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WEEKLY REPORT

For Week Ending January 12, 1974

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

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EPIDEMIOLOGIC NOTES AND REPORTS

PLASMAPHERESIS-ASSOCIATED HEPATITIS – Ohio, Florida, Oklahoma

In 1973, 2 hepatitis-B outbreaks associated with plasmapheresis occurred in donors at commercial plasma centers in Akron, Ohio, and Orlando, Florida. In addition, a small outbreak among plasmapheresis staff occurred in Tulsa, Oklahoma. The epidemiologic aspects of these outbreaks are summarized below.

Ohio

In an Akron plasmapheresis center, 50 cases of clinical hepatitis occurred in plasma donors who denied drug abuse or contact with known hepatitis cases (Figure 1). This number represents 1% of all individuals who donated in the first 10 months of 1973. Blood specimens from 41 of 46 ill persons that were tested were positive for hepatitis-B antigen (HBAg). A marked increase in HBAg-positive plasma donations also occurred in 1973. Eleven of the 50 cases were in donors who had also given blood at a commercial blood and plasmapheresis center in Akron.

The Akron plasma center was using a plasmapheresis system that consisted of 6 separate components (blood bags

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

DISEASE	2nd WEEK ENDING		MEDIAN 1969-1973	CUMULATIVE, FIRST 2 WEEKS		
	January 12, 1974	January 13, 1973		1974	1973	MEDIAN 1969-1973
Aseptic meningitis	32	50	40	68	73	73
Brucellosis	1	–	–	2	1	1
Chickenpox	2,474	4,081	– – –	3,943	6,876	– – –
Diphtheria	1	–	4	10	2	4
Encephalitis:						
Primary: Arthropod-borne and unspecified	17	8	15	26	19	31
Post-Infectious	–	2	2	2	3	6
Hepatitis, Viral:						
Type B	139	138	138	241	241	250
Type A	693	877	1,057	1,277	1,622	2,003
Type unspecified	125			203		
Malaria	1	3	45	4	6	90
Measles (rubeola)	382	630	650	624	986	1,199
Meningococcal infections, total	24	27	67	49	51	115
Civilian	24	23	62	49	46	108
Military	–	4	3	–	5	5
Mumps	1,547	1,334	2,303	2,335	2,440	3,927
Pertussis	23	– – –	– – –	31	– – –	– – –
Rubella (German measles)	158	333	377	290	468	621
Tetanus	–	–	–	3	–	–
Tuberculosis, new active	516	406	– – –	890	735	– – –
Tularemia	2	1	2	5	4	4
Typhoid fever	5	2	6	11	7	10
Typhus, tick-borne (Rky. Mt. spotted fever)	4	1	–	9	1	1
Venereal Diseases:						
Gonorrhea	16,517	14,371	– – –	28,982	25,216	– – –
Syphilis, primary and secondary	412	571	– – –	689	940	– – –
Rabies in animals	30	51	51	68	83	101

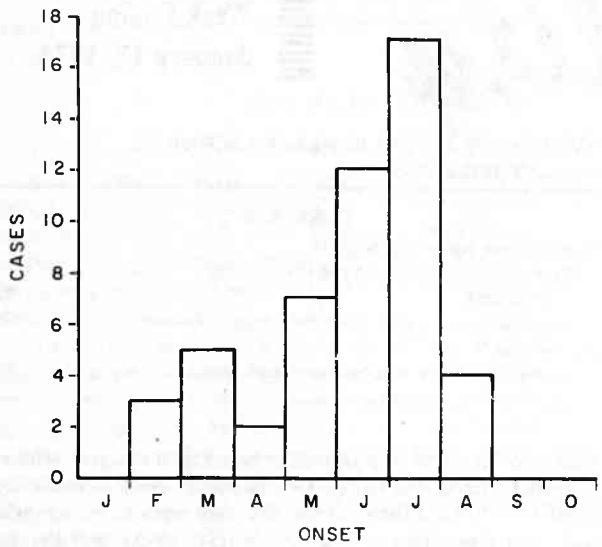
TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax: Fla.-1	1	Poliomyelitis, total:	–
Botulism:	–	Paralytic:	–
Congenital rubella syndrome:	2	Psittacosis:	–
Leprosy: Calif.-1, NYC-1	3	Rabies in man:	–
Leptospirosis: *	–	Trichinosis: Va.-1	4
Plague:	–	Typhus, murine:	–

* Delayed Reports (1973): Leptospirosis: Miss.-1

HEPATITIS – Continued

Figure 1
50 PLASMAPHERESIS-ASSOCIATED HEPATITIS CASES
BY MONTH OF ONSET
AKRON, OHIO – 1973



and tubing). Wet, blood-soaked rags were used continually to balance the centrifuge. Except for the manager, who is a licensed medical technologist, the personnel performing plasmapheresis had had no formal medical or nursing training. Handwashing facilities and practices were inadequate. Three of 12 personnel were HBAg-positive, and 2 others had SGOT elevations.

In early June, the plasmapheresis center began using a plasmapheresis system with a greatly reduced number of components and improved plasmapheresis techniques. Since September, the number of hepatitis cases reported has decreased greatly.

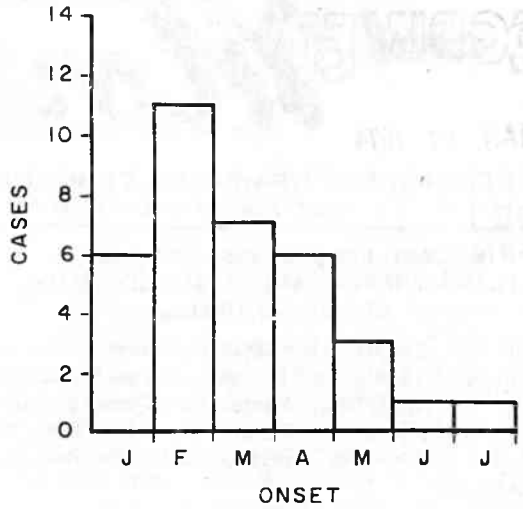
(Reported by John Morley, M.D., Health Commissioner, Paul Carpenter, D.V.M., Environmental Health Officer, Akron City Health Department; Frank Holtzhauer, Communicable Disease Investigator, John H. Ackerman, M.D., Deputy Director, Ohio Department of Health; and an EIS Officer.)

Florida

In 1973, 35 cases of clinical hepatitis in donors were recognized at an Orlando plasmapheresis center (Figure 2); 27 of 33 patients tested were HBAg-positive. These cases represented 0.7% of all donors who gave plasma at the center in 1973 and 22% of all hepatitis cases reported to the Orange County Health Department in 1973. A marked increase in HBAg-positive donations occurred in February 1973, the peak of the outbreak. In comparison, a second plasma center in Orlando had no increases in HBAg-positive donations or hepatitis cases in the same period.

Twenty-eight of 32 cases with known dates of donation had given plasma in the 3-month period November 1972-January 1973. As in Akron, handwashing was inadequate at the Orlando center, and multiple component systems were also in use. Plasmapheresis center personnel recalled several instances when gross blood contamination resulted from broken blood bags or leaking connections between components of the system.

Figure 2
35 PLASMAPHERESIS-ASSOCIATED HEPATITIS CASES
BY MONTH OF ONSET
ORLANDO, FLORIDA – 1973



(Reported by Wilfred N. Sisk, M.D., Director, Orange County Health Department; E. Charlton Prather, M.D., Chief, Bureau of Preventable Diseases, Florida State Division of Health; Elias Anzola Perez, M.D., PAHO Fellow, assigned to the Viral Diseases Branch, Bureau of Epidemiology, CDC; and an EIS Officer.)

Oklahoma

In September, the Tulsa City-County Health Department reported that 3 employees of a commercial plasmapheresis center had recently been discharged from local hospitals following treatment for acute viral hepatitis. The 3 employees (2 centrifuge operators and the manager) developed classical signs and symptoms of viral hepatitis with SGOT or SGPT values greater than 2 times upper limits of normal. Blood specimens from 2 of the 3 patients were HBAg-positive by solid phase radioimmunoassay technique.

All 3 ill employees denied a history of blood transfusions, parenteral drug abuse, or intimate contact with persons with hepatitis during the 6-month period prior to onset of their illness. All 3 had donated blood products at the center several months before their illness (mean 173 days).

A review of the center's HBAg testing records for 1972-73 revealed that there had been no increase in the incidence of HBAg-positive donations during 1973. However, centrifuge accidents (e.g. donor bag bursting during centrifugation) were significantly more common during the months of May, June, and July ($p < .01$). One such accident, which occurred on June 29, involved a unit of HBAg-positive blood. The 3 staff members with hepatitis cleaned the centrifuge following the accident and developed symptoms an average of 63 days later (range 58-70 days). The donor whose bag broke in the centrifuge admitted to previous intravenous use of cocaine and had been hospitalized with HBAg-positive hepatitis 2 weeks after the accident occurred. No other documented cases of hepatitis occurred among persons donating at the center in 1973.

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JANUARY 12, 1974 AND JANUARY 13, 1973 (2nd 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	32	1	2,474	1	10	17	8	–	139	693	125	1	4
NEW ENGLAND	2	–	524	–	–	–	1	–	3	32	15	–	–
Maine *	–	–	22	–	–	–	–	–	–	1	2	–	–
New Hampshire*	–	–	30	–	–	–	–	–	1	9	–	–	–
Vermont	–	–	25	–	–	–	–	–	–	5	1	–	–
Massachusetts	1	–	234	–	–	–	1	–	–	3	12	–	–
Rhode Island	1	–	119	–	–	–	–	–	–	5	–	–	–
Connecticut	–	–	94	–	–	–	–	–	2	9	–	–	–
MIDDLE ATLANTIC	7	–	121	–	–	5	–	–	23	81	15	–	–
Upstate New York	2	–	37	–	–	1	–	–	8	40	8	–	–
New York City	3	–	72	–	–	2	–	–	1	14	–	–	–
New Jersey	–	–	NN	–	–	–	–	–	5	4	5	–	–
Pennsylvania	2	–	12	–	–	2	–	–	9	23	2	–	–
EAST NORTH CENTRAL	7	–	966	–	–	5	3	–	27	124	13	–	–
Ohio	3	–	182	–	–	5	–	–	21	27	–	–	–
Indiana	–	–	158	–	–	–	–	–	–	6	–	–	–
Illinois	1	–	–	–	–	–	–	–	–	10	–	–	–
Michigan	3	–	226	–	–	–	3	–	6	80	13	–	–
Wisconsin	–	–	400	–	–	–	–	–	–	1	–	–	–
WEST NORTH CENTRAL	1	–	188	–	–	1	–	–	14	12	11	–	–
Minnesota	–	–	13	–	–	–	–	–	2	4	–	–	–
Iowa *	–	–	155	–	–	–	–	–	–	4	–	–	–
Missouri*	1	–	5	–	–	1	–	–	1	–	11	–	–
North Dakota	–	–	14	–	–	–	–	–	–	–	–	–	–
South Dakota	–	–	–	–	–	–	–	–	11	–	–	–	–
Nebraska	–	–	1	–	–	–	–	–	–	1	–	–	–
Kansas*	–	–	–	–	–	–	–	–	–	3	–	–	–
SOUTH ATLANTIC	3	1	220	–	–	3	1	–	13	95	25	1	1
Delaware	–	–	5	–	–	–	–	–	–	2	–	–	–
Maryland	–	–	7	–	–	1	1	–	2	9	3	–	–
District of Columbia	–	–	7	–	–	–	–	–	2	3	–	1	1
Virginia	1	–	21	–	–	–	–	–	–	7	–	–	–
West Virginia	1	–	170	–	–	–	–	–	1	8	–	–	–
North Carolina *	1	–	NN	–	–	1	–	–	3	23	15	–	–
South Carolina	–	–	10	–	–	–	–	–	1	7	3	–	–
Georgia *	–	1	–	–	–	–	–	–	–	3	–	–	–
Florida	–	–	–	–	–	1	–	–	4	33	4	–	–
EAST SOUTH CENTRAL	1	–	32	–	–	–	–	–	3	40	5	–	–
Kentucky*	–	–	13	–	–	–	–	–	1	8	5	–	–
Tennessee	–	–	NN	–	–	–	–	–	2	27	–	–	–
Alabama	–	–	6	–	–	–	–	–	–	2	–	–	–
Mississippi	1	–	13	–	–	–	–	–	–	3	–	–	–
WEST SOUTH CENTRAL	6	–	184	–	–	–	1	–	1	134	2	–	–
Arkansas	1	–	2	–	–	–	1	–	–	6	–	–	–
Louisiana	1	–	NN	–	–	–	–	–	1	7	2	–	–
Oklahoma	–	–	5	–	–	–	–	–	–	13	–	–	–
Texas	4	–	177	–	–	–	–	–	–	108	–	–	–
MOUNTAIN	–	–	94	–	7	–	–	–	1	35	7	–	–
Montana	–	–	57	–	–	–	–	–	–	6	–	–	–
Idaho	–	–	–	–	–	–	–	–	–	1	1	–	–
Wyoming	–	–	–	–	–	–	–	–	–	–	–	–	–
Colorado	–	–	21	–	–	–	–	–	–	–	–	–	–
New Mexico	–	–	16	–	7	–	–	–	1	18	1	–	–
Arizona *	–	–	–	–	–	–	–	–	–	7	4	–	–
Utah	–	–	–	–	–	–	–	–	–	3	1	–	–
Nevada	–	–	–	–	–	–	–	–	–	–	–	–	–
PACIFIC	5	–	145	1	3	3	2	–	54	140	32	–	3
Washington *	1	–	134	1	3	–	–	–	3	12	9	–	–
Oregon	1	–	3	–	–	–	–	–	11	11	3	–	–
California	3	–	–	–	–	2	2	–	40	114	20	–	3
Alaska *	–	–	5	–	–	1	–	–	–	1	–	–	–
Hawaii	–	–	3	–	–	–	–	–	–	2	–	–	–
Guam *	–	–	–	–	–	–	–	–	–	–	–	–	–
Puerto Rico	–	–	–	–	–	–	–	–	1	1	–	–	–
Virgin Islands	3	–	53	–	–	–	–	–	–	4	–	–	–

* Delayed Reports (1973):
Aseptic meningitis: Guam 1
Brucellosis: Kans. 1, Alaska 1
Chickenpox: Me. 32, N.H. 11, Ga. 1, Wash. 56, Guam 1
Encephalitis, primary: Iowa 1, Ky. 1, Wash. 1
Encephalitis, post infectious: Ky. delete 1
Hepatitis B: Mo. 1, Wash. 1, Alaska 1, Guam 1
Hepatitis A: Me. 3, N.H. 3, Mo. 1, Kans. 28, N.C. delete 1, Ga. 15, Ariz. 14, Wash. 10, Alaska 4, Guam 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JANUARY 12, 1974 AND JANUARY 13, 1973 (2nd 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	382	624	986	24	49	51	1,547	2,335	23	158	290	3
NEW ENGLAND	50	75	382	1	5	5	186	355	–	9	14	–
Maine *	2	3	–	–	–	–	38	70	–	–	–	–
New Hampshire *	33	43	57	–	1	1	2	38	–	–	1	–
Vermont	–	–	–	–	–	–	1	2	–	1	1	–
Massachusetts	8	12	195	1	1	3	33	66	–	4	6	–
Rhode Island	7	17	4	–	2	–	69	103	–	2	3	–
Connecticut	–	–	126	–	1	1	43	76	–	2	3	–
MIDDLE ATLANTIC	99	182	107	3	6	8	160	200	–	18	26	1
Upstate New York	1	1	7	–	–	–	37	57	–	9	10	–
New York City	10	22	64	3	4	2	31	41	–	5	9	–
New Jersey	55	111	27	–	1	3	62	65	–	4	4	1
Pennsylvania	33	48	9	–	1	3	30	37	–	–	3	–
EAST NORTH CENTRAL	112	183	252	1	4	3	617	803	10	53	97	–
Ohio	59	102	6	–	2	3	200	277	–	6	27	–
Indiana	6	7	27	–	–	–	39	54	–	10	15	–
Illinois	20	29	112	–	–	–	25	39	6	3	9	–
Michigan	20	31	59	1	2	–	287	334	4	29	37	–
Wisconsin	7	14	48	–	–	–	66	99	–	5	9	–
WEST NORTH CENTRAL	7	11	28	–	–	1	49	74	–	1	2	–
Minnesota	1	1	3	–	–	–	–	–	–	–	–	–
Iowa	1	2	25	–	–	1	24	33	–	–	–	–
Missouri	1	4	–	–	–	–	15	30	–	1	2	–
North Dakota	3	3	–	–	–	–	–	–	–	–	–	–
South Dakota	1	1	–	–	–	–	–	–	–	–	–	–
Nebraska *	–	–	–	–	–	–	10	11	–	–	–	–
Kansas	–	–	–	–	–	–	–	–	–	–	–	–
SOUTH ATLANTIC	8	13	24	5	8	8	86	155	12	14	21	–
Delaware	–	–	–	3	3	–	3	6	–	1	1	–
Maryland	–	–	–	1	1	4	2	3	–	–	–	–
District of Columbia	–	–	–	–	–	–	4	10	–	–	–	–
Virginia	2	2	5	1	3	1	16	16	–	–	–	–
West Virginia	3	4	4	–	–	–	48	89	12	6	13	–
North Carolina	–	–	2	–	–	3	NN	NN	–	1	1	–
South Carolina	2	6	2	–	–	–	–	–	–	–	–	–
Georgia *	1	1	1	–	–	–	–	–	–	2	2	–
Florida	–	–	10	–	1	–	13	31	–	4	4	–
EAST SOUTH CENTRAL	–	2	9	2	3	6	121	230	–	27	35	1
Kentucky	–	2	2	–	–	3	4	26	–	–	3	–
Tennessee	–	–	4	1	2	2	102	171	–	23	25	1
Alabama	–	–	–	1	1	1	5	22	–	1	4	–
Mississippi	–	–	3	–	–	–	10	11	–	3	3	–
WEST SOUTH CENTRAL	2	8	43	7	11	4	99	149	1	4	7	–
Arkansas	–	–	1	–	2	–	1	2	–	1	1	–
Louisiana	–	1	–	1	1	–	–	20	–	–	–	–
Oklahoma	2	2	1	2	3	–	2	9	–	1	4	–
Texas	–	5	41	4	5	4	96	118	1	2	2	–
MOUNTAIN	69	70	27	1	1	7	109	126	–	11	55	–
Montana	67	67	–	–	–	–	23	24	–	5	45	–
Idaho	–	–	2	–	–	–	54	54	–	–	–	–
Wyoming	–	–	–	–	–	–	–	–	–	–	–	–
Colorado	–	1	7	–	–	2	18	21	–	–	2	–
New Mexico	2	2	15	–	–	–	14	27	–	5	7	–
Arizona	–	–	3	–	–	2	–	–	–	–	–	–
Utah	–	–	–	1	1	1	–	–	–	–	–	–
Nevada	–	–	–	–	–	2	–	–	–	1	1	–
PACIFIC	35	80	114	4	11	9	120	243	–	21	33	1
Washington *	2	2	77	–	1	1	34	56	–	9	13	–
Oregon	–	–	15	2	3	2	70	126	–	3	4	–
California	33	78	20	2	7	6	6	42	–	9	15	1
Alaska	–	–	–	–	–	–	10	19	–	–	–	–
Hawaii	–	–	2	–	–	–	–	–	–	–	1	–
Guam *	–	–	–	–	–	–	–	–	–	–	–	–
Puerto Rico	1	8	75	–	–	–	3	7	–	–	–	–
Virgin Islands	3	3	–	–	–	–	2	2	–	–	–	–

* Delayed Reports (1973): Measles: Me. 1, Ga. 2, Wash. 1
Mumps: Me. 14, N.H. 4, Neb. 4, Ga. 1, Wash. 5, Guam 9
Rubella: Me. 3, Ga. 1, Wash. 4

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JANUARY 12, 1974 AND JANUARY 13, 1973 (2nd 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	516	890	5	5	11	4	9	16,517	28,982	25,216	412	689	940	68
NEW ENGLAND	23	41	–	–	–	–	–	536	797	567	8	15	15	–
Maine *	3	3	–	–	–	–	–	44	84	50	–	–	1	–
New Hampshire*	1	1	–	–	–	–	–	21	25	20	–	–	1	–
Vermont	–	–	–	–	–	–	–	6	9	4	–	–	1	–
Massachusetts	19	34	–	–	–	–	–	250	361	205	3	5	8	–
Rhode Island	–	3	–	–	–	–	–	31	52	88	–	–	1	–
Connecticut	–	–	–	–	–	–	–	184	266	200	5	10	3	–
MIDDLE ATLANTIC	48	106	–	3	6	4	9	2,093	3,730	3,206	81	132	198	2
Upstate New York	–	–	–	–	–	–	–	307	388	933	4	4	8	1
New York City	22	59	–	3	6	–	–	891	1,844	1,269	52	90	131	–
New Jersey	26	47	–	–	–	–	–	354	683	433	7	17	30	–
Pennsylvania	–	–	–	–	–	4	9	541	815	571	18	21	29	1
EAST NORTH CENTRAL	110	154	–	–	–	–	–	2,091	3,354	3,254	31	40	38	5
Ohio*	58	58	–	–	–	–	–	897	1,433	1,296	13	14	5	–
Indiana	10	14	–	–	–	–	–	192	234	273	3	6	12	1
Illinois	17	43	–	–	–	–	–	154	382	471	4	7	4	1
Michigan *	25	39	–	–	–	–	–	606	948	963	9	11	17	–
Wisconsin	–	–	–	–	–	–	–	242	357	251	2	2	–	3
WEST NORTH CENTRAL	7	16	1	–	–	–	–	689	1,155	1,614	2	15	4	25
Minnesota	3	8	–	–	–	–	–	116	284	366	2	3	3	8
Iowa	1	3	–	–	–	–	–	–	2	133	–	–	–	7
Missouri *	1	1	1	–	–	–	–	378	468	791	–	10	–	–
North Dakota	–	1	–	–	–	–	–	12	23	20	–	–	–	5
South Dakota	1	1	–	–	–	–	–	47	73	83	–	–	–	–
Nebraska *	–	1	–	–	–	–	–	23	79	109	–	–	1	–
Kansas *	1	1	–	–	–	–	–	113	226	112	–	2	–	5
SOUTH ATLANTIC	102	159	1	1	1	–	–	4,320	7,780	7,422	173	242	377	7
Delaware	3	6	–	–	–	–	–	70	127	99	1	8	–	–
Maryland	16	20	–	1	1	–	–	421	720	591	33	35	67	–
District of Columbia *	5	5	–	–	–	–	–	389	597	607	10	18	26	–
Virginia	16	23	1	–	–	–	–	443	829	687	21	32	115	3
West Virginia *	3	7	–	–	–	–	–	60	92	120	–	–	1	2
North Carolina	17	19	–	–	–	–	–	486	1,088	881	8	8	18	–
South Carolina	17	36	–	–	–	–	–	482	1,221	970	20	34	22	–
Georgia *	–	8	–	–	–	–	–	841	1,481	1,453	13	25	67	1
Florida	25	35	–	–	–	–	–	1,128	1,625	2,014	67	82	61	1
EAST SOUTH CENTRAL	37	72	1	–	–	–	–	1,265	1,984	1,990	38	49	85	11
Kentucky *	8	13	1	–	–	–	–	243	292	263	8	10	43	6
Tennessee	11	27	–	–	–	–	–	542	935	906	17	20	15	3
Alabama	10	24	–	–	–	–	–	200	302	340	5	9	8	2
Mississippi *	8	8	–	–	–	–	–	280	455	481	8	10	19	–
WEST SOUTH CENTRAL	73	148	2	–	–	–	–	2,591	4,767	2,410	35	68	66	9
Arkansas	12	17	–	–	–	–	–	164	277	348	4	4	8	2
Louisiana	7	15	1	–	–	–	–	658	691	495	6	9	22	1
Oklahoma	6	9	–	–	–	–	–	229	347	265	4	5	4	2
Texas	48	107	1	–	–	–	–	1,540	3,452	1,302	21	50	32	4
MOUNTAIN	14	29	–	–	–	–	–	631	1,136	844	3	8	35	–
Montana	–	–	–	–	–	–	–	33	76	74	–	–	–	–
Idaho	–	–	–	–	–	–	–	56	92	68	–	–	1	–
Wyoming	–	1	–	–	–	–	–	20	26	11	1	1	1	–
Colorado*	–	–	–	–	–	–	–	201	364	219	1	1	8	–
New Mexico	–	9	–	–	–	–	–	141	178	111	–	–	7	–
Arizona *	13	18	–	–	–	–	–	160	301	238	1	3	17	–
Utah	–	–	–	–	–	–	–	17	26	38	–	–	–	–
Nevada	1	1	–	–	–	–	–	3	73	85	–	3	1	–
PACIFIC	102	165	–	1	4	–	–	2,301	4,279	3,909	41	120	122	9
Washington *	12	12	–	1	1	–	–	137	314	404	–	–	–	–
Oregon	–	1	–	–	–	–	–	200	298	323	3	4	1	–
California	81	139	–	–	3	–	–	1,854	3,433	2,962	37	115	111	9
Alaska *	–	–	–	–	–	–	–	47	118	93	–	–	8	–
Hawaii	9	13	–	–	–	–	–	63	116	127	1	1	2	–
Guam *	–	–	–	–	–	–	–	–	–	33	–	–	–	–
Puerto Rico	4	14	–	–	–	–	–	63	112	95	8	30	14	2
Virgin Islands	–	–	–	–	–	–	–	1	1	8	–	–	–	–

* Delayed Reports (1973): Tuberculosis: Me. delete 2, N.H. delete 2, Ohio delete 1, D.C. 12, Ky. 18, Colo. delete 5, Alaska 7
Tularemia: Kansas 1, Miss. 2
Typhoid fever: Mo. 1
Gonorrhea: Neb. 44, Guam 5
Syphilis: Wash. 12
Rabies: Mich. 1, W.Va. 1, Ga. 1, Ariz. 1

Week No. 2

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING JANUARY 12, 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	670	424	179	34	13	48
Boston, Mass.	173	102	43	14	4	17
Bridgeport, Conn.	35	27	7	1	–	2
Cambridge, Mass.	26	20	3	2	–	3
Fall River, Mass.	25	17	7	–	–	1
Hartford, Conn.	50	32	11	6	1	3
Lowell, Mass.	35	24	10	1	–	3
Lynn, Mass.	23	10	12	–	–	1
New Bedford, Mass.	30	22	5	–	–	2
New Haven, Conn.	67	39	18	5	2	1
Providence, R. I.	62	39	17	2	4	9
Somerville, Mass.	12	7	4	1	–	1
Springfield, Mass.	42	29	12	1	–	4
Waterbury, Conn.	34	23	9	1	1	–
Worcester, Mass.	56	33	21	–	1	1
MIDDLE ATLANTIC	3,338	2,097	837	213	90	120
Albany, N. Y.	48	30	12	3	2	–
Allentown, Pa.	29	20	4	4	–	1
Buffalo, N. Y.	159	100	45	7	4	–
Camden, N. J.	47	31	10	5	1	1
Elizabeth, N. J.	38	25	9	4	–	3
Erie, Pa.	36	26	8	–	–	1
Jersey City, N. J.	58	39	17	2	–	1
Newark, N. J.	80	29	28	10	9	3
New York City, N. Y.†	1,662	1,079	379	107	37	67
Paterson, N. J.	45	32	7	5	–	1
Philadelphia, Pa.	496	274	159	30	19	9
Pittsburgh, Pa.	213	114	62	16	13	13
Reading, Pa.	44	30	12	2	–	2
Rochester, N. Y.	93	61	25	3	1	5
Schenectady, N. Y.	32	25	4	2	–	2
Scranton, Pa.	42	30	9	1	2	2
Syracuse, N. Y.	97	68	24	4	1	3
Trenton, N. J.	53	38	8	5	–	2
Utica, N. Y.	32	24	6	1	1	3
Yonkers, N. Y.	34	22	9	2	–	1
EAST NORTH CENTRAL	2,904	1,710	789	198	111	86
Akron, Ohio	66	45	11	5	4	–
Canton, Ohio	36	24	9	–	1	1
Chicago, Ill.	729	412	203	64	26	17
Cincinnati, Ohio	195	110	58	12	8	5
Cleveland, Ohio	231	119	72	22	9	6
Columbus, Ohio	134	80	44	2	4	1
Dayton, Ohio	115	59	32	9	9	–
Detroit, Mich.	411	224	120	30	19	9
Evansville, Ind.	55	38	15	1	–	3
Fort Wayne, Ind.	63	41	15	5	1	4
Gary, Ind.	20	10	7	2	1	4
Grand Rapids, Mich.	74	51	17	3	3	10
Indianapolis, Ind.	211	129	58	13	7	5
Madison, Wis.	51	30	12	2	2	9
Milwaukee, Wis.	158	109	32	7	5	1
Peoria, Ill.	48	29	11	4	2	1
Rockford, Ill.	45	30	14	1	–	3
South Bend, Ind.	49	27	15	5	1	2
Toledo, Ohio	147	99	29	8	5	2
Youngstown, Ohio	66	44	15	3	4	3
WEST NORTH CENTRAL	961	651	216	40	31	41
Des Moines, Iowa	86	59	14	5	3	2
Duluth, Minn.	29	22	5	–	2	1
Kansas City, Kans.	44	24	16	2	–	2
Kansas City, Mo.	142	96	34	6	4	2
Lincoln, Nebr.	38	17	10	–	1	1
Minneapolis, Minn.	120	79	25	4	7	3
Omaha, Nebr.	110	70	27	5	6	1
St. Louis, Mo.	247	172	55	11	5	19
St. Paul, Minn.	95	71	17	4	2	4
Wichita, Kans.	60	41	13	3	1	6
SOUTH ATLANTIC	1,555	866	448	131	45	77
Atlanta, Ga.	116	64	30	12	1	–
Baltimore, Md.	413	229	127	30	9	10
Charlotte, N. C.	78	39	19	9	2	–
Jacksonville, Fla.	118	58	42	6	4	2
Miami, Fla.	120	73	27	12	3	10
Norfolk, Va.	89	45	27	9	5	9
Richmond, Va.	162	87	59	10	5	22
Savannah, Ga.	37	20	13	1	3	8
St. Petersburg, Fla.	98	80	9	5	3	4
Tampa, Fla.	86	47	27	5	4	7
Washington, D. C.	209	108	59	31	5	4
Wilmington, Del.	29	16	9	1	1	1
EAST SOUTH CENTRAL	922	507	270	63	44	46
Birmingham, Ala.	146	86	39	9	8	1
Chattanooga, Tenn.	71	41	21	6	–	6
Knoxville, Tenn.	64	44	13	3	1	1
Louisville, Ky.	199	117	63	10	5	16
Memphis, Tenn.	156	58	60	14	11	1
Mobile, Ala.	75	50	15	5	3	1
Montgomery, Ala.	64	27	26	5	4	7
Nashville, Tenn.	147	84	33	11	12	13
WEST SOUTH CENTRAL	1,446	802	411	95	69	45
Austin, Tex.	66	31	24	3	5	1
Baton Rouge, La.	54	33	15	4	–	3
Corpus Christi, Tex.	40	20	15	4	1	–
Dallas, Tex.	220	122	63	15	11	5
El Paso, Tex.	35	15	13	3	4	4
Fort Worth, Tex.	109	65	30	5	4	4
Houston, Tex.	304	163	79	24	15	6
Little Rock, Ark.	76	39	19	5	7	3
New Orleans, La.	191	113	60	8	6	2
San Antonio, Tex.	166	91	48	14	5	4
Shreveport, La.	103	62	22	8	5	8
Tulsa, Okla.	82	48	23	2	6	5
MOUNTAIN	610	366	156	44	19	22
Albuquerque, N. Mex.	74	52	13	3	3	7
Colorado Springs, Colo.	31	20	7	3	–	1
Denver, Colo.	121	74	30	9	2	2
Las Vegas, Nev.	19	11	7	–	–	2
Ogden, Utah	17	14	3	–	–	2
Phoenix, Ariz.	143	69	48	11	9	3
Pueblo, Colo.	39	25	7	4	1	1
Salt Lake City, Utah	65	34	14	7	4	2
Tucson, Ariz.	101	67	27	7	–	2
PACIFIC	2,076	1,328	513	112	58	61
Berkeley, Calif.	20	16	2	1	–	–
Fresno, Calif.	69	35	18	6	6	1
Glendale, Calif.	36	31	3	–	1	–
Honolulu, Hawaii *	66	36	18	5	4	2
Long Beach, Calif.	131	81	42	4	3	4
Los Angeles, Calif.	641	420	159	35	10	9
Oakland, Calif.	95	58	25	5	–	1
Pasadena, Calif.	46	34	6	2	2	1
Portland, Oreg.	171	124	29	7	6	8
Sacramento, Calif.	65	41	15	3	5	1
San Diego, Calif.	143	79	39	11	2	5
San Francisco, Calif.	195	125	43	14	10	6
San Jose, Calif.	56	38	12	3	1	2
Seattle, Wash.	214	129	60	11	8	7
Spokane, Wash.	81	54	23	4	–	9
Tacoma, Wash.	47	27	19	1	–	5
Total	16,492	10,043	4,314	1,037	534	605
Expected Number	13,160	7,846	3,538	826	465	520

*Estimate based on average percent of divisional total

†Delayed report for week ending January 5, 1974

HEPATITIS – Continued

(Reported by Betty L. Conrad, M.D., Chief, Communicable Diseases, Tulsa City-County Health Department; Stanley W. Ferguson, Ph.D., State Epidemiologist, Oklahoma State Department of Health; Elias Anzola Perez, M.D., PAHO Fellow, assigned to the Viral Diseases Branch, Bureau of Epidemiology, CDC; and an EIS Officer.)

Editorial Note

Most commercial plasma donors are unemployed males in the 20- to 40-year age group – a population with a high prevalence of HBAg positivity. The combination of HBAg-positive blood contamination, improper equipment, and poor techniques was probably responsible for the acquisition of hepatitis-B by plasma donors. The cases in Oklahoma probably represent a point source outbreak of hepatitis-B, and epidemiologic evidence suggests that HBAg was transmitted to these 3 persons by nonparenteral means. Nonparenteral transmission of HBAg has been implicated in several other outbreaks of hepatitis-B among medical and paramedical personnel (e.g. nurses, laboratory technicians, hemodialysis employees, etc.) (*1-5*).

With the widespread emergence of plasma centers throughout the United States, it is imperative that proper standards of plasmapheresis technique and attention to correct use of equipment be practiced at all times. Donor surveillance and screening programs should become an integral part of the operation of plasmapheresis centers and quite possibly the question "Are you a plasma donor?" should be a routine part of community hepatitis surveillance efforts.

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INTERNATIONAL NOTES

CHANGE IN CHOLERA VACCINATION REQUIREMENTS

Last year, 70 countries had some type of cholera vaccination requirement for travelers. Effective January 1, 1974, the International Health Regulations were modified by the Twenty-sixth World Health Assembly of the World Health Organization to eliminate the requirement for cholera vaccination for international travelers. All countries except 20 have indicated compliance. These countries may be classified as follows:

I. Countries that continue to require evidence of cholera vaccination from travelers arriving from cholera-infected areas or from all countries any parts of which are infected:

Australia	Madagascar
Christmas Island	Malta
Egypt	Namibia
Greece	Nauru
Guinea	Saudi Arabia
Iraq	Swaziland
Libyan Arab Republic	Thailand
Yugoslavia	

II. **Iran** requires evidence of cholera vaccination from travelers arriving from cholera-infected areas **AND** from Afghanistan, Bahrain, Bulgaria, Burma, India, Iraq, Malawi, Malaysia, Pakistan, Philippines, Singapore, Thailand, Tunisia, Viet-Nam. **Italy** requires evidence of cholera vaccination from travelers arriving from all countries any parts of which are infected **AND** from Guinea.

III. Papua-New Guinea requires evidence of cholera vaccination from all travelers except those coming from Oceania.

IV. Burma and India require evidence of cholera vaccination from all travelers departing for any country which requires cholera vaccination certification.

(Reported by the Bacterial Diseases Branch and the Quarantine Branch, Bureau of Epidemiology, CDC.)

CLOSTRIDIUM PERFRINGENS FOOD POISONING – Tennessee

On November 2 and 3, 1973, an outbreak of gastrointestinal illness occurred among the 1,100 employees of a large factory in Murfreesboro, Tennessee, following a special buffet meal served during all 3 work shifts on November 2. A questionnaire to determine the extent of illness was distributed to a random sample of 178 employees. A total of 146 individuals reported illness for an attack rate of 82%; their symptoms included diarrhea (89%), abdominal cramps (86%), nausea (48%), and vomiting (16%). Only 1 person was hospitalized. The median incubation period was 14 hours with a range of 1 to 25 hours. The attack rate was 75% for those on the night shift who ate first, 80% for the day shift, and 94% for the evening shift. Stool specimens were obtained from 20 ill persons; 17 yielded *Clostridium perfringens*, of which 16 were Hobb's type 5.

Further investigation revealed that the buffet meal consisted of turkey, dressing, gravy, green beans, potatoes, fruit salad, relish, rolls with butter, pies, coffee, and soft drinks. Food-specific attack rates implicated the turkey as the vehicle of infection ($p < .01$). Cultures of the left-over turkey subsequently yielded 330,000 colonies of *C. perfringens*, Hobb's type 5, per gm.

In preparation for the meal, 8 whole frozen turkeys and 40 frozen turkey breasts had been purchased by a commercial food service company on October 26 and stored at 38-40° F. On October 30, 4 whole turkeys and 20 breasts were roasted

FOOD POISONING -- Continued

at 375° F for 4 and 2½ hours, respectively. They were then held at room temperature for 2 hours and placed in a walk-in refrigerator. The following day, the turkeys were sliced, placed in steam table pans, and promptly refrigerated. The remaining turkeys and breasts were prepared in the same manner beginning on October 31. On November 2, the day of the buffet, the turkey was warmed in a 250° F oven and on surface burners and was subsequently held in insulated hot boxes for 1-3 hours before distribution.

(Reported by Robert S. Sanders, M.D., Director, Rutherford County Health Department; Adelaide Fields, and Joan Catignani, State Laboratory, Robert H. Hutcheson, Jr., M.D., State Epidemiologist, Tennessee Department of Public Health; and an EIS Officer.)

Editorial Note

The symptoms and incubation period in this outbreak are compatible with *C. perfringens* food poisoning. This etiology is supported by the isolation of organisms of the same serotype from the epidemiologically implicated food and the stools of 16 of 20 ill individuals. The turkey was held at or slightly above room temperature for an excessive period of time during preparation and prior to serving.

C. perfringens was responsible for only 6.6% of foodborne disease outbreaks of confirmed etiology reported to CDC in 1972 (*1*). Confirmation of such outbreaks requires the use of appropriate anaerobic laboratory techniques for the isolation and serotyping of *C. perfringens* from the suspect food and stools of ill individuals (*2*). Since these techniques are not usually performed by many microbiology laboratories, the proportion of foodborne outbreaks caused by *C. perfringens* may actually be much higher than 6.6%.

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1. Center for Disease Control: Foodborne Outbreaks Summary, 1972. Nov 1973
2. Dowell VR, Hawkins TM: Laboratory Methods in Anaerobic Bacteriology. CDC Laboratory Manual, 1973

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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.

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

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