

Morbidity and Mortality



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

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CURRENT TRENDS
THE PUBLIC HEALTH IMPLICATIONS OF HEPATITIS B ANTIGEN
IN HUMAN BLOOD - A REVISED STATEMENT¹

by
The Committee* on Viral Hepatitis
of the

Division of Medical Sciences
NATIONAL ACADEMY OF SCIENCES - NATIONAL RESEARCH COUNCIL

APR 12 1974

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A clearer definition of the significance of viral hepatitis type B as a clinical and public health problem has arisen from the discovery, development, and widespread application of various serologic tests for the presence of an antigen - hepatitis B antigen² - that is associated with the disease. The demonstration of the antigen in the blood of a patient or of an apparently healthy person raises questions not only of the presence of active liver disease, but also of the potential risk of transmission of the infection to others. It is now recognized that, in addition to the well-established parenteral mode of transmission, viral hepatitis type B can be transmitted by other means.

On the basis of information acquired from clinical and epidemiologic studies and from antigen testing programs, the Committee on Viral Hepatitis finds that:

1. A confirmed positive test for antigen is indicative of acute or chronic viral hepatitis type B or of an asymptomatic carrier state.
2. The presence of the antigen in the blood of a patient with acute viral hepatitis type B is usually transient. If it persists for more than 3 months after the onset of illness, the person is likely to become a chronic carrier of the antigen.
3. A chronic carrier of the antigen may or may not have demonstrable evidence of related liver disease.
4. The occurrence of acute hepatitis type B or an asymptomatic carrier state during pregnancy or even during the first 2 months post partum is frequently associated with later infection in the newborn infant.
5. There is clear evidence that carriers should be prohibited from donating blood for transfusion.
6. Although the infectiousness of patients with antigen-positive hepatitis apparently diminishes when the antigen is no

longer demonstrable in the blood, they are currently not accepted as blood donors.

7. There is insufficient knowledge of the extent to which chronic carriers can transmit hepatitis type B by nonparenteral routes. However, close contacts of some categories of chronic carriers, such as renal dialysis patients, are at increased risk for hepatitis type B infection.

8. With respect to risk of transmission to others, there is no indication at this time that routine antigen testing of any specific professional or occupational group should be required.

9. Standard Human Immune Serum Globulin (ISG) is of no demonstrable value in the treatment of carriers.

10. There is insufficient evidence on which to recommend the use of standard ISG for prophylaxis among contacts of hepatitis B patients or carriers. Studies of the possible prophylactic effect of hepatitis B hyperimmune serum globulin are currently in progress.

The Committee recommends that:

1. Persons found to have a positive antigen test in the course of diagnostic studies, blood-donor testing, or testing after known exposure to infection with hepatitis type B be so informed and the test be repeated promptly; and persons with a confirmed positive test be evaluated for the presence of liver disease and followed to determine whether the antigen persists.
2. Persons with antigen-positive hepatitis be considered infectious and control measures be taken with respect to potentially infectious materials, such as blood and blood-contaminated secretions.

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*S. Krugman, New York University School of Medicine, New York, New York, Chairman; M. B. Gregg, Center for Disease Control, Atlanta, Georgia; E. A. Kabat, Columbia University, College of Physicians and Surgeons, New York, New York; R. W. McCollum, Yale University School of Medicine, New Haven, Connecticut; J. L. Melnick, Baylor College of Medicine, Houston, Texas; A. G. Redeker, University of Southern California, Los Angeles, California; and P. E. Taylor, Laboratory Centre for Disease Control, Ottawa, Canada.

¹For original statement, see MMWR, Vol. 21, No. 16, 1972.

²This antigen was originally referred to as Australia antigen.

HEPATITIS B ANTIGEN - Continued

3. Women found to have hepatitis during pregnancy or during the first 2 months post partum be tested for hepatitis B antigen and their infants be tested for hepatitis B antigen at monthly intervals for at least 6 months.

4. Testing for hepatitis B antigen be required of all blood donors.

5. Until more complete knowledge of the significance of the antigen carrier state is acquired, particularly as to its relation to communicability, only routine precautions, such

as those applying to percutaneous routes of potential transmission, be initiated.

6. The effort to obtain more accurate and complete reporting of hepatitis cases - on the basis of serologic test results as well as epidemiologic characteristics - be intensified to improve surveillance on a national basis.

Acknowledgment

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**EPIDEMIOLOGIC NOTES AND REPORTS
FATALITY DUE TO SHIGELLA DYSENTERIAE TYPE 1 - California**

On January 25, 1974, a 2-year-old girl from Venice, California, became ill with fever, diarrhea, and vomiting while on a trip to Jalisco, Mexico, with her family. Her diarrhea rapidly became bloody, and her parents decided to return to the United States for help. On the way back, the girl seemed to improve, however, and she was not taken to the doctor when the family arrived in California on February 1.

By February 3, her symptoms had recurred—even more severe than before—and a pediatrician visited her at home that evening. He found her moderately dehydrated and suffering from a rectal prolapse and sent her to a local hospital.

While being admitted, she had a cardiac arrest and died 5 hours later. A sample of heart blood obtained during the resuscitation subsequently grew *Shigella dysenteriae* type 1 (Shiga bacillus). An autopsy performed by the county coroner's office showed hemorrhagic colitis of the transverse, descending, and rectosigmoid colon, as well as a diffuse non-specific enteritis. The cause of death was listed as cardiovascular collapse due to colitis.

About the same time that this patient became ill, her 3-year-old brother developed similar, but less severe, symptoms. (Continued on page 131)

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

DISEASE	14th WEEK ENDING		MEDIAN 1969-1973	CUMULATIVE, FIRST 14 WEEKS		
	April 6, 1974	April 7, 1973		1974	1973	MEDIAN 1969-1973
Aseptic meningitis	38	44	31	7,461	505	457
Brucellosis	1	4	4	26	26	26
Chickenpox	4,499	6,394	—	52,334	77,334	—
Diphtheria	3	2	2	53	62	57
Encephalitis:						
Primary: Arthropod-borne and unspecified	19	28	20	231	258	271
Post-Infectious	2	5	6	52	55	67
Hepatitis, Viral:						
Type B	170	176	148	2,385	1,996	1,996
Type A	875	871	1,019	11,960	13,671	15,223
Type unspecified	159	—	—	2,235	—	—
Malaria	1	4	30	40	58	636
Measles (rubeola)	817	1,371	1,378	7,967	10,569	11,709
Meningococcal infections, total	49	29	67	465	477	922
Civilian	47	28	51	454	462	781
Military	2	1	10	11	15	92
Mumps	1,615	2,078	2,585	23,632	27,377	33,737
Pertussis	24	—	—	358	—	—
Rubella (German measles)	376	1,465	1,865	4,006	11,194	16,083
Tetanus	—	—	1	12	14	22
Tuberculosis, new active	641	676	—	7,872	8,185	—
Tularemia	1	—	1	27	19	25
Typhoid fever	1	19	4	87	260	66
Typhus, tick-borne (Rky. Mt. spotted fever)	—	3	1	14	10	5
Veneral Diseases:						
Gonorrhea	15,167	14,564	—	222,657	202,878	—
Syphilis, primary and secondary	448	520	—	6,379	6,794	—
Rabies in animals	63	85	88	712	908	1,038

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	2	Poliomyelitis, total:	2
Botulism: *	3	Paralytic:	2
Congenital rubella syndrome: *Calif. 2	24	Psittacosis:	6
Leprosy: Calif. 1, Hawaii 5, Ore. 1, Tex. 1	34	Rabies in man:	—
Leptospirosis:	16	Trichinosis: * N.J. 1	40
Plague:	—	Typhus, murine:	6

*Delayed reports: Botulism: Calif. delete 1
Cong. Rub. Synd.: Texas 1
Trichinosis: Texas 2

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**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING APRIL 6, 1974 AND APRIL 7, 1973 (14th WEEK)**

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1974	1973	1974	1974	1974	1974		
UNITED STATES	38	1	4,499	3	53	19	28	2	170	875	159	1	40
NEW ENGLAND	-	-	761	-	-	1	1	-	3	44	16	-	3
Maine *	-	-	15	-	-	-	-	-	-	7	2	-	-
New Hampshire *	-	-	26	-	-	-	-	-	-	9	-	-	-
Vermont	-	-	64	-	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	247	-	-	1	1	-	2	7	13	-	1
Rhode Island	-	-	121	-	-	-	-	-	1	4	-	-	2
Connecticut	-	-	288	-	-	-	-	-	-	17	1	-	-
MIDDLE ATLANTIC	4	-	181	-	-	2	2	1	31	119	37	1	4
Upstate New York	-	-	78	-	-	1	-	-	3	49	5	-	1
New York City	1	-	90	-	-	-	1	-	5	6	-	1	2
New Jersey	-	-	NN	-	-	-	-	-	12	19	27	-	-
Pennsylvania *	3	-	13	-	-	1	1	1	11	45	5	-	1
EAST NORTH CENTRAL	5	-	1,450	-	-	2	13	1	23	114	14	-	4
Ohio	-	-	204	-	-	1	5	-	-	20	-	-	3
Indiana	3	-	92	-	-	-	1	-	-	20	-	-	-
Illinois	-	-	-	-	-	-	1	1	12	26	13	-	1
Michigan	2	-	663	-	-	1	6	-	7	42	1	-	-
Wisconsin	-	-	491	-	-	-	-	-	4	6	-	-	-
WEST NORTH CENTRAL	7	-	483	-	-	-	1	-	4	18	10	-	1
Minnesota	-	-	-	-	-	-	-	-	1	1	-	-	-
Iowa	-	-	354	-	-	-	1	-	2	3	1	-	-
Missouri	7	-	8	-	-	-	-	-	-	1	5	-	-
North Dakota	-	-	53	-	-	-	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-	-	-	-	4	-	-	1
Nebraska	-	-	23	-	-	-	-	-	1	1	-	-	-
Kansas	-	-	45	-	-	-	-	-	-	8	4	-	-
SOUTH ATLANTIC	4	-	320	-	-	3	6	-	28	169	20	-	8
Delaware	-	-	5	-	-	-	-	-	-	-	-	-	-
Maryland	-	-	6	-	-	1	-	-	4	4	5	-	1
District of Columbia	-	-	8	-	-	-	-	-	2	5	1	-	2
Virginia *	1	-	23	-	-	1	1	-	1	6	2	-	2
West Virginia *	-	-	233	-	-	-	1	-	-	11	-	-	-
North Carolina	-	-	NN	-	-	-	1	-	5	13	3	-	1
South Carolina	-	-	45	-	-	-	1	-	-	4	5	-	-
Georgia	-	-	-	-	-	-	-	-	-	20	-	-	-
Florida	3	-	-	-	-	1	2	-	16	106	4	-	2
EAST SOUTH CENTRAL	2	-	114	-	-	2	-	-	5	55	1	-	-
Kentucky	1	-	95	-	-	1	-	-	-	18	-	-	-
Tennessee	1	-	-	-	-	-	-	-	3	26	-	-	-
Alabama	-	-	10	-	-	-	-	-	-	2	1	-	-
Mississippi	-	-	9	-	-	1	-	-	2	9	-	-	-
WEST SOUTH CENTRAL	7	-	341	-	8	5	1	-	12	100	6	-	3
Arkansas	-	-	4	-	-	-	-	-	1	5	2	-	-
Louisiana *	2	-	NN	-	-	2	1	-	4	1	1	-	1
Oklahoma	-	-	7	-	-	1	-	-	-	7	3	-	1
Texas *	5	-	330	-	8	2	-	-	7	87	-	-	1
MOUNTAIN	-	-	111	-	7	-	-	-	5	99	21	-	1
Montana	-	-	34	-	-	-	-	-	-	18	-	-	-
Idaho	-	-	-	-	-	-	-	-	1	4	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	-	-	31	-	-	-	-	-	2	23	15	-	1
New Mexico	-	-	46	-	6	-	-	-	-	33	1	-	-
Arizona	-	-	-	-	1	-	-	-	2	13	3	-	-
Utah	-	-	-	-	-	-	-	-	-	5	2	-	-
Nevada	-	-	-	-	-	-	-	-	-	3	-	-	-
PACIFIC	9	1	738	3	38	4	4	-	59	157	34	-	16
Washington *	-	-	683	3	35	-	-	-	6	25	15	-	-
Oregon	-	-	1	-	-	1	-	-	5	14	2	-	-
California *	8	1	-	-	1	3	4	-	46	108	14	-	16
Alaska	1	-	3	-	2	-	-	-	1	3	-	-	-
Hawaii	-	-	51	-	-	-	-	-	1	7	3	-	-
Guam *	-	-	-	-	-	-	-	-	-	-	-	-	1
Puerto Rico	-	-	27	-	-	-	-	-	-	-	4	-	-
Virgin Islands	-	-	20	-	-	1	-	-	-	-	-	-	-

*Delayed Reports: Aseptic Meningitis: N.H. 1, Texas 4
 Brucellosis: Calif. 1
 Chickenpox: Me. 3, N.H. 23, Texas 233, Calif. 92, Guam 3
 Diphtheria: Wash. delete 2
 Encephalitis, Primary: W. Va. delete 1, Calif. delete 1, Texas 1
 Encephalitis, Post: Calif. 1
 Hepatitis B: La. delete 1, Texas 12, Guam 1; (1973) Penn. 1
 Hepatitis A: Va. delete 1, Texas 58, Guam 7; (1973) Penn. 3
 Malaria: Texas 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
 FOR WEEKS ENDING APRIL 6, 1974 AND APRIL 7, 1973 (14th 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	817	7,967	10,569	49	465	477	1,615	23,632	24	376	4,006	12
NEW ENGLAND	26	418	4,012	5	26	23	177	3,364	2	31	368	-
Maine *	1	23	14	1	1	-	26	588	-	4	85	-
New Hampshire *	4	191	687	-	4	3	1	135	-	2	10	-
Vermont	3	8	77	-	-	2	-	9	-	-	7	-
Massachusetts	14	118	2,118	-	7	9	24	501	-	16	145	-
Rhode Island	3	49	283	2	6	1	74	1,159	-	-	15	-
Connecticut	1	29	833	2	8	8	52	972	2	9	106	-
MIDDLE ATLANTIC	289	2,993	857	6	56	66	90	1,814	1	44	429	1
Upstate New York	7	48	216	3	25	24	13	367	-	11	94	-
New York City	24	168	480	-	12	13	11	251	1	5	50	-
New Jersey*	252	2,465	79	2	15	14	19	399	-	20	190	1
Pennsylvania	6	312	82	1	4	15	47	797	-	8	95	-
EAST NORTH CENTRAL	337	3,112	3,373	4	49	52	400	6,825	4	84	1,278	-
Ohio	156	1,349	146	1	15	26	53	1,854	-	13	188	-
Indiana	17	100	271	1	3	1	19	540	-	12	323	-
Illinois	46	520	873	-	7	7	29	577	4	8	158	-
Michigan	107	982	1,559	1	16	15	223	2,887	-	32	434	-
Wisconsin	11	161	524	1	8	3	76	967	-	19	175	-
WEST NORTH CENTRAL	12	218	229	3	33	38	53	1,767	1	9	117	2
Minnesota	-	76	14	-	13	-	-	26	-	-	3	-
Iowa	-	7	151	-	5	5	43	1,192	-	-	7	-
Missouri	3	30	12	1	9	19	6	263	1	-	20	2
North Dakota	1	24	28	-	1	3	2	11	-	-	6	-
South Dakota	-	19	-	2	2	3	-	2	-	1	22	-
Nebraska	-	2	1	-	-	4	2	48	-	2	5	-
Kansas	8	60	23	-	3	4	-	225	-	6	54	-
SOUTH ATLANTIC	30	288	314	11	91	81	326	3,753	4	72	382	4
Delaware	-	3	2	-	3	1	2	39	-	2	9	-
Maryland	-	20	-	1	13	15	3	46	-	-	-	-
District of Columbia	-	-	-	-	-	1	1	27	-	-	1	-
Virginia *	-	11	27	2	14	9	32	188	1	4	16	2
West Virginia	-	76	105	1	4	1	140	1,604	-	5	59	-
North Carolina	13	2	4	3	18	17	NN	NN	-	3	34	-
South Carolina *	2	25	25	-	9	7	5	33	2	41	171	-
Georgia	-	1	11	-	4	16	-	-	-	-	2	-
Florida	15	150	140	4	26	14	143	816	1	17	90	2
EAST SOUTH CENTRAL	2	50	308	7	53	47	186	2,344	-	14	253	2
Kentucky	-	37	201	3	24	22	104	909	-	3	81	-
Tennessee	-	1	81	4	24	17	61	1,152	-	3	122	1
Alabama	-	2	-	-	5	4	18	248	-	7	40	-
Mississippi	2	10	26	-	-	4	3	35	-	1	10	1
WEST SOUTH CENTRAL	6	98	404	8	92	75	138	1,611	3	7	132	1
Arkansas	-	4	48	3	8	9	3	94	-	-	7	-
Louisiana*	-	6	41	1	13	12	15	79	-	-	8	-
Oklahoma	-	11	16	-	8	7	-	205	-	-	18	-
Texas *	6	77	299	4	63	47	120	1,233	3	7	99	1
MOUNTAIN	73	337	225	-	11	12	37	633	3	9	176	-
Montana	25	173	5	-	1	2	7	113	-	-	60	-
Idaho	-	44	105	-	1	1	-	135	-	1	6	-
Wyoming	-	3	10	-	-	-	-	4	-	-	-	-
Colorado	3	24	20	-	2	2	19	279	-	4	48	-
New Mexico*	-	37	75	-	2	1	9	127	-	3	32	-
Arizona	-	4	9	-	3	3	-	-	-	-	-	-
Utah	-	-	1	-	1	1	-	3	3	1	7	-
Nevada	45	52	-	-	1	2	2	2	-	-	23	-
PACIFIC	42	453	847	5	54	83	208	2,491	6	106	871	2
Washington	7	35	332	-	7	6	55	940	-	21	206	-
Oregon	-	-	218	1	7	5	47	492	-	5	87	-
California *	29	409	291	4	37	69	100	973	6	80	567	2
Alaska	-	-	-	-	2	3	2	62	-	-	-	-
Hawaii	6	9	6	-	1	-	4	24	-	-	11	-
Guam *	-	1	3	-	-	-	-	131	-	-	1	-
Puerto Rico	32	237	672	-	-	3	31	312	-	-	5	1
Virgin Islands	4	4	-	-	-	-	3	11	-	-	-	1

*Delayed reports: Measles: N.J. delete 4, Va. delete 1, Texas 18
 Meningococcal Infections: N.J. 3, La. delete 1, Texas 7
 Mumps: Me. 7, N.H. 3, Texas 83, Guam 25
 Pertussis: Texas 3

Rubella: N.H. 1, S.C. delete 1, Texas 11, N.M. delete 22,
 Guam 1
 Tetanus: Calif. 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING APRIL 6, 1974 AND APRIL 7, 1973 (14th 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	Cum. 1974	1974	Cum. 1974	1974	Cum. 1974	1974	GONORRHEA		SYPHILIS (Pri. & Sec.)		Cum. 1974	
									1974	Cumulative		1974		Cumulative
1974	1973	1974	1973											
UNITED STATES	641	7,872	27	1	87	-	14	15,167	222,657	202,878	448	6,379	6,794	712
NEW ENGLAND	27	348	-	-	2	-	-	187	5,095	5,399	13	131	187	3
Maine	1	27	-	-	-	-	-	34	412	301	1	11	9	1
New Hampshire	-	11	-	-	-	-	-	10	178	175	-	3	4	-
Vermont	-	3	-	-	-	-	-	15	178	70	-	1	8	-
Massachusetts	19	202	-	-	-	-	-	-	1,913	2,575	4	52	85	-
Rhode Island	-	32	-	-	2	-	-	20	475	626	-	3	6	2
Connecticut	7	73	-	-	-	-	-	108	1,939	1,652	8	61	75	-
MIDDLE ATLANTIC	94	1,338	1	1	17	-	9	2,222	27,390	26,485	104	1,390	1,551	3
Upstate New York*	19	151	1	-	2	-	-	310	5,209	5,913	-	123	82	1
New York City	38	528	-	-	13	-	-	505	11,229	11,170	70	812	983	-
New Jersey*	-	273	-	1	2	-	-	855	4,003	3,499	15	221	261	-
Pennsylvania	37	386	-	-	-	-	9	552	6,949	5,903	19	234	225	2
EAST NORTH CENTRAL	71	1,018	2	-	6	-	-	2,010	29,242	24,185	28	337	412	38
Ohio*	24	302	-	-	1	-	-	737	10,461	7,497	4	67	75	-
Indiana	3	153	-	-	-	-	-	127	3,074	2,962	7	53	104	3
Illinois	26	272	2	-	3	-	-	297	3,669	3,535	7	76	54	2
Michigan	18	291	-	-	2	-	-	568	8,635	7,679	9	111	153	-
Wisconsin	-	-	-	-	-	-	-	281	3,403	2,512	1	30	26	33
WEST NORTH CENTRAL	22	256	8	-	3	-	-	511	11,383	11,745	1	134	79	175
Minnesota	6	43	-	-	2	-	-	175	2,833	2,322	-	15	29	82
Iowa	1	19	-	-	-	-	-	33	1,581	1,526	-	11	10	34
Missouri	9	134	7	-	1	-	-	90	3,260	4,191	1	88	24	5
North Dakota	1	6	-	-	-	-	-	4	193	166	-	-	1	39
South Dakota	1	14	1	-	-	-	-	45	548	582	-	1	1	-
Nebraska	-	10	-	-	-	-	-	76	962	1,188	-	3	1	-
Kansas	4	30	-	-	-	-	-	88	2,006	1,770	-	16	13	15
SOUTH ATLANTIC	130	1,614	2	-	14	-	4	3,784	56,620	52,466	154	2,092	1,962	84
Delaware	1	25	-	-	-	-	-	34	831	729	2	27	21	-
Maryland	21	195	-	-	1	-	1	355	5,221	4,506	23	239	202	-
District of Columbia	5	106	-	-	-	-	-	250	4,278	4,397	13	187	217	-
Virginia	18	205	1	-	1	-	-	372	4,987	4,797	15	266	197	37
West Virginia	8	87	-	-	3	-	-	34	698	832	-	7	9	10
North Carolina	13	272	1	-	-	-	-	302	7,413	7,727	16	224	158	1
South Carolina	15	171	-	-	-	-	-	709	6,685	5,790	14	264	309	2
Georgia	16	188	-	-	-	-	2	634	11,210	9,527	16	208	385	23
Florida	33	365	-	-	9	-	1	1,094	15,297	14,161	55	670	464	11
EAST SOUTH CENTRAL	59	726	6	-	13	-	-	1,382	19,328	17,164	23	344	473	104
Kentucky*	17	167	1	-	7	-	-	190	2,362	2,132	4	76	195	70
Tennessee	14	213	3	-	4	-	-	535	7,598	6,469	8	133	116	24
Alabama	23	230	2	-	2	-	-	259	5,278	4,579	9	70	34	10
Mississippi	5	116	-	-	-	-	-	398	4,090	3,984	2	65	128	-
WEST SOUTH CENTRAL	107	1,072	6	-	6	-	-	2,089	32,501	26,981	49	670	776	185
Arkansas	11	134	2	-	1	-	-	141	3,178	3,657	4	31	57	24
Louisiana*	6	133	1	-	1	-	-	521	6,792	5,659	18	188	214	3
Oklahoma*	5	74	2	-	-	-	-	287	2,687	2,794	2	43	60	33
Texas*	85	731	1	-	4	-	-	1,140	19,844	14,871	25	408	445	125
MOUNTAIN	17	245	2	-	7	-	1	577	8,404	7,683	5	155	214	19
Montana	1	18	-	-	-	-	-	46	505	430	-	-	1	-
Idaho	-	9	-	-	-	-	-	42	544	465	-	1	5	-
Wyoming	-	6	1	-	2	-	-	5	159	121	1	4	8	2
Colorado	-	30	-	-	-	-	1	159	2,409	2,038	-	31	73	-
New Mexico*	7	69	1	-	-	-	-	40	1,149	1,224	-	30	24	7
Arizona	9	81	-	-	5	-	-	189	2,552	2,302	2	47	55	10
Utah	-	12	-	-	-	-	-	39	408	414	-	6	6	-
Nevada	-	20	-	-	-	-	-	57	678	689	2	36	42	-
PACIFIC	114	1,255	-	-	19	-	-	2,405	32,694	30,770	71	1,126	1,140	101
Washington	9	91	-	-	2	-	-	226	2,949	2,801	-	27	41	-
Oregon	9	52	-	-	-	-	-	210	2,717	2,796	1	22	26	8
California	82	990	-	-	17	-	-	1,921	25,612	23,785	69	1,063	1,022	89
Alaska	-	27	-	-	-	-	-	14	700	763	-	1	21	4
Hawaii	14	95	-	-	-	-	-	34	716	625	1	13	30	-
Guam*	-	13	-	-	-	-	-	-	52	87	-	-	-	-
Puerto Rico	22	178	-	-	1	-	-	59	769	1,119	21	257	203	20
Virgin Islands	-	-	-	-	-	-	-	7	77	56	-	9	7	-

* Delayed reports: Tuberculosis: Ky. 10, Okla 10, Texas 57; (1973) Ohio delete 2
 Typhoid: Texas 1; (1973) N.M. delete 1
 Gonorrhea: N.J. delete 1463, La. delete 1, Texas 1164, Guam 9
 Syphilis: Upstate N.Y. delete 6, La. delete 1, Texas 39
 Rabies: Ky. 7, Texas 13

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING APRIL 6, 1974

(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	719	470	180	27	24	37	SOUTH ATLANTIC	1,358	780	397	104	31	68
Boston, Mass.	166	91	46	12	9	8	Atlanta, Ga.	133	63	47	9	7	5
Bridgeport, Conn.	40	29	10	1	—	1	Baltimore, Md.	377	221	110	27	7	11
Cambridge, Mass.	41	29	9	2	1	8	Charlotte, N. C.	63	30	18	10	—	1
Fall River, Mass.	35	26	7	1	—	—	Jacksonville, Fla.	79	45	24	7	1	1
Hartford, Conn.	57	33	18	2	4	—	Miami, Fla.	120	80	24	8	2	5
Lowell, Mass.	37	27	9	1	—	1	Norfolk, Va.	72	33	25	9	2	6
Lynn, Mass.	23	16	7	—	—	—	Richmond, Va.	95	60	26	5	1	12
New Bedford, Mass.	30	22	6	—	2	2	Savannah, Ga.	33	19	10	4	—	5
New Haven, Conn.	44	25	12	1	3	—	St. Petersburg, Fla.	109	87	16	3	2	3
Providence, R. I.	67	36	20	5	2	7	Tampa, Fla.	83	43	27	8	2	8
Somerville, Mass.	18	13	5	—	—	1	Washington, D. C.	143	69	56	10	6	6
Springfield, Mass.	59	49	8	1	—	6	Wilmington, Del.	51	30	14	4	1	5
Waterbury, Conn.	39	29	7	1	2	1	EAST SOUTH CENTRAL	696	394	194	39	27	39
Worcester, Mass.	63	45	16	—	1	2	Birmingham, Ala.	156	86	50	5	9	3
MIDDLE ATLANTIC	3,347	2,090	849	193	104	184	Chattanooga, Tenn.	57	22	23	5	2	8
Albany, N. Y.	56	34	11	4	5	1	Knoxville, Tenn.	32	22	6	1	1	1
Allentown, Pa.	33	26	5	1	—	7	Louisville, Ky.	97	54	27	4	6	10
Buffalo, N. Y.	156	92	38	9	8	20	Memphis, Tenn.	163	88	46	13	3	3
Camden, N. J.	37	16	15	3	2	2	Mobile, Ala.	38	23	10	3	—	2
Elizabeth, N. J.	44	28	10	4	2	2	Montgomery, Ala.	45	29	11	2	—	4
Erie, Pa.	39	23	14	1	—	3	Nashville, Tenn.	108	70	21	6	6	8
Jersey City, N. J.	71	48	12	3	7	2	WEST SOUTH CENTRAL	1,111	638	308	80	40	37
Newark, N. J.	76	39	22	9	5	8	Austin, Tex.	33	18	7	8	—	3
New York City, N. Y. †	1,697	1,084	407	106	45	101	Baton Rouge, La.	46	31	7	5	1	1
Paterson, N. J.	55	36	14	2	1	5	Corpus Christi, Tex.	32	19	10	1	1	—
Philadelphia, Pa.	510	303	138	31	16	5	Dallas, Tex.	177	105	55	6	4	2
Pittsburgh, Pa.	176	97	59	5	6	9	El Paso, Tex.	46	23	13	4	2	7
Reading, Pa.	26	22	3	—	1	—	Fort Worth, Tex.	94	44	39	4	4	1
Rochester, N. Y.	127	81	31	7	3	7	Houston, Tex.	227	130	58	21	8	8
Schenectady, N. Y.	31	20	9	2	—	—	Little Rock, Ark.	47	24	13	3	4	1
Scranton, Pa.	41	26	13	1	1	2	New Orleans, La.	130	74	37	11	5	3
Syracuse, N. Y.	54	38	14	1	—	1	San Antonio, Tex.	138	73	36	14	6	4
Trenton, N. J.	48	27	17	3	1	6	Shreveport, La.	47	35	9	—	2	1
Utica, N. Y.	24	20	2	1	1	1	Tulsa, Okla.	94	62	24	3	3	6
Yonkers, N. Y.	46	30	15	—	—	2	MOUNTAIN	609	359	151	40	26	32
EAST NORTH CENTRAL	2,708	1,622	727	168	108	78	Albuquerque, N. Mex.	60	31	15	5	3	7
Akron, Ohio	82	55	13	6	3	—	Colorado Springs, Colo.	31	21	4	2	1	8
Canton, Ohio	36	16	14	3	1	—	Denver, Colo.	147	78	46	7	15	6
Chicago, Ill.	725	422	197	53	30	19	Las Vegas, Nev.	24	6	11	3	—	1
Cincinnati, Ohio	162	104	43	4	8	1	Ogden, Utah	17	13	2	—	—	1
Cleveland, Ohio	233	135	74	13	7	4	Phoenix, Ariz.	151	84	40	12	3	1
Columbus, Ohio	132	81	33	11	5	5	Pueblo, Colo.	28	20	4	2	2	5
Dayton, Ohio	103	55	35	3	7	3	Salt Lake City, Utah	63	44	12	5	2	1
Detroit, Mich.	376	212	107	28	13	11	Tucson, Ariz.	88	62	17	4	—	2
Evansville, Ind.	45	28	13	2	1	3	PACIFIC	1,690	1,071	406	95	52	49
Fort Wayne, Ind.	47	28	12	3	4	3	Berkeley, Calif.	14	10	3	1	—	—
Gary, Ind.	40	17	13	3	3	5	Fresno, Calif.	64	39	13	2	8	—
Grand Rapids, Mich.	42	28	11	3	—	5	Glendale, Calif.	32	27	3	1	—	2
Indianapolis, Ind.	159	91	44	11	10	2	Honolulu, Hawaii	63	34	18	4	6	1
Madison, Wis.	37	22	11	—	1	6	Long Beach, Calif.	97	56	31	7	2	—
Milwaukee, Wis.	151	104	26	11	5	5	Los Angeles, Calif.	529	340	129	28	10	18
Peoria, Ill.	51	27	15	2	5	—	Oakland, Calif.	79	56	12	5	2	1
Rockford, Ill.	42	28	10	2	1	—	Pasadena, Calif.	33	24	6	2	1	1
South Bend, Ind.	34	22	10	—	—	2	Portland, Oreg.	127	74	30	10	1	4
Toledo, Ohio	130	94	22	8	2	2	Sacramento, Calif.	71	36	17	5	10	2
Youngstown, Ohio	81	53	24	2	2	2	San Diego, Calif.	103	73	20	2	2	2
WEST NORTH CENTRAL	790	495	187	49	23	30	San Francisco, Calif.	191	118	49	12	2	9
Des Moines, Iowa	47	33	8	4	2	—	San Jose, Calif.	45	27	8	6	2	2
Duluth, Minn.	27	15	10	—	1	4	Seattle, Wash.	154	101	45	5	3	5
Kansas City, Kans.	49	30	13	1	2	2	Spokane, Wash.	54	33	15	2	2	1
Kansas City, Mo.	134	87	30	9	5	3	Tacoma, Wash.	34	23	7	3	1	1
Lincoln, Nebr.	36	24	7	2	2	3	Total	13,028	7,919	3,399	795	435	554
Minneapolis, Minn.	92	60	20	1	3	7	Expected Number	12,481	7,349	3,411	807	427	458
Omaha, Nebr.	81	45	18	8	3	—							
St. Louis, Mo.	227	141	56	16	5	5							
St. Paul, Minn.	68	45	17	4	—	4							
Wichita, Kans.	29	15	8	4	—	2							

†Delayed report for week ending March 30, 1974

SHIGELLA DYSENTERIAE – Continued

toms. On February 4, he was hospitalized at a different local hospital and begun on intravenous fluids. Culture of a stool specimen from him revealed no pathogen, and he did not receive antibiotics. He was discharged on February 9.

Other family contacts—the parents and an uncle—have been asymptomatic, and follow-up rectal swab cultures on the entire family were negative for pathogens.

(Reported by Ralph R. Sachs, M.D., Deputy Director, Ichiro Kamei, M.D., Chief, Division of Acute Communicable Diseases, Los Angeles Community Health Services; Thomas T. Noguchi, M.D., Chief Medical Examiner, Los Angeles County; S. Benson Werner, M.D., Bureau of Epidemiology, California State Department of Health; and an EIS Officer.)

TURTLE-ASSOCIATED RECURRENT SALMONELLA MENINGITIS – Ohio

In February 1970, a 1-month-old infant was admitted to a hospital in Cincinnati, Ohio, with a 1-day history of fever, anorexia, and severe lethargy. Lumbar puncture showed purulent spinal fluid with 6,400 white blood cells, protein 735 mg%, and glucose 8 mg%. *Salmonella enteritidis* was isolated from stool and spinal fluid specimens. The baby was treated for 10 days with intramuscular ampicillin and kanamycin plus 3 injections of intrathecal kanamycin. After therapy he was afebrile and alert, and lumbar puncture showed 6 white cells and negative cultures.

One week after discharge the child was readmitted after having fever, severe lethargy, and 3 generalized convulsions. Spinal fluid was again purulent, and blood and spinal fluid specimens grew *S. enteritidis*. After 2 weeks of intravenous chloramphenicol therapy, the baby was alert and afebrile, and a lumbar puncture showed 70 white cells but negative cultures.

Three days after discontinuing chloramphenicol, the baby again spiked high fever and had purulent spinal fluid which grew salmonella. Intravenous chloramphenicol was restarted, but ventricular fluid remained purulent 3 days later.

Editorial Note

This is the first fatality due to *S. dysenteriae* type 1 reported in a U.S. citizen since the resurgence of this disease in Central America and Mexico beginning in 1968. Unlike other types of shigellosis, the disease caused by this strain is often associated with septicemia. This probably explains the frequent disseminated intravascular coagulation and high mortality that occur in untreated or inadequately treated cases and underscores the need for early diagnosis and prompt treatment (1).

Reference

1. Weissman JB, Marton KI, Lewis JN, Friedmann CTH, and Gangarosa, EJ: Impact in the United States of the Shiga dysentery pandemic of Central America and Mexico: A review of surveillance data through 1972. *J Infect Dis* 129:218-223, 1974

A ventricular reservoir was inserted, and the baby received a 6-week course of intravenous and intraventricular chloramphenicol. When the child was 5 months of age, a ventriculo-peritoneal shunt was inserted because of his increasing head circumference. Since then he has done well and at age 4 is walking, talking, and has no apparent residua.

Epidemiologic investigation revealed that the family owned 2 pet turtles that had been purchased 1 year prior to the baby's illness. Both turtles had positive anal swab cultures for *S. enteritidis* after the baby's illness was diagnosed. Although the baby had had no direct turtle contact, his siblings, ages 2 and 4, often played with the turtles and also had frequent contact with the infant. No family members had been sick before the infant's illness, but the father became ill with acute salmonella gastroenteritis shortly thereafter. Other family members had negative stool specimens.

(Reported by William Schubert, M.D., Chief of Staff, Cincinnati Children's Hospital; Taylor Kramer, Communicable Disease Investigator, and John H. Ackerman, M.D., Deputy Director, Ohio Department of Health.)

FOLLOW-UP ON HAMSTER-ASSOCIATED LCM INFECTION – United States

Since the previous article on human lymphocytic choriomeningitis (LCM) infection associated with hamsters (MMWR, Vol. 23, No. 12), an additional 42 cases have been reported to CDC, for a total of 93 cases in 7 states: California (29), Florida (14), Massachusetts (6), Minnesota (1), Nevada (1), New Jersey (4), and New York (38). Date of onset was available for 17 cases. Onset ranged from mid-December 1973 through late March 1974, with 10 cases occurring in January; the ages of those affected ranged from 7 to 42.

Of the 14 hamster breeders supplying the Aquarium Supply Company, Harrison, New Jersey (a national hamster distributor), 2 did not supply hamsters during the involved time period. Of the 12 breeders who did furnish hamsters, 11 sent samples of their breeding stock to CDC to be tested; approximately 520 hamsters from each of 8 breeders were negative for LCM by the fluorescent antibody (FA) test, and hamsters from the other 3 breeders are now being tested.

The last breeder had no breeder stock, but 45 7-week-old hamsters that have been tested were FA negative. This is the same breeder (from Birmingham, Alabama) who was previously reported (MMWR, Vol. 23, No. 13) to have LCM-positive juvenile hamsters from a sample obtained on March

25 and LCM-negative juveniles from a sample obtained on March 4. These data suggest that LCM-positive hamsters were distributed intermittently from this breeder.

This breeder's distribution has been local for 1-2 years and national (through the Aquarium Supply Company) from December 4, 1973, to March 22, 1974. No animals have been sold locally by this breeder since April 1 or nationally since March 22. Since hamsters are usually sold by the retailer within 7 days after they are received, it is unlikely that any hamsters from the Birmingham breeder are still available in retail stores. Of all hamsters distributed by the Aquarium Supply Company, less than 1% originated from the Birmingham breeder.

This week, CDC informed all state health departments of these findings and offered them epidemiologic and laboratory support. In addition, the following recommendations were made to the state health departments:

1. Persons with an illness suggestive of LCM who own hamsters purchased between December 4, 1973, and April 1, 1974, from retail stores supplied by the Aquarium Supply Company should seek medical care immediately. After local or state health departments have been contacted, the hamsters

LCM INFECTION — Continued

should be destroyed through appropriate facilities such as animal shelters.

2. It should be made certain that stores purchasing hamsters from the Aquarium Supply Company (primarily or secondarily) have no hamsters in stock that were shipped before March 25, 1974.

3. All litter, bedding, water bottles, cages, and other materials that have been in contact with hamsters from the Aquarium Supply Company should be decontaminated (1) or destroyed.

4. Persons with an illness suggestive of LCM who have had contact with other hamsters — i.e., those distributed during this time period from sources other than the Aquarium Supply Company — should have serologic tests performed on themselves and the hamsters.

5. The public should be apprised of the risk of purchasing hamsters during this time period from stores supplied by the Aquarium Supply Company.

(Reported by Richard W. Emmons, M.D., M.P.H., Ph.D., Viral and Rickettsial Diseases Laboratory and Infectious Diseases Section, and James Chin, M.D., M.P.H., State Epidemiologist, California State Department of Health; Chester L. Nayfield, M.D., State Epidemiologist, Florida Division of

Health; George E. Waterman, M.D., Assistant Director, and Nicholas J. Fiumara, M.D., Director, Communicable Diseases Division, Massachusetts Department of Public Health; D. S. Fleming, M.D., Director, Division of Personal Health Services and State Epidemiologist, Minnesota State Department of Health; Leah Ziskin, M.D., M.P.H., Program Coordinator, Communicable Disease Control Program, Martin Goldfield, M.D., Assistant Commissioner, Division of Laboratories and Epidemiology, and Ronald Altman, M.D., State Epidemiologist, New Jersey State Department of Health; John Woodall, M.D., Ph.D., and Rudolph Deibel, M.D., Director, Arbovirus Laboratory, Division of Laboratories and Research, and Alan R. Hinman, M.D., Assistant Commissioner for Epidemiology and Preventive Health Services, New York State Department of Health; the Viral Pathology Section, Virology Division, Bureau of Laboratories, and the Viral Diseases Division, Bureau of Epidemiology, CDC; and 4 EIS Officers.)

Reference

1. Wilsnack RE: Lymphocytic choriomeningitis, virus of laboratory rodents. National Cancer Institute Monograph No. 20, 1966, p 77

Erratum, Vol. 23, No. 12, p. 110

In the article, "Contamination of Blood-Culture Medium — Kentucky, Maryland," paragraph 3, line 2, lot number 595-647 should read 595-890.

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

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

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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Attn: Editor
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