	4	1	–
Long Beach, Calif.	122	75	35	5	6	3
Los Angeles, Calif.	539	361	123	32	9	11
Oakland, Calif.	80	53	19	4	1	2
Pasadena, Calif.	28	25	1	1	1	1
Portland, Oreg.	138	91	35	2	8	1
Sacramento, Calif.	59	34	16	4	1	3
San Diego, Calif.	147	85	35	11	7	–
San Francisco, Calif.	166	93	43	18	7	2
San Jose, Calif.	42	27	12	2	1	–
Seattle, Wash.	181	110	52	3	13	5
Spokane, Wash.	55	27	21	6	1	3
Tacoma, Wash.	43	23	15	1	3	1
Total	12,166	7,162	3,263	800	486	379
Expected Number	11,833	6,874	3,223	797	432	329

†Delayed report for week ending June 1, 1974
*Data not available

HEMOPHILUS INFLUENZAE MENINGITIS – Continued

pulse of 160/min, a respiratory rate of 84/min, and a blood pressure of 96/60. The anterior fontanelle was full, and the right tympanic membrane was dull. The Brudzinski sign was present, and Kernig's sign was absent. A lumbar puncture (LP) on the day of admission showed 630 white blood cells (WBC)/mm^3 with 65% polymorphonuclear leukocytes (polys) and a protein of 300 mg% (cerebrospinal fluid [CSF] sugar not available). Initial therapy was 200,000 units of aqueous penicillin intravenously (IV) every 4 hours. Twelve hours later, a CSF gram stain showed gram-negative pleomorphic rods, and the CSF culture grew *Hemophilus influenzae* b.

The patient was placed on ampicillin 400 mg/kg/day IV but responded poorly. The patient began having left-sided seizures on April 10 and was begun on phenobarbital 7 mg/kg/day. Sub-dural taps on April 10 and April 12 were negative. After 3 days a repeat LP showed 16,000 WBC/mm^3 with 100% polys, and a culture again grew *H. influenzae* b. Treatment was changed to chloramphenicol 100 mg/kg/day IV. He improved during 10 days of therapy with chloramphenicol, and an LP on April 20 showed 5 WBC/mm^3, a glucose of 41 mg%, and a protein of 76 mg%.

Thirty hours after stopping chloramphenicol therapy, the child developed a fever. An LP showed 2,492 WBC/mm^3 with 87% polys. CSF glucose was 95 mg%, and protein was 109 mg%. Gram-negative pleomorphic rods were seen on microscopic examination, but the culture was negative. The child was treated with chloramphenicol for 14 more days, and a repeat LP at the end of therapy on May 6 showed 20 WBC/mm^3, a CSF glucose of 50 mg%, and a protein of 31 mg%.

Forty-eight hours later, May 8, the patient again developed fever and was found to have mastoiditis and purulent otitis media. Culture of an ear aspirate yielded a *Hemophilus* organism (typing information not available). The patient was treated with oral sulfonamide and penicillin, and bilateral myringotomy tubes were inserted. On May 15 he again had fever, and an LP showed 125 WBC/mm^3 with 49% polys, a glucose of 50, and a protein of 25. Culture of the CSF was negative. He was restarted on chloramphenicol therapy at 150 mg/kg/day. Therapy was discontinued on June 1, and the patient has continued to do well, with no recurrent fever. At CDC, using the original isolate, the minimum inhibitory concentration (MIC) of ampicillin was 16 μg/ml, and the ampicillin disc test showed a zone of inhibition less than 21 mm.

Case 2

On May 1, 1974, a 9-month-old female was admitted to a Tallahassee, Florida, hospital after 24 hours of irritability, fever, anorexia, and vomiting. Physical examination showed a lethargic child who was irritable and who had a temperature of 106°F, a pulse rate of 160/min, and a respiratory rate of 38/min. The anterior fontanelle was full, the tympanic membranes were injected, and Brudzinski and Kernig's signs were present. The remainder of the physical examination was normal. An LP produced cloudy spinal fluid with 3,582 WBC/mm^3 with 92% polys, a CSF sugar of 66 mg%, and a protein of 360 mg%. The CSF culture grew *H. influenzae* b.

Initial therapy was ampicillin 400 mg/kg/day IV. The child responded well to ampicillin and was afebrile 48 hours after admission. She continued to do well, and after 9 days of IV therapy and 3 days of intramuscular therapy, the LP showed 6 WBC with a CSF sugar of 45 mg%, a protein of 15 mg%, and a negative culture. The initial culture was reported as resistant to ampicillin by the disc method. This was confirmed at CDC where MIC levels of 16 μg/ml and zone size of less than 21 mm were reported.

(Reported by Roger A. Knapp, M.D., CPT, MC, Beaumont Army Hospital, El Paso, Texas; M.S. Dickerson, M.D., State Epidemiologist, Texas State Department of Health; Thomas Peele, M.D., private physician, Tallahassee, Florida; Chester L. Nayfield, M.D., State Epidemiologist, Florida Division of Health; the Antimicrobial Unit, Bureau of Laboratories, CDC; and 2 EIS Officers.)

Editorial Note

In studies of CSF ampicillin levels attainable during treatment of *H. influenzae* meningitis, concentrations of ampicillin as high as 7 μg/ml of CSF were measured during the initial 3 days of treatment, using a regimen of 150 mg/kg/day of ampicillin intravenously in 4 hourly doses *(1)*. The levels were highest when the spinal fluid protein was greater than 200 mg% and the WBC count in the spinal fluid was greater than 1,000 cells/mm^3 *(1)*. Both of these conditions were observed in the second patient whose therapy was 400 μg/kg/day of ampicillin. Of the 14 *H. influenzae* b isolates studied at CDC with MICs of 8 μg/ml or greater, only 1 was from a patient (Case 2) who responded to ampicillin therapy.

Reference

1. Thrupp LD, Leedom JM, Ivler D, et al: Ampicillin levels in the cerebrospinal fluid during treatment of bacterial meningitis. In Antimicrobial Agents and Chemotherapy, edited by Hobby GL. Ann Arbor, American Society for Microbiology, 1965, pp 206-213

SURVEILLANCE SUMMARY

AGRANULOCYTOSIS ASSOCIATED WITH CHINESE HERB MEDICATIONS – California, Minnesota

During the period April-June 1974, 5 cases of agranulocytosis were diagnosed in the San Francisco Bay area; 1 patient died. An additional case of agranulocytosis was reported from Minneapolis. All 6 persons had been taking Chinese herb medications.

Pills obtained from open containers belonging to each of the first 4 California patients were determined to contain phenylbutazone by mass spectroscopy, thin-layer chromatography, or both, at the School of Pharmacy, University of California at San Francisco. Food and Drug Administration (FDA) laboratories have confirmed the presence of phenylbutazone in levels of at least 25 mg per pill and aminopyrine in amounts ranging from 3.0 to 7.7 mg per pill. The products were not labeled as containing phenylbutazone or aminopyrine.

The herb medications, produced by the Nan Lien Pharmaceutical Company, Hong Kong, and received in the United States from distributors in Hong Kong and Taiwan, are round

AGRANULOCYTOSIS – Continued

black or brown pills packaged in various types of bottles and boxes. The products are distributed under at least 6 different labels, and much of the labeling is in Chinese.

The products used by the patients who developed agranulocytosis were reportedly purchased in small local Chinese grocery stores. Preliminary surveys suggest that these products are available in many Chinese food stores in at least Los Angeles, Minneapolis, New York City, San Francisco, and Seattle.

On May 30 FDA issued a press release informing state officials of the problem. In addition, approximately 400,000 pills have been detained by customs authorities in San Francisco in response to a series of FDA import alerts issued since May 30. Canadian authorities have approximately 661,000 pills under detention in Canada.

(Reported by James Chin, M.D., Chief, Infectious Disease Section, California State Department of Health; D.S. Fleming, M.D., State Epidemiologist, Minnesota State Department of Health; and the Food and Drug Administration.)

INTERNATIONAL NOTES
QUARANTINE MEASURES

The following changes should be made in the "Supplement – Vaccination Certificate Requirements for International Travel," MMWR, Vol. 22, No. 17:

IRAN

Cholera – add to note: Asia: Bangladesh

YUGOSLAVIA

Smallpox – in the note delete the last sentence. Add: However, a Certificate will be required from travelers arriving from these countries if any part is infected with smallpox.

LIBYAN ARAB REPUBLIC

Cholera – Delete all information.

The Morbidity and Mortality Weekly Report, circulation 36,000, 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 outbreaks or case investigations of current interest to health officials.

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DHEW Publication No. (CDC) 74-8017