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MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Lack of Transmission of Hepatitis B to Humans after Oral Exposure to Hepatitis B Surface Antigen-Positive Saliva

The possibility that cardiopulmonary resuscitation (CPR) training manikins act as fomites in the transmission of viral hepatitis B by contact with saliva positive for hepatitis B surface antigen (HBsAg) has recently been reviewed (*1,2*). No cases of hepatitis B have been reported in the literature as a result of using manikins that have been used by persons with hepatitis B; however, the role of saliva in the transmission of hepatitis B has not been well defined. Two studies (*3,4*) have documented the transmission of hepatitis B to gibbons and chimpanzees after subcutaneous or intravenous injections of saliva containing HBsAg. One of the studies also attempted to transmit hepatitis B by nasal or oral exposure of gibbons with saliva containing HBsAg, but failed (*3*). Two recent investigations of hepatitis B exposure in Minnesota suggest that transmission of hepatitis B to humans after oral contact with HBsAg-positive saliva is unlikely.

The first exposure involved 22 employees of a Minneapolis hospital who had participated in a CPR training program 8 days before the onset of clinical hepatitis B in one of the students. The student was a resident in surgery at the time of the training program. At the time of illness, his serum and saliva were positive for HBsAg by radioimmunoassay. His saliva was negative when tested for occult blood. His serum, when tested by rheophoresis, was also found to be positive for hepatitis B e antigen (HBeAg).

The other 21 hospital employees in the course included 16 nurses, a clinical laboratory technician, a nuclear medicine technician, a pharmacist, a respiratory therapist, and an emergency medical technician. The training program included 2 all-day classes with intensive practice sessions on 5 different manikins. Students rotated freely from manikin to manikin and all acknowledged using a manikin after it had been used by the resident. Ten students also participated in "2-rescuer CPR"(i.e., 2 students rotating the duties of forced respiration and forced cardiac compression on the same manikin) with the resident.

Manikin heads were washed with water and rinsed with 70% isopropyl alcohol after every practice session. They were not disassembled. After every use, the manikin's face and inside mouth area were wiped with a clean absorbent material wetted with 70% isopropyl alcohol. However, during the practice of 2-rescuer CPR, the manikin was not cleaned between students.

Members of the class were tested for the presence of HBsAg and antibody to hepatitis B surface antigen (anti-HBs) 2 weeks, 6 weeks, and 6 months after training. At the 2-week interval, 21 individuals were negative for HBsAg, and 1 was positive for anti-HBs. At 6 weeks and 6 months, only 17 individuals were tested. All were negative for both HBsAg and anti-HBs, and none reported any illness during that time suggestive of viral hepatitis. The other 4 individuals (including the person with existing anti-HBs) ceased employment

Hepatitis – Continued

with the hospital between 2 and 6 weeks after the training. These individuals were contacted at 6 months, by phone, and reported no illness during that time. One of the nurses in the training program was also the spouse of the resident. She did not develop HBsAg or anti-HBs during the 6 months after training.

The second investigation involved 12 grade school and junior high school students from a rural area of Minnesota who had exposures to HBsAg-positive saliva via musical instruments during the 2 weeks before the onset of clinical hepatitis B in their music teacher. Seven of the students played flute, 2 played saxaphone, 1 played trumpet, and 2 majorettes used whistles. During this period the teacher had played each student's instrument at least once for demonstration purposes. He then returned it, without cleaning or disinfecting it, and the student played it. Upon visual inspection, saliva was present on mouth pieces of instruments after usage; the amount of saliva was not measured, however.

The music teacher had a possible exposure to hepatitis B while residing in another Minnesota community 3 months before onset of symptoms. His serum and saliva were positive for HBsAg by radioimmunoassay at the time of illness. The serum was also positive for HBeAg. The saliva had a trace (minimal response) of occult blood. The teacher reported occasional bleeding from lips after extended playing of instruments. It was determined that bleeding occurred on at least 2 occasions when student instruments were played.

The 12 exposed students and 18 students who served as age- and sex-matched controls were tested for HBsAg and anti-HBs at intervals of 2 weeks, 8 weeks, and 6 months after the onset of the teacher's illness. All were negative for HBsAg and anti-HBs on all dates tested, and none reported illness during that time that was compatible with a diagnosis of viral hepatitis.

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Editorial Note: Based on these investigations, the risk of transmission of hepatitis B as a result of indirect oral contact with HBsAg-positive saliva appears to be small. General decontamination procedures for CPR training manikins were discussed previously in the MMWR (*1*). More detailed guidelines are now available (*2*) from the Hepatitis Laboratories Division, CDC, Phoenix, 4402 N. 7th St, Phoenix, Arizona 85014.

References

1. MMWR 27:132-138, 1978
2. CDC: Hepatitis Surveillance Report No. 42. Issued June 1978
3. Bancroft W, Snitbhan R, Scott RM, et al: Transmission of hepatitis B virus to gibbons by exposure to human saliva containing hepatitis B surface antigen. J Infect Dis 135:79-85, 1977
4. Alter H, Purcell R, Gerin J, et al: Transmission of hepatitis B to chimpanzees by hepatitis B surface antigen-positive saliva and semen. Infect Immun 16:928-933, 1977

Diarrhea from Herbal Tea – New York, Pennsylvania

Six cases of persons who experienced diarrheal illness traced to the consumption of herbal tea have been reported from New York and Pennsylvania. In each instance, the tea contained a known cathartic—a fact that was not explained on the package labels.

New York: In October 1977, 3 persons, ages 14-18, developed severe abdominal cramps and watery diarrhea 3-7 hours after consuming herbal tea. No other symptoms were noted. No one consulted a physician, and all recovered without incident. Each person had prepared tea in a standard fashion in his own home. One of the persons experienced 3

Diarrhea – Continued

bouts of illness on 3 consecutive days before recognizing the relationship of the tea to the illness. No similar illness occurred in family members, none of whom drank this tea.

The tea, called Kneipp's Herbal type B tea, was purchased in Poughkeepsie, New York. The package label had neither instructions for preparation nor comment about the expected effects of the tea. The plant parts were identified at a Food and Drug Administration laboratory as a mixture of leaves, flowers, and bark from cornflowers, cinnamon, buckthorn, and senna. Buckthorn bark and senna are known cathartics.

Pennsylvania: On December 5, 1977, 3 young women developed severe abdominal cramps and profuse watery diarrhea 3 hours after drinking 1-2 cups of an herbal tea. Two of the women experienced palpitations. The illness lasted about 24 hours. Each of the 3 persons lost 1 day of work, and each sought medical assistance.

The tea, called Senna Leaf Tea, sold under the trade name Golden Harvest Old Fashioned, had been purchased at a health food store in Chester County, Pennsylvania. The package label had no instructions for preparation and did not indicate that senna is a cathartic. The women reported that they had prepared the tea in a standard fashion, using about ½-1 teaspoon of dried plant parts per cup of tea.

Reported by T Anderson, MD, S Konracki, Dutchess County Health Dept; DO Lyman, MD, State Epidemiologist, New York State Dept of Health; WE Parkin, DVM, State Epidemiologist, Pennsylvania State Dept of Health; Field Services Div, Special Studies Br, Chronic Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Anthraquinone and its derivatives are the active ingredients of senna and buckthorn. The anthraquinone cathartics are stimulant cathartics, thought to act by stimulating the myoneural synaptic junctions in the colon. The most common untoward effect is excessive catharsis. A benign pigmentation of the colon, melanosis coli, may occur in persons who have used the drugs for long periods of time. For a mother who is nursing, the active ingredients may be secreted in milk in sufficient quantities to affect her infant. Preparations of senna are available in prescription form.

Most commercial tea is prepared from the leaves of *Camellia sinensis,* in which the primary active ingredient is caffeine. In a broader sense, however, tea may refer to any collection of dried plant parts or the beverage derived from steeping the parts with water. The number of these preparations is considerable. They are only incompletely chronicled, their effects are varied, and the pharmacologic agents of which they are composed are often unknown.

Physicians and health departments should be aware that they may be called upon to evaluate individual cases and outbreaks of illness that are the predictable pharmacologic effects of herbal teas or other "natural" foods. Consumers do not need to avoid such products but should consider requesting information from the merchant about predictable effects of any food substance or beverage with which they are not familiar.

Honey Exposure and Infant Botulism

Of the 43 documented cases of infant botulism reported from California since 1976, 13 have had a history of ingestion of honey before the onset of constipation, the first symptom of most cases. Of foods fed to babies who developed infant botulism in California, only honey was found to contain *Clostridium botulinum* organisms. No honey specimens containing *C. botulinum* organisms contained preformed botulinal toxin. In 3 California cases, *C. botulinum* was isolated from honey fed the affected infants; in each

Botulism — Continued

case the infant had type B illness, and the honey sample contained type B organisms. In a fourth California case, no honey was available for culture; however, a jar of honey of the identical brand and size as that consumed by the patient, purchased at the market where the family shopped, contained type A botulism organisms. This case was type A botulism. Of over 60 honey specimens tested in California, about 13% have contained *C. botulinum*. This finding has been confirmed independently by 4 laboratories elsewhere in the United States. In 2 other states, *C. botulinum* type B was isolated from honey fed to 2 type B cases.

Since honey ingestion occurred in less than one-third of all California cases of infant botulism, development of infant botulism involves additional risk factors. However, since honey is not an essential food for infants, the California Department of Health concurs with the recent recommendation of the Sioux Honey Association that honey not be fed to infants under 1 year of age.

Reported by S Arnon, MD, J Chin, MD, State Epidemiologist, K Damus, RN, MSPH, T Midura, PhD, S Snowden, BA, P Taylor, MD, B Thompson, MPH, and R Wood, PhD, California Dept of Health, in the California Morbidity Weekly Report, July 14, 1978; Field Services Div, Bur of Epidemiology, CDC.

Editorial Note: Much of California's data concerning honey and infant botulism have been previously discribed (*1*). *C. botulinum* spores are present in soil and on the surface of many vegetables. When vegetables are canned commercially, they are subjected to sufficient heat (⩾123 C or ⩾253.4 F) and pressure to destroy the botulism spores. The repeated

Continued on page 255

TABLE I. Summary — cases of specified notifiable diseases, United States

[Cumulative totals include revised and delayed reports through previous weeks.]

DISEASE	28th WEEK ENDING		MEDIAN 1973-1977**	CUMULATIVE, FIRST 28 WEEKS		
	July 15, 1978	July 16, 1977*		July 15, 1978	July 16, 1977*	MEDIAN 1973-1977**
Aseptic meningitis	110	125	116	1,383	1,396	1,247
Brucellosis	9	5	6	82	106	106
Chickenpox	1,403	1,173	1,144	118,369	156,816	141,557
Diphtheria	3	1	1	48	54	117
Encephalitis: Primary (arthropod-borne & unspec.)	10	10	19	320	350	448
Post-infectious	2	5	7	107	114	162
Hepatitis, Viral: Type B	260	311	229	7,876	8,800	5,981
Type A	516	569	610	15,282	16,771	18,894
Type unspecified	153	176		4,709	4,767	
Malaria	36	5	8	337	253	178
Measles (rubeola)	479	712	316	21,255	50,660	22,969
Meningococcal infections: Total	38	36	31	1,466	1,099	912
Civilian	37	35	31	1,448	1,092	888
Military	1	1	1	18	7	20
Mumps	157	169	531	12,221	14,911	41,715
Pertussis	41	24	---	944	489	---
Rubella (German measles)	210	228	162	14,218	17,582	14,193
Tetanus	3	2	2	39	33	35
Tuberculosis	570	504	616	15,857	16,176	17,039
Tularemia	2	3	3	44	71	73
Typhoid fever	7	5	9	228	181	191
Typhus fever, tick-borne (Rky. Mt. spotted)	43	59	46	451	537	363
Venereal diseases:						
Gonorrhea: Civilian	19,407	21,297	20,216	503,282	507,834	508,137
Military	382	518	441	13,220	14,594	15,357
Syphilis, primary & secondary: Civilian	279	368	471	10,980	11,027	13,060
Military	2	7	6	154	166	182
Rabies in animals	51	70	53	1,622	1,612	1,587

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1978		CUM. 1978
Anthrax	4	Poliomyelitis: Total	-
Botulism (Wash. 1)	51	Paralytic	-
Congenital rubella syndrome (N.C. 1, Ky. 1, Tex. 1)	20	Psittacosis	57
Leprosy (Tex. 2, Calif. 3)	75	Rabies in man	-
Leptospirosis (La. 1, Tex. 1, Calif. 1)	31	Trichinosis	36
Plague	2	Typhus fever, flea-borne (endemic, murine) (Va. 1, Tex. 1)	23

*Delayed reports received for calendar year 1977 are used to update last year's weekly and cumulative totals.

**Medians for gonorrhea and syphilis are based on data for 1975-1977.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending July 15, 1978, and July 16, 1977 (28th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1978	1978	1978	1978	CUM. 1978	1978	1977*	1978	1978	1978	1978	1978	CUM. 1978
UNITED STATES	110	9	1,403	3	48	10	10	2	260	516	153	36	337
NEW ENGLAND	3	–	147	–	–	–	1	–	7	17	10	2	14
Maine	–	–	2	–	–	–	–	–	–	–	–	–	1
N.H.†	1	–	8	–	–	–	–	–	1	2	–	1	2
Vt.	1	–	–	–	–	–	1	–	–	2	–	–	–
Mass.	–	–	61	–	–	–	–	–	–	3	10	–	3
R.I.	–	–	36	–	–	–	–	–	2	4	–	1	1
Conn.	1	–	40	–	–	–	–	–	4	6	–	–	7
MID. ATLANTIC	10	1	444	–	1	–	1	1	52	54	11	5	67
Upstate N.Y.	3	1	405	–	–	–	–	1	5	8	3	–	9
N.Y. City	3	–	37	–	1	–	1	–	8	12	2	4	29
N.J.†	–	–	NN	–	–	–	–	–	15	27	5	1	14
Pa.	4	–	2	–	–	–	–	–	24	7	1	–	15
E.N. CENTRAL	3	–	460	–	–	1	–	–	39	78	6	1	17
Ohio†	–	–	51	–	–	1	–	–	2	8	–	–	3
Ind.†	1	–	–	–	–	–	–	–	2	2	4	–	3
Ill.	–	–	54	–	–	–	–	–	17	50	1	1	4
Mich.	2	–	217	–	–	–	–	–	18	15	1	–	6
Wis.	–	–	138	–	–	–	–	–	–	3	–	–	1
W.N. CENTRAL	3	–	31	–	1	–	–	–	18	29	9	3	17
Minn.	–	–	–	–	–	–	–	–	3	11	–	1	4
Iowa	–	–	13	–	–	–	–	–	–	2	–	–	–
Mo.†	3	–	3	–	1	–	–	–	13	7	7	1	6
N. Dak.	–	–	12	–	–	–	–	–	–	1	–	–	–
S. Dak.	–	–	1	–	–	–	–	–	–	–	–	–	1
Nebr.	–	–	2	–	–	–	–	–	1	–	1	–	3
Kans.	–	–	–	–	–	–	–	–	4	8	1	1	3
S. ATLANTIC	33	–	128	–	–	3	2	1	39	64	18	9	64
Del.	1	–	3	–	–	–	–	–	–	–	–	–	1
Md.	12	–	44	–	–	3	–	–	15	12	3	5	15
D.C.	–	–	–	–	–	–	–	–	–	–	–	–	–
Va.†	3	–	2	–	–	–	1	1	6	7	5	–	16
W. Va.	–	–	63	–	–	–	1	–	1	2	–	–	1
N.C.†	12	–	NN	–	–	–	–	–	6	7	2	2	3
S.C.†	–	–	2	–	–	–	–	–	–	2	–	–	4
Ga.	–	–	2	–	–	–	–	–	3	19	–	–	6
Fla.†	5	–	12	–	–	–	–	–	8	15	8	2	18
E.S. CENTRAL	10	1	49	–	–	2	1	–	12	27	1	–	3
Ky.	1	–	43	–	–	2	–	–	2	7	1	–	1
Tenn.	2	–	NN	–	–	–	–	–	2	11	–	–	1
Ala.	6	–	5	–	–	–	1	–	3	–	–	–	1
Miss.	1	1	1	–	–	–	–	–	5	9	–	–	–
W.S. CENTRAL	27	3	30	–	1	2	2	–	28	71	28	1	18
Ark.	1	1	1	–	1	–	–	–	3	6	5	–	–
La.	3	–	NN	–	–	2	–	–	5	9	3	–	3
Okla.	–	–	–	–	–	–	–	–	3	2	2	–	–
Tex.	23	2	29	–	–	–	2	–	17	54	18	1	15
MOUNTAIN	5	1	96	–	3	1	1	–	6	64	24	–	4
Mont.	–	–	13	–	–	–	–	–	1	3	–	–	–
Idaho†	–	1	8	–	–	–	–	–	–	4	–	–	–
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	–
Colo.	2	–	52	–	2	–	1	–	2	9	4	–	1
N. Mex.	2	–	–	–	–	1	–	–	2	19	5	–	1
Ariz.	–	–	NN	–	–	–	–	–	–	24	15	–	1
Utah	1	–	14	–	–	–	–	–	1	4	–	–	–
Nev.	–	–	9	–	1	–	–	–	–	2	–	–	1
PACIFIC	16	3	18	3	42	1	2	–	59	112	46	15	133
Wash.	2	–	11	3	39	1	–	–	2	22	6	3	6
Oreg.	3	–	1	–	–	–	–	–	7	16	3	–	3
Calif.	11	3	–	–	–	–	2	–	46	72	37	12	107
Alaska	–	–	2	–	3	–	–	–	2	2	–	–	2
Hawaii	–	–	4	–	–	–	–	–	2	–	–	–	15
Guam†	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
P.R.	–	–	2	–	–	–	–	–	–	4	4	–	4
V.I.	–	–	1	–	–	–	–	–	–	–	–	–	1

NN: Not notifiable.
NA: Not available.
*Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.
†The following delayed reports will be reflected in next week's cumulative totals: Asep. meng.: N.J. +15, Mo. +1; Chickenpox: Guam +8; Enceph.: N.J. +2, Ind. +1, Mo. +1; Hep. B: N.H. –1, N.J. +19, Ohio –2, Ind. +4, S.C. –1, Fla. +1, Guam +2; Hep. A: N.J. +18, Ohio –1, Ind. +5, Mo. +8, N.C. –1, Fla. –1, Guam +1; Hep. unsp: N.J. +2, Ind. +6, Va. –3, Idaho +1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 15, 1978, and July 16, 1977 (28th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1978	CUM. 1978	CUM. 1977*	1978	CUM. 1978	CUM. 1977*	1978	CUM. 1978	1978	1978	CUM. 1978	CUM. 1978
UNITED STATES	479	21,255	50,660	38	1,466	1,099	157	12,221	41	210	14,218	39
NEW ENGLAND	18	1,942	2,449	–	68	48	7	702	–	15	691	–
Maine	1	1,307	164	–	6	3	3	483	–	–	145	–
N.H.	–	45	510	–	6	3	–	11	–	–	97	–
Vt.†	–	25	290	–	2	4	–	5	–	–	27	–
Mass.†	16	240	612	–	17	16	–	80	–	13	198	–
R.I.	–	7	58	–	16	1	2	29	–	–	40	–
Conn.	1	318	815	–	21	21	2	94	–	2	184	–
MID. ATLANTIC	68	1,966	7,989	7	243	143	9	526	2	36	2,782	2
Upstate N.Y.	49	1,298	3,587	2	79	31	2	184	2	9	486	1
N.Y. City	17	271	649	3	61	39	3	124	–	13	96	–
N.J.†	2	65	193	–	39	31	4	126	–	14	1,568	–
Pa.	–	332	3,560	2	64	42	–	92	–	–	632	1
E.N. CENTRAL	108	9,191	10,220	1	133	118	78	4,850	6	88	6,614	2
Ohio	12	466	1,247	–	47	37	30	755	5	1	1,315	1
Ind.†	–	165	4,258	1	25	8	–	271	–	–	523	1
Ill.	16	573	1,478	–	6	30	11	1,610	–	18	409	–
Mich.	67	6,590	897	–	44	31	12	1,313	1	56	2,903	–
Wis.	13	1,397	2,340	–	11	12	25	901	–	13	1,464	–
W.N. CENTRAL	6	370	9,365	–	51	51	4	1,870	1	1	610	4
Minn.	–	34	2,596	–	10	19	–	15	–	–	124	–
Iowa	–	49	4,257	–	5	7	1	120	–	–	47	–
Mo.	–	11	1,024	–	23	14	3	1,140	1	–	90	–
N. Dak.	3	189	22	–	3	1	–	11	–	–	79	–
S. Dak.	–	–	66	–	2	4	–	6	–	1	110	–
Nebr.	–	5	192	–	–	1	–	18	–	–	34	–
Kans.	3	82	1,208	–	8	5	–	560	–	–	126	4
S. ATLANTIC	196	4,603	4,317	13	375	254	8	644	1	5	947	6
Del.	–	5	22	–	12	17	2	45	–	–	34	–
Md.	–	37	367	2	17	17	–	57	–	–	5	1
D.C.	–	–	14	–	1	–	–	1	–	–	1	–
Va.	175	2,778	2,559	4	47	19	1	115	–	1	229	–
W. Va.	13	1,006	205	–	7	9	1	152	–	3	319	–
N.C.	1	109	59	4	75	57	–	56	–	–	168	1
S.C.	2	193	145	–	24	25	–	15	–	–	26	1
Ga.	–	15	740	–	44	36	–	61	1	1	2	–
Fla.	5	460	206	3	148	74	4	142	–	–	163	3
E.S. CENTRAL	17	1,336	1,917	2	117	123	17	1,025	1	10	476	1
Ky.	7	115	1,154	2	23	26	–	179	–	1	122	1
Tenn.	10	926	655	–	29	30	3	431	1	7	186	–
Ala.	–	89	77	–	35	46	10	353	–	2	21	–
Miss.	–	206	31	–	30	21	4	62	–	–	147	–
W.S. CENTRAL	24	926	2,012	7	228	192	9	1,577	6	35	874	13
Ark.	–	16	29	2	20	9	2	577	3	–	57	1
La.	3	314	74	2	91	72	2	58	–	11	482	1
Okla.	–	13	53	–	16	10	–	4	–	–	11	2
Tex.	21	583	1,856	3	101	101	5	938	3	24	324	9
MOUNTAIN	23	232	2,467	1	31	29	11	356	2	1	185	1
Mont.	–	102	1,151	–	1	2	–	136	–	–	17	–
Idaho	–	1	161	1	3	4	–	20	–	–	2	–
Wyo.	–	–	15	–	–	1	–	–	–	–	–	–
Colo.	–	28	494	–	2	1	–	74	–	–	43	–
N. Mex.†	–	–	253	–	7	7	–	15	1	–	3	–
Ariz.	23	43	292	–	11	10	–	10	–	1	88	–
Utah	–	44	9	–	4	3	11	97	–	–	23	1
Nev.	–	14	93	–	3	1	–	4	1	–	9	–
PACIFIC	19	689	9,924	7	220	141	14	671	22	19	1,039	10
Wash.	6	98	519	3	39	18	1	164	2	2	92	–
Oreg.	–	140	345	–	19	17	2	76	1	8	91	–
Calif.	13	447	8,966	4	153	79	11	401	19	5	848	10
Alaska	–	–	60	–	5	25	–	6	–	–	2	–
Hawaii	–	4	34	–	4	2	–	24	–	4	6	–
Guam	NA	24	4	–	–	–	NA	31	NA	NA	1	1
P.R.	5	195	821	–	2	1	25	1,339	–	–	15	5
V.I.	–	6	14	–	1	–	–	1	–	–	1	–

NA: Not available.
*Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.
†The following delayed reports will be reflected in next week's cumulative totals: Measles: Mass. –1; Men. inf.: N.J. +4, Ind. +1; Pertussis: N. Mex. +14; Tetanus: Vt. +1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 15, 1978, and July 16, 1977 (28th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1978	CUM. 1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	CUM. 1977*	1978	CUM. 1978	CUM. 1977*	CUM. 1978
UNITED STATES	570	15,857	44	7	228	43	451	19,407	503,282	507,834	279	10,990	11,027	1,622
NEW ENGLAND	21	519	–	–	36	–	9	556	13,172	13,195	8	325	465	65
Maine	–	36	–	–	–	–	–	34	991	959	–	8	14	58
N.H.	2	10	–	–	5	–	–	28	602	530	–	4	3	1
Vt.	1	23	–	–	1	–	–	13	309	341	–	3	6	–
Mass.	12	299	–	–	21	–	4	277	5,813	5,724	4	200	326	4
R.I.	2	35	–	–	4	–	1	35	922	1,063	1	14	7	–
Conn.	4	116	–	–	5	–	4	169	4,535	4,578	3	96	109	2
MID. ATLANTIC	82	2,734	3	–	23	5	25	1,503	54,333	51,729	33	1,484	1,538	38
Upstate N.Y.	27	412	2	–	7	4	14	304	9,176	8,553	1	111	143	32
N.Y. City	NA	951	1	–	10	–	2	753	21,379	20,727	27	1,053	973	–
N.J.	34	697	–	–	4	1	2	156	10,121	8,722	4	165	197	4
Pa.†	21	674	–	–	2	–	7	290	13,657	13,727	1	155	225	2
E.N. CENTRAL	84	2,409	1	–	11	–	13	2,753	73,551	78,837	36	1,193	1,210	80
Ohio†	11	447	1	–	5	–	8	528	18,239	20,432	4	226	274	6
Ind.	9	294	–	–	–	–	1	633	7,530	7,129	3	59	90	6
Ill.	36	922	–	–	1	–	4	620	23,447	25,841	23	754	656	24
Mich.	25	640	–	–	5	–	–	678	17,467	18,161	5	117	137	3
Wis.	3	106	–	–	–	–	–	294	6,898	7,274	1	37	53	41
W.N. CENTRAL	30	544	9	–	11	–	12	1,200	25,461	26,476	11	265	248	357
Minn.	4	104	–	–	4	–	–	187	4,348	4,759	2	111	77	118
Iowa	4	58	–	–	2	–	–	151	2,901	3,147	–	32	22	71
Mo.	11	231	8	–	3	–	7	577	10,880	11,190	2	70	87	44
N. Dak.	3	26	–	–	–	–	1	17	462	487	–	2	2	57
S. Dak.	3	46	–	–	–	–	–	21	895	696	–	1	2	46
Nebr.	1	11	–	–	–	–	–	96	1,906	2,276	–	7	24	2
Kans.†	4	68	1	–	2	–	4	151	4,069	3,921	7	42	34	19
S. ATLANTIC	138	3,423	4	2	30	24	258	4,573	121,786	125,863	82	2,920	3,148	215
Del.	–	26	–	–	1	–	4	101	1,693	1,747	–	5	16	1
Md.†	21	529	3	2	3	6	58	641	15,567	15,915	11	236	210	–
D.C.	6	189	–	–	1	–	–	300	8,064	8,293	3	233	332	–
Va.	6	351	1	–	6	5	52	694	11,598	12,576	7	250	307	4
W. Va.	40	150	–	–	2	–	8	60	1,764	1,774	–	8	1	2
N.C.	19	509	–	–	2	9	86	966	17,282	18,517	18	279	455	5
S.C.	18	306	–	–	3	3	27	331	12,092	11,920	5	147	135	48
Ga.	–	464	–	–	2	1	23	NA	22,268	24,361	16	712	619	144
Fla.†	28	899	–	–	10	–	–	1,480	31,468	30,860	22	1,050	1,074	11
E.S. CENTRAL	39	1,486	5	–	5	6	79	2,324	43,729	45,307	15	558	387	81
Ky.†	15	336	2	–	2	4	26	295	5,404	5,996	–	69	49	45
Tenn.	11	453	3	–	1	2	46	760	16,100	18,484	6	194	117	17
Ala.	13	358	–	–	1	–	4	704	12,709	12,381	2	87	72	19
Miss.	–	339	–	–	1	–	3	265	9,516	8,446	7	208	149	–
W.S. CENTRAL	98	1,859	18	1	27	8	50	2,630	73,113	64,556	52	1,715	1,488	539
Ark.	19	210	14	–	2	–	6	192	5,194	4,888	2	45	33	78
La.	22	304	1	1	2	–	–	566	11,578	9,658	9	352	347	11
Okla.	6	194	3	–	2	6	30	276	6,637	6,057	4	51	43	122
Tex.	51	1,151	–	–	21	2	12	1,596	46,704	43,953	37	1,267	1,065	328
MOUNTAIN	17	456	2	–	12	–	4	818	18,768	20,517	5	214	221	26
Mont.	–	31	–	–	–	–	2	36	1,114	1,022	–	7	3	3
Idaho	1	20	2	–	5	–	1	33	697	958	1	6	4	–
Wyo.	–	11	–	–	–	–	–	11	423	492	–	4	2	–
Colo.	5	42	–	–	2	–	–	164	5,213	5,307	2	60	68	–
N. Mex.	1	74	–	–	1	–	–	168	2,760	3,325	–	54	43	9
Ariz.	6	216	–	–	2	–	–	231	4,759	5,928	–	48	92	12
Utah	–	23	–	–	1	–	–	32	1,032	1,135	–	11	5	2
Nev.	4	39	–	–	1	–	1	143	2,770	2,650	2	24	7	–
PACIFIC	61	2,427	2	4	73	–	1	3,359	82,309	81,354	37	2,306	2,322	221
Wash.†	NA	82	–	–	0	–	–	244	6,452	6,138	NA	80	120	1
Oreg.	5	104	–	–	1	–	–	122	5,693	5,613	3	75	68	3
Calif.	55	1,879	2	4	59	–	1	2,828	65,021	65,194	34	2,117	2,095	211
Alaska	–	46	–	–	–	–	–	107	2,666	2,678	–	7	16	6
Hawaii	1	316	–	–	7	–	–	49	1,537	1,761	–	23	23	–
Guam†	NA	33	–	NA	–	NA	–	NA	100	124	NA	–	1	–
P.R.	16	235	–	–	1	–	–	14	1,239	1,743	11	243	306	13
V.I.	–	4	–	–	2	–	–	2	112	108	–	9	5	–

NA: Not available.
*Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.
†The following delayed reports will be reflected in next week's cumulative totals: TB: Kans. –2, Md. –6, Fla. –3, Wash. +30; RMSF: Kans. –1; GC: Pa. +32 civ., Ohio +1535 civ. +1 mil., Guam +8; An. rabies: Ohio +5, Ky. +1.

TABLE IV. Deaths in 121 U.S. cities,* week ending July 15, 1978 (28th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	669	418	172	30	27	30
Boston, Mass.	205	117	52	11	16	9
Bridgeport, Conn.	36	24	9	1	2	2
Cambridge, Mass.	41	30	9	2	–	6
Fall River, Mass.	21	18	2	–	1	1
Hartford, Conn.	62	29	22	6	5	1
Lowell, Mass.	27	17	5	1	1	1
Lynn, Mass.	22	17	4	1	–	1
New Bedford, Mass.	26	18	8	–	–	–
New Haven, Conn.	42	25	11	3	2	–
Providence, R.I.	63	40	21	–	–	5
Somerville, Mass.	6	4	2	–	–	–
Springfield, Mass.	44	27	12	–	–	2
Waterbury, Conn.	24	16	6	1	–	1
Worcester, Mass.	50	36	9	4	–	1
MID. ATLANTIC	2,599	1,626	628	168	98	113
Albany, N.Y.	54	36	11	3	3	1
Allentown, Pa.	17	12	5	–	–	–
Buffalo, N.Y.	108	71	27	2	6	7
Camden, N.J.	44	25	10	4	4	1
Elizabeth, N.J.	23	14	4	4	1	1
Erie, Pa.	25	13	7	4	–	–
Jersey City, N.J.	48	27	12	1	7	1
Newark, N.J.	68	27	22	10	7	4
N.Y. City, N.Y.	1,345	856	309	93	47	52
Paterson, N.J.	40	22	13	2	2	2
Philadelphia, Pa.†	359	210	97	24	17	16
Pittsburgh, Pa.	104	61	32	4	1	6
Reading, Pa.	29	22	5	2	–	1
Rochester, N.Y.	127	93	21	4	1	10
Schenectady, N.Y.	24	16	8	–	–	–
Scranton, Pa.	24	17	7	–	–	–
Syracuse, N.Y.	82	51	22	7	1	2
Trenton, N.J.	35	21	11	1	–	4
Utica, N.Y.	21	14	4	1	1	1
Yonkers, N.Y.	22	18	1	2	–	4
E.N. CENTRAL	2,292	1,274	653	173	104	63
Akron, Ohio	67	37	22	2	4	–
Canton, Ohio	41	26	9	5	–	1
Chicago, Ill.	514	263	152	43	36	14
Cincinnati, Ohio	166	98	49	11	1	9
Cleveland, Ohio	164	88	49	13	8	4
Columbus, Ohio	135	71	42	9	6	4
Dayton, Ohio	105	57	34	7	4	4
Detroit, Mich.	259	145	74	22	11	5
Evansville, Ind.	54	34	14	2	–	3
Fort Wayne, Ind.	33	19	9	4	1	1
Gary, Ind.	17	5	7	2	3	–
Grand Rapids, Mich.	52	25	18	6	2	3
Indianapolis, Ind.	176	102	45	15	5	–
Madison, Wis.	45	24	10	3	3	6
Milwaukee, Wis.	152	99	38	5	7	2
Peoria, Ill.	36	19	6	6	3	3
Rockford, Ill.	46	28	12	2	2	2
South Bend, Ind.	51	26	19	3	1	1
Toledo, Ohio	114	65	31	10	3	–
Youngstown, Ohio	65	43	13	3	4	1
W.N. CENTRAL	804	511	193	35	41	27
Des Moines, Iowa	62	31	22	3	4	–
Duluth, Minn.	25	21	3	–	1	3
Kansas City, Kans.	36	29	5	1	–	1
Kansas City, Mo.	132	73	36	4	10	5
Lincoln, Nebr.	43	29	9	2	3	2
Minneapolis, Minn.	104	64	31	2	4	1
Omaha, Nebr.	94	56	20	10	6	1
St. Louis, Mo.	189	123	43	5	11	7
St. Paul, Minn.	65	45	12	7	1	1
Wichita, Kans.	54	40	12	1	1	6

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	1,478	887	359	119	55	63
Atlanta, Ga.	182	102	42	14	15	6
Baltimore, Md.	164	92	42	17	7	4
Charlotte, N.C.	91	47	32	8	2	4
Jacksonville, Fla.	108	63	22	9	7	4
Miami, Fla.	109	62	30	7	6	2
Norfolk, Va.	56	31	16	2	5	4
Richmond, Va.	108	67	34	6	–	7
Savannah, Ga.	34	23	6	1	1	2
St. Petersburg, Fla.	75	64	7	3	–	4
Tampa, Fla.	83	52	12	10	4	4
Washington, D.C.	394	244	94	38	5	20
Wilmington, Del.	74	40	22	4	3	2
E.S. CENTRAL	735	383	213	37	35	34
Birmingham, Ala.	106	52	31	6	9	3
Chattanooga, Tenn.	61	37	19	4	–	2
Knoxville, Tenn.	48	31	14	1	–	–
Louisville, Ky.	141	80	44	6	7	14
Memphis, Tenn.	137	73	48	10	–	2
Mobile, Ala.	57	27	13	3	8	–
Montgomery, Ala.	36	20	11	2	1	5
Nashville, Tenn.	119	63	33	5	10	8
W.S. CENTRAL	1,282	673	359	121	55	32
Austin, Tex.	27	16	6	1	2	–
Baton Rouge, La.	58	26	18	9	2	3
Corpus Christi, Tex.	16	7	3	3	–	–
Dallas, Tex.	231	119	70	20	10	4
El Paso, Tex.	63	31	19	8	–	1
Fort Worth, Tex.	116	76	25	6	5	3
Houston, Tex.	352	157	106	46	20	2
Little Rock, Ark.	59	28	15	5	5	5
New Orleans, La.	98	55	32	3	1	–
San Antonio, Tex.	125	69	37	10	5	2
Shreveport, La.	18	10	4	2	1	–
Tulsa, Okla.	119	79	24	8	4	12
MOUNTAIN	642	372	170	43	22	22
Albuquerque, N.Mex.	59	28	16	9	1	4
Colo. Springs, Colo.	45	24	11	5	4	3
Denver, Colo.	142	93	30	11	2	4
Las Vegas, Nev.	53	26	22	3	–	–
Ogden, Utah	22	13	8	–	–	1
Phoenix, Ariz.	150	94	35	6	8	2
Pueblo, Colo.	25	12	6	4	–	6
Salt Lake City, Utah	62	32	22	2	5	2
Tucson, Ariz.	84	50	20	3	2	–
PACIFIC	1,766	1,146	420	91	47	38
Berkeley, Calif.	9	6	2	1	–	–
Fresno, Calif.	58	36	13	5	–	1
Glendale, Calif.	19	16	2	1	–	1
Honolulu, Hawaii	45	20	20	2	2	–
Long Beach, Calif.	84	57	20	3	–	4
Los Angeles, Calif.	593	383	149	30	12	13
Oakland, Calif.	88	65	15	6	1	1
Pasadena, Calif.	44	36	6	1	–	–
Portland, Oreg.	133	96	21	5	7	1
Sacramento, Calif.	58	32	18	4	4	–
San Diego, Calif.	154	84	42	10	6	3
San Francisco, Calif.	173	110	48	7	5	2
San Jose, Calif.	65	48	5	5	2	–
Seattle, Wash.	146	94	35	9	4	3
Spokane, Wash.	60	37	19	1	3	7
Tacoma, Wash.	37	26	6	1	1	2
TOTAL	12,237	7,290	3,167	917	484	422
Expected Number	10,914	6,503	2,818	713	424	350

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza

†Data not available this week. Figures are estimates based on average percent of regional total.

Botulism — Continued

finding of botulinal organisms of the same type in infants with botulism and a history of honey ingestion and in the honey, itself, suggests that honey may have been the source of infection for these and perhaps other infants. Although ingestion of honey was recorded in only a third of the cases and was therefore not the only risk factor, it appears prudent that honey not be recommended as a food for infants. The safety of honey as a food for older children and adults remains unquestioned.

Reported by the Bacterial Diseases Div, Bur of Epidemiology, CDC.

Reference

1. MMWR 27:17-18, 23, 1978

International Notes

Yellow Fever Outbreak on Colombia-Venezuela Border

On July 13, Colombia notified the Pan American Health Organization of a yellow fever outbreak in the Department of North Santander near the border with Venezuela. The diagnosis has been confirmed by histopathologic studies of fatalities. A yellow fever vaccination campaign and emergency control measures for *Aedes aegypti* have been initiated. Unconfirmed reports of cases have occurred in Tibu, Sardinata, Convencion, Ocana, and Cucuta.

Reported by the Pan American Health Organization; and the Viral Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: It is recommended that persons 6 months of age or older traveling to the affected areas should receive yellow fever vaccine unless medically contraindicated. This vaccine is available only at approved yellow fever vaccination centers, the locations of which can be obtained from state and local health departments. Yellow fever immunity following administration of licensed vaccine available in the United States has been shown to persist for more than 10 years.

Recommendation of the Public Health Service

Advisory Committee on Immunization Practices

Plague Vaccine

INTRODUCTION

Plague is a natural infection of rodents and their ectoparasites and occurs in many parts of the world, including the western United States, where a few human cases develop each year following exposure to infected wild rodents or their fleas. Epidemic plague may result when domestic rat populations and their fleas become infected. Recently the areas of the most intensive epidemic and epizootic infection have been some countries in Africa, Asia, and South America.

PLAGUE VACCINE

Plague vaccines* have been used since the late 19th century, but their effectiveness has never been measured precisely. Extensive field experience indicates that immunization

*Official name: Plague Vaccine

Plague Vaccine — Continued

with plague vaccine reduces the incidence and severity of disease.

The plague vaccine licensed for use in the United States is prepared from *Yersinia pestis* organisms grown in artificial media, inactivated with formaldehyde, and preserved in 0.5% phenol.

VACCINE USAGE

General Recommendations

Because human plague is rare in most parts of the world, there is no need to vaccinate persons other than those at particularly high risk of exposure. Routine vaccination is not needed for persons living in plague-enzootic areas like those in the western United States. It is not indicated for most travelers to countries reporting cases,* particularly if their travel is limited to urban areas with modern hotel accommodations.

In most countries of South America, Asia, and Africa where plague is reported, the risk of exposure exists primarily in rural mountainous or upland areas. Following natural disasters and at times when regular sanitary practices are interrupted, plague can extend from its usually endemic areas into urban centers. Rarely, pneumonic plague has been reported in conjunction with outbreaks of bubonic plague, and tourist travel to those specific locations should be avoided.

Routine bacteriologic precautions are sufficient to prevent accidental infection with plague; therefore, immunization of clinical laboratory workers is unnecessary,

Ecologists and other field workers who might come in contact with wild animals and their ectoparasites in areas where plague has been known to occur should be made aware of the potential risks of plague and told how to minimize direct contact with potentially infective animals and their tissues or parasites. These precautionary measures are generally sufficient to prevent infection.

Vaccine Recipients

Vaccination should be a routine requirement for:

1. All laboratory and field personnel who are working with *Y. pestis* organisms resistant to antimicrobics;
2. Persons engaged in aerosol experiments with *Y. pestis*; and
3. Persons engaged in field operations in plague-enzootic areas where preventing exposure cannot be observed (such as some disaster areas).

Selective plague vaccination might be considered for:

1. Laboratory personnel regularly working with *Y. pestis* or plague-infected rodents;
2. Workers (for example, Peace Corps volunteers and agricultural advisors) who reside in plague-enzootic or plague-epidemic rural areas where avoidance of rodents and fleas is impossible; and
3. Persons whose vocation brings them into regular contact with wild rodents or rabbits in plague-enzootic areas.

Primary Immunization

All injections should be given intramuscularly.

Adults and children over 10 years old: The primary series consists of 3 doses of vaccine. The first 2 doses, 0.5 ml each, should be administered 4 or more weeks apart, followed by a third dose, 0.2 ml, 4-12 weeks after the second injection. When less time is available, satisfactory but less than optimal results can be obtained with 3 injections of 0.5 ml administered at least 1 week apart.

*For a current listing, consult the most recent issue of the World Health Organization's *Weekly Epidemiological Record.*

Plague Vaccine – Continued

Children less than 10 years old: The primary series also is 3 doses of vaccine, but the doses are smaller. The manufacturer's guide to proportionate dosages is: infants under 1 year—one-fifth adult dose; 1-4 years—two-fifths adult dose, 5-10 years—three-fifths adult dose. The intervals between injections are the same as for adults.

Boosters Doses

When needed because of continuing exposure, boosters should be given at approximately 6-month intervals to a total of 5 doses (3 primary vaccination doses plus 2 boosters). More than 90% of vaccinees should then have a passive hemagglutination (PHA) antibody titier of 1:128 or more. Thereafter, booster doses at 1-2 year intervals, depending on the degree of continuing exposure, should provide good protection.

Booster dosages for children and adults is the same as the third dose in the primary series. The primary series need never be repeated for booster doses to be effective.

SUMMARY

The recommended doses for primary and booster vaccination are shown in Table 1.

TABLE 1. Recommended doses, by volume (ml), for immunization against plague

Dose number	Age (Years)			
	<1	1-4	5-10	>10
1 & 2	0.1 ml	0.2 ml	0.3 ml	0.5 ml
3 & Boosters	0.04 ml	0.08 ml	0.12 ml	0.2 ml

PRECAUTIONS AND CONTRAINDICATIONS

Mild pain, erythema, and side effects sucn as induration at the injection site occur frequently. With repeated doses, fever, headache, and malaise are more common and also tend to be more severe. Sterile abscesses occur, but rarely. No fatal or disabling complications have been reported.

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The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Center for Disease Control, Attn: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

Send mailing list additions, deletions, and address changes to: Center for Disease Control, Attn: Distribution Services, GSO, 1-SB-36, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Plague Vaccine – Continued

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Published in MMWR 17:171, 1968; reprinted 18(43 Suppl):14, 1969; revised 21(25 Suppl): 19-20, 1972.

Current Trends

Clarification: Silver Nitrate Prophylaxis for Gonococcal Ophthalmia Neonatorum

Following the publication of an article in the MMWR entitled, "Silver Nitrate Prophylaxis for Gonococcal Ophthalmia Neonatorum," several inquiries have been directed to CDC regarding a statement in the editorial note (*1*). The sentence (in the second column, second paragraph), which concerned the need for investigation of prophylactic preparations against gonococcal ophthalmia neonatorum, read: "Other possibly effective agents have either not been adequately studied (tetracycline and erythromycin), are less effective (bacitracin), or have serious adverse effects, such as sensitization (penicillin)." It should be changed to read: "Other agents for topical eye prophylaxis have either been less adequately studied (tetracycline and erythromycin), are less effective (bacitracin), or may cause sensitization (penicillin or neomycin)."

No proven cases of penicillin anaphylaxis in newborns from either topical or systemic administration of the drug have been reported to CDC. Sensitization of newborns by penicillin or neomycin eye prophylaxis is a distinct but unproven possibility.

Reported by the Venereal Disease Control Div, Bur of State Services, CDC.

Reference

1. MMWR 27:107, 1978

Erratum, Vol. 27, No. 25

p214 In the article, "Malaria in Participants of a Natural History Safari to Kenya, Africa," the 10th line of the first paragraph of the editorial note indicated that the weekly dose of chloroquine used for malaria prophylaxis is 550 mg. The correct figure is 500 mg.

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