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MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Mosquito-Borne Encephalitis — United States

Compared to recent years, St. Louis encephalitis (SLE) activity in the United States this year has increased, although it is not nearly as severe or as widespread as in 1975. This year, an unusual number of cases are occurring on the Gulf Coast. And in Michigan, where an outbreak of eastern equine encephalomyelitis (EEE) is occurring in horses, the first indigenous human case of EEE ever reported in the state has occurred. Details of this activity, as well as case reports of the other arthropod-borne encephalitides, are given below.

St. Louis encephalitis: Confirmed cases of SLE have now been reported from Florida, Mississippi, Alabama, and Illinois—in addition to the previously reported outbreaks in Louisiana and Texas (*1*). With 1 exception, all cases have been associated with locations along the Gulf Coast.

Eighteen confirmed and 12 presumptive cases have now been reported in the SLE outbreak in Houston, Texas. Confirmed cases had onset from July 21 to August 29. Eight other confirmed cases have been reported from Harris County (outside Houston), from the neighboring Gulf Coast counties of Brazoria, Chambers, Galveston, and Jefferson, and from Wichita County in north Texas. The Wichita County patient had a history of probable exposure in the Houston area.

One of the 2 confirmed fatal cases was in a 36-year-old man from Oak Island, a small fishing community in Chambers County. He had not traveled recently. On August 3 he presented at a local clinic with a severe sore throat and fever. Two days later, his illness worsened, and he was admitted to a reference hospital in Galveston with a severe sore throat, a temperature of 105 F (40.5 C), and confusion. On examination, a loss of coordination on the right side was noted, and a left temporal lobe lesion was visualized on CAT* scan. He was begun on chemotherapy for suspected herpes encephalitis, and a brain biopsy for viral study was obtained. His condition deteriorated, and he died on August 25. The Texas state laboratory confirmed SLE infection serologically and subsequently isolated SLE virus from brain biopsy material.

Four confirmed and 4 presumptive SLE cases have been reported from New Orleans, with onset dates from July 29 through August 10. The patients reside in or near the lower ninth ward of New Orleans. One other confirmed SLE case occurred in a resident of Evangeline Parish, Louisiana; his illness began on July 16.

Two confirmed and 1 presumptive SLE cases with onset of illness from July 10-25 have been identified from Ft. Walton Beach, Florida, a city on the Gulf of Mexico approximately 50 miles east of the Alabama border. Four other confirmed SLE infections have been reported in Gulf Coast residents of Alabama (1 in Mobile) and Mississippi (1 in

*Computer-assisted tomography.

Encephalitis – Continued

Pascagoula, 1 in Biloxi). Three of the cases had onset of illness in August, were hospitalized in Alabama, and were diagnosed by the Alabama State Laboratory. One of the patients from Pascagoula developed encephalitis in late July, was hospitalized in Mississippi, and was serologically confirmed by CDC to have had SLE.

The only confirmed SLE infection that occurred in a patient without a history of residence or travel near the Gulf Coast involved a 56-year-old resident of Rock Island County, Illinois, who had onset of illness on August 12 and died 2 days later. The patient had a history of recent travel to Chicago and Peoria.

California encephalitis: Confirmed cases of California encephalitis (CE) have been reported from Wisconsin, Illinois, Ohio, Indiana, and Missouri—all states in which the disease is considered endemic—as well as from 1 southeastern state, Tennessee. Wisconsin has reported 7 cases. Most were children from the southwestern area of the state, although 1 boy was a resident of Lyndon Station, an area further east than CE is usually reported in that state. CE cases were also reported from around Peoria, Illinois (5 confirmed and 2 presumptive) and northeastern Ohio (2 confirmed). Indiana and Missouri have each reported 1 confirmed case. The Tennessee patient was a 6-year-old girl from Roane County in the east-central part of the state; she had not traveled outside the area in the weeks before her illness.

Eastern equine encephalomyelitis: A localized outbreak of EEE has been occurring in horses from southwest Michigan. Seventy-two clinical equine cases were identified from July 24 to September 16. The outbreak appears to have peaked in early September. Most of the cases occurred in St. Joseph (33 cases) and Kalamazoo (25) counties. Estimated attack rates for equines in the counties were 11.0 and 5.9 per 1,000, respectively. Mosquitoes and serum specimens from horses and wild and domestic birds were collected in the area of the outbreak by a team of state and CDC investigators.

Equine vaccination was intensified by horse owners in the area, and the equine cases diminished rapidly thereafter. The Michigan State Department of Health arranged for aerial application of malathion insecticide on 211,000 acres in the affected counties on September 10-12. Mosquito populations in the area declined more than 95% from the number collected before the insecticide application.

EEE infection was also confirmed by the Vector Biology Laboratory of Notre Dame University in a 12-year-old boy who lived on a St. Joseph County farm that had many equine EEE cases. The patient developed acute encephalitis on August 28 and remains hospitalized in a coma.

Three confirmed (1 fatal) and 1 fatal presumptive case of EEE have been reported from Florida. The patients were residents of the Florida Panhandle (*2*), the Tampa Bay area, and Polk County (west-central area). The Polk County patient had onset early in August and the others, in June. One confirmed EEE case with onset in June has been reported from southeast Georgia (*2*).

Western equine encephalomyelitis: There have been no reports of confirmed western equine encephalomyelitis in humans in 1980.

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Encephalitis – Continued

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References

1. MMWR 1980;29:415-6.
2. MMWR 1980;29:353-4.

Epidemiologic Notes and Reports

Hepatitis B Contamination in a Clinical Laboratory – Colorado

An unexplained increased frequency of positive tests for hepatitis B surface antigen (HBsAg) in a transplant ward in a Colorado hospital was recently investigated. The investigation revealed that routine manipulation of blood specimens in the hospital's general chemistry laboratory was responsible for contamination of the contents of serum tubes, of the outer surfaces of tubes, and also of the fingers of laboratory workers. The contamination of tube contents led to false-positive tests appearing as clusters of clinically inconsistent positive results for samples adjacent to tubes of HBsAg-positive serum. Contamination of serum occurred when an automatic diluter with a multiple-use pipette tip was used for serum calcium determinations prior to HBsAg testing.

As part of the investigation, an experiment was conducted to determine how the contamination of tube contents occurred. A row of test tubes was set up. The first tube in the row contained HBsAg-positive serum; the rest of the serum specimens were HBsAg negative. In the experiment, the pipette on the automatic diluter drew up serum from the first tube and dispensed it, along with diluent, into an empty test tube. The pipette tip then was wiped with toweling material and returned to the second serum-filled tube. This sequence was continued in like fashion down the row, transferring serum plus diluent into empty test tubes.

In this experiment, it was shown that about 20 nanoliters (nl=10^{-6} ml) of HBsAg-positive serum from the first tube was transferred to the serum-filled tube next to it; in the third tube in this row, approximately 1 nl of the known-positive serum could be detected.

In another experiment involving routine handling of serum tubes, HBsAg contamination on the exterior surfaces of tubes and on the fingertips of laboratory technologists was demonstrated. From 58-100 nl of HBsAg-positive serum was recovered from the exterior surfaces of tubes handled down the line from the tube containing HBsAg-positive serum. The ungloved fingertips of 5 of 6 laboratory technologists working with the tubes were contaminated with 61-120 nl of positive serum, when sampled by the swab/rinse technique (*1*). The infective dose of HBsAg-positive serum has been shown to be as small as 10^{-8} ml—well below the amounts of serum found on tube surfaces and fingertips.

Hepatitis B — Continued

Reported by AL Schultz, PhD, L Laxson, RN, VA Medical Center, Denver; RS Hopkins, MD, State Epidemiologist, Colorado State Dept of Health; and Hepatitis Laboratories Div, Bur of Epidemiology, CDC.

Editorial Note: Although carry-over volumes in the range of 1-20 nl do not usually have a significant effect on results of routine tests in a general chemistry laboratory, such an amount of HBsAg-positive serum transferred to tubes containing no HBsAg may produce borderline-to-strong false-positive results in the sensitive, direct, solid-phase radioimmunoassay for HBsAg.* Therefore, serum aliquots for HBsAg testing should be withdrawn before performing any other clinical laboratory test on the remaining specimens.

Laboratory workers are known to have hepatitis B seropositivity rates at least 5 times higher than those for matched control groups, and this seropositivity has been shown to be directly correlated with the frequency with which they have contact with blood. Tubes of serum from known or suspected hepatitis B or non-A/non-B patients should be appropriately labeled, and special care should be taken in their handling. This labeling, however, should not impart a false sense of security to laboratory workers, since they will frequently be handling specimens from unrecognized hepatitis carriers. If laboratory personnel handling blood or blood products would routinely wear gloves, the risks of parenteral or mucous-membrane exposure would be lowered. Also, frequent handwashing

*Ausria II, Abbott Laboratories, North Chicago, Illinois.

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

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

DISEASE	38th WEEK ENDING		MEDIAN 1975-1979	CUMULATIVE, FIRST 38 WEEKS		
	September 20, 1980	September 22, 1979*		September 20, 1980	September 22, 1979*	MEDIAN 1975-1979
Aseptic meningitis	304	453	194	4,476	5,272	3,219
Brucellosis	4	6	5	138	124	168
Chickenpox	383	287	287	156,789	171,932	150,782
Diphtheria	–	–	1	3	57	70
Encephalitis: Primary (arthropod-borne & unspec.)	18	58	53	621	737	848
Post-infectious	5	1	4	161	181	181
Hepatitis, Viral: Type B	411	295	295	12,686	10,544	10,937
Type A	579	544	663	20,145	21,500	22,458
Type unspecified	250	237	176	8,678	7,376	6,071
Malaria	27	29	13	1,407	524	403
Measles (rubeola)	34	68	77	12,877	12,121	24,019
Meningococcal infections: Total	27	28	22	1,953	2,010	1,330
Civilian	26	28	22	1,945	1,992	1,321
Military	1	–	–	8	18	18
Mumps	69	100	140	7,180	11,267	16,191
Pertussis	39	28	42	1,175	1,023	1,127
Rubella (German measles)	29	47	53	3,329	10,734	14,902
Tetanus	3	1	1	53	50	54
Tuberculosis	544	499	631	19,985	20,153	22,014
Tularemia	11	1	1	151	154	106
Typhoid fever	25	8	10	335	356	305
Typhus fever, tick-borne (Rky. Mt. spotted)	24	25	23	965	903	897
Venereal diseases:						
Gonorrhea: Civilian	23,261	21,756	22,255	721,519	722,734	722,734
Military	389	567	581	19,986	20,157	20,157
Syphilis, primary & secondary: Civilian	572	486	533	19,387	17,690	17,660
Military	8	5	9	251	231	231
Rabies in animals	101	121	70	4,796	3,726	2,271

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1980		CUM. 1980
Anthrax	1	Poliomyelitis: Total	6
Botulism (Idaho 1)	47	Paralytic	4
Cholera	8	Psittacosis (Tex. 2)	81
Congenital rubella syndrome (Mich. 1)	46	Rabies in man	–
Leprosy (NYC 1, Minn. 3, N.C. 1, Tex.1, Calif.1, Hawaii 2)	142	Trichinosis (N.J. 1, La. 1, Calif. 1)	89
Leptospirosis (Fla.2, Tex. 1)	54	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	48
Plague	15		

*Delayed reports received for calendar year 1979 are used to update last year's weekly and cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 20, 1980, and September 22, 1979 (38th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKEN POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1980	1980	1980	1980	CUM. 1980	1980	1979*	1980	1980	1980	1980	1980	CUM. 1980
UNITED STATES	304	4	383	–	3	18	58	5	411	579	250	27	1,407
NEW ENGLAND	23	–	39	–	–	2	1	–	19	12	9	3	86
Maine	2	–	7	–	–	–	–	–	–	–	–	–	14
N.H.	1	–	–	–	–	–	–	–	–	1	–	–	7
Vt.	–	–	3	–	–	–	–	–	1	–	–	–	1
Mass.	13	–	13	–	–	2	–	–	5	6	8	1	42
R.I.	6	–	3	–	–	–	–	–	3	2	–	1	9
Conn.	1	–	13	–	–	–	1	–	10	3	1	1	13
MID. ATLANTIC	79	–	51	–	1	4	1	–	58	41	27	7	185
Upstate N.Y.	20	–	14	–	–	–	1	–	21	14	16	–	29
N.Y. City	9	–	36	–	1	1	–	–	11	11	4	3	48
N.J.	20	–	NN	–	–	2	–	–	26	16	7	–	49
Pa.	30	–	1	–	–	1	–	–	NA	NA	NA	4	59
E.N. CENTRAL	18	–	95	–	1	1	14	1	27	69	21	–	74
Ohio	–	–	8	–	–	–	3	–	11	12	3	–	10
Ind.	–	–	7	–	–	–	7	–	10	21	8	–	9
Ill.	–	–	23	–	–	–	2	–	2	20	4	–	28
Mich.	12	–	9	–	1	1	1	–	4	13	6	–	19
Wis.	6	–	48	–	–	–	1	1	–	3	–	–	8
W.N. CENTRAL	10	–	36	–	1	3	1	–	12	31	3	3	60
Minn.	–	–	–	–	–	–	–	–	4	7	1	–	19
Iowa	1	–	18	–	–	3	–	–	3	5	1	–	7
Mo.	4	–	5	–	1	–	–	–	3	6	–	–	12
N. Dak.	–	–	2	–	–	–	–	–	–	–	–	–	–
S. Dak.	–	–	4	–	–	–	1	–	–	1	–	–	3
Nebr.	4	–	6	–	–	–	–	–	–	2	–	–	7
Kans.	1	–	1	–	–	–	–	–	2	10	1	3	12
S. ATLANTIC	74	–	65	–	–	1	10	2	93	89	33	1	144
Del.	–	–	–	–	–	–	–	–	4	2	–	–	–
Md.	25	–	10	–	–	–	2	–	9	1	8	–	24
D.C.	–	–	–	–	–	–	–	–	–	1	1	–	2
Va.	17	–	1	–	–	–	1	–	13	8	6	1	54
W. Va.	1	–	11	–	–	–	5	–	2	1	1	–	4
N.C.	23	–	NN	–	–	–	2	–	9	14	4	–	11
S.C.	–	–	–	–	–	–	–	–	14	1	1	–	5
Ga.	–	–	–	–	–	–	–	–	17	28	–	–	14
Fla.	8	–	43	–	–	1	–	2	25	33	12	–	30
E.S. CENTRAL	21	1	8	–	–	–	13	–	17	21	2	–	10
Ky.	–	–	4	–	–	–	–	–	–	–	–	–	2
Tenn.	9	1	NN	–	–	–	–	–	12	9	2	–	–
Ala.	9	–	3	–	–	–	5	–	4	5	–	–	6
Miss.	3	–	1	–	–	–	8	–	1	7	–	–	2
W.S. CENTRAL	9	3	64	–	–	1	2	–	37	78	44	1	133
Ark.	1	–	–	–	–	–	–	–	1	3	2	–	8
La.	1	–	NN	–	–	–	–	–	8	18	7	–	42
Okla.	–	3	–	–	–	–	–	–	8	2	–	–	12
Tex.	7	–	64	–	–	1	2	–	20	55	35	1	71
MOUNTAIN	12	–	23	–	–	–	2	1	16	51	23	2	75
Mont.	1	–	12	–	–	–	1	–	–	1	–	–	1
Idaho	1	–	2	–	–	–	–	–	–	–	–	–	1
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	2
Colo.	7	–	6	–	–	–	–	–	7	23	6	2	29
N. Mex.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	3
Ariz.	–	–	NN	–	–	–	–	–	6	11	9	–	16
Utah	3	–	3	–	–	–	1	1	2	14	3	–	15
Nev.	–	–	–	–	–	–	–	–	1	2	5	–	8
PACIFIC	58	–	2	–	–	6	14	1	132	187	88	10	640
Wash.	1	–	–	–	–	1	4	–	1	10	6	2	47
Oreg.	6	–	–	–	–	–	3	–	1	15	1	4	36
Calif.	50	–	–	–	–	5	6	1	127	160	81	4	536
Alaska	1	–	1	–	–	–	1	–	2	1	–	–	6
Hawaii	–	–	1	–	–	–	–	–	1	1	–	–	15
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	3
P.R.	–	–	3	–	–	–	–	–	–	–	–	–	3
V.I.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
Pac. Trust Terr.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–

NN: Not notifiable. NA: Not available.

*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 20, 1980, and September 22, 1979 (38th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1980	CUM. 1980	CUM. 1979*	1980	CUM. 1980	CUM. 1979*	1980	CUM. 1980	1980	1980	CUM. 1980	CUM. 1980
UNITED STATES	34	12,877	12,121	27	1,953	2,010	69	7,180	39	29	3,329	53
NEW ENGLAND	–	669	288	1	105	108	6	561	2	3	216	2
Maine	–	33	17	–	5	5	1	286	–	–	68	1
N.H.	–	326	33	–	8	9	2	21	–	–	35	–
Vt.	–	226	119	–	13	6	1	12	–	–	3	–
Mass.	–	58	13	–	35	42	1	123	2	2	82	–
R.I.	–	2	102	–	7	7	1	23	–	–	9	1
Conn.	–	24	4	1	37	39	–	96	–	1	19	–
MID. ATLANTIC	7	3,776	1,485	7	355	303	3	806	5	3	553	7
Upstate N.Y.	3	693	624	–	113	108	–	114	1	1	209	2
N.Y. City	4	1,183	759	2	91	74	–	92	3	2	97	2
N.J.	–	827	57	1	73	71	3	102	–	–	101	–
Pa.	–	1,073	45	4	78	50	–	498	1	–	146	3
E.N. CENTRAL	5	2,420	3,160	2	221	217	16	2,709	6	8	801	3
Ohio	–	377	266	–	72	89	1	1,123	2	1	8	1
Ind.	–	91	204	–	36	42	4	122	–	7	338	–
Ill.	–	337	1,419	–	43	14	3	357	1	–	161	–
Mich.	–	235	825	2	57	54	4	801	3	–	126	1
Wis.	5	1,380	446	–	13	18	4	306	–	–	168	1
W.N. CENTRAL	–	1,315	1,729	–	71	64	2	249	4	–	197	3
Minn.	–	1,101	1,216	–	20	12	–	15	1	–	27	1
Iowa	–	–	16	–	9	9	1	43	–	–	8	–
Mo.	–	64	409	–	28	33	–	71	1	–	45	1
N. Dak.	–	–	20	–	1	1	–	4	–	–	5	–
S. Dak.	–	–	2	–	5	4	–	2	2	–	2	–
Nebr.	–	83	–	–	–	–	–	9	–	–	1	–
Kans.	–	67	66	–	8	5	1	105	–	–	109	1
S. ATLANTIC	13	1,890	1,857	3	476	490	17	981	3	1	335	10
Del.	–	3	1	–	2	5	–	39	–	–	1	–
Md.	11	82	15	–	46	41	14	329	–	1	71	1
D.C.	–	–	–	–	1	–	–	4	–	–	1	–
Va.	–	303	270	2	48	70	–	64	1	–	51	3
W. Va.	1	15	54	–	17	8	3	93	–	–	24	1
N.C.	–	129	112	–	91	76	–	92	–	–	46	1
S.C.	–	159	151	–	54	59	–	205	–	–	51	3
Ga.	–	811	457	1	83	69	–	3	1	–	–	–
Fla.	1	388	797	–	134	162	–	152	1	–	90	1
E.S. CENTRAL	–	340	204	3	177	149	2	856	1	1	82	4
Ky.	–	55	37	–	53	29	1	751	–	1	38	1
Tenn.	–	179	59	1	47	44	–	25	1	–	39	2
Ala.	–	22	84	2	50	36	–	21	–	–	3	1
Miss.	–	84	24	–	27	40	1	59	–	–	2	–
W.S. CENTRAL	1	927	894	2	204	309	4	259	6	3	122	16
Ark.	–	13	7	–	18	24	–	20	1	–	4	2
La.	–	11	250	–	75	116	2	67	4	–	10	4
Okla.	–	745	22	–	17	29	–	–	–	–	4	1
Tex.	1	158	615	2	94	140	2	172	1	3	104	9
MOUNTAIN	–	484	313	3	70	78	2	194	4	2	143	–
Mont.	–	2	53	–	3	8	–	55	–	–	43	–
Idaho	–	–	18	–	4	8	–	15	–	1	20	–
Wyo.	–	–	36	1	3	1	–	–	–	–	1	–
Colo.	–	24	66	–	18	5	1	53	2	1	12	–
N. Mex.	NA	13	38	–	8	4	NA	–	NA	NA	5	–
Ariz.	–	390	73	1	13	33	1	35	2	–	31	–
Utah	–	47	18	–	5	8	–	27	–	–	25	–
Nev.	–	8	11	1	16	11	–	9	–	–	6	–
PACIFIC	8	1,056	2,191	6	274	292	17	565	8	8	880	8
Wash.	–	177	1,126	1	50	46	–	129	3	–	80	–
Oreg.	–	–	61	–	46	25	1	68	–	–	50	–
Calif.	8	867	922	5	170	205	15	340	5	8	733	8
Alaska	–	6	17	–	8	6	1	12	–	–	12	–
Hawaii	–	6	65	–	–	10	–	16	–	–	5	–
Guam	NA	5	11	–	1	1	NA	9	NA	NA	–	–
P.R.	6	137	343	–	9	5	–	134	–	–	18	10
V.I.	NA	6	5	–	1	3	NA	2	NA	NA	–	–
Pac. Trust Terr.	NA	6	8	–	–	1	NA	20	NA	NA	1	–

NA: Not available.
*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 20, 1980, and September 22, 1979 (38th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1980	CUM. 1980	CUM. 1980	1980	CUM. 1980	1980	CUM. 1980	1980	CUM. 1980	CUM. 1979*	1980	CUM. 1980	CUM. 1979*	CUM. 1980
UNITED STATES	544	19,985	151	25	335	24	965	23,261	721,519	722,734	572	19,387	17,690	4,796
NEW ENGLAND	14	571	6	–	8	–	11	673	18,162	17,903	3	430	350	48
Maine	–	42	–	–	1	–	–	35	1,036	1,262	–	5	10	21
N.H.	1	14	–	–	–	–	–	18	663	668	–	1	16	7
Vt.	–	19	–	–	–	–	–	17	428	430	–	5	1	–
Mass.	11	316	4	–	5	–	5	242	7,588	7,048	2	276	197	12
R.I.	–	56	1	–	1	–	2	36	1,170	1,461	–	24	11	–
Conn.	2	124	1	–	1	–	4	325	7,277	7,034	1	119	115	8
MID. ATLANTIC	73	3,239	3	6	69	2	41	2,617	78,574	78,662	100	2,717	2,675	59
Upstate N.Y.	14	638	1	3	12	–	13	486	14,620	13,350	17	236	196	31
N.Y. City	32	1,165	1	1	29	–	3	1,214	30,217	31,247	59	1,759	1,804	–
N.J.	17	681	1	2	15	2	16	286	14,335	13,714	11	325	359	12
Pa.	10	755	–	–	13	–	9	631	19,402	20,351	13	397	316	16
E.N. CENTRAL	71	2,878	1	1	30	–	25	3,910	111,892	112,360	48	1,792	2,340	721
Ohio	16	513	–	–	8	–	12	986	29,311	30,644	16	277	457	44
Ind.	16	301	–	–	–	–	2	272	11,333	9,722	2	143	169	63
Ill.	16	1,013	–	1	12	–	6	1,372	35,329	35,252	25	1,012	1,307	391
Mich.	14	879	1	–	6	–	3	961	25,389	26,486	1	292	339	14
Wis.	9	172	–	–	4	–	2	319	10,530	10,256	4	68	68	209
W.N. CENTRAL	30	752	25	1	22	1	51	1,220	34,641	35,410	4	246	235	1,544
Minn.	–	140	1	–	3	–	–	244	5,653	5,931	1	86	62	164
Iowa	3	64	1	1	2	1	3	105	3,694	4,249	–	14	28	326
Mo.	24	353	20	–	15	–	32	426	15,478	15,226	1	119	109	312
N. Dak.	–	39	–	–	–	–	–	19	487	594	–	3	2	184
S. Dak.	1	38	–	–	1	–	2	40	1,033	1,205	2	4	2	349
Nebr.	–	29	1	–	–	–	4	69	2,615	2,509	–	6	3	83
Kans.	2	89	2	–	1	–	10	317	5,681	5,696	–	14	29	126
S. ATLANTIC	121	4,404	9	1	37	10	618	5,117	180,026	175,550	149	4,605	4,228	374
Del.	4	60	–	–	1	–	2	120	2,587	2,905	–	10	21	1
Md.	15	553	2	–	2	1	64	285	19,121	21,454	7	331	276	24
D.C.	5	266	–	–	4	–	–	405	12,807	11,571	19	350	327	–
Va.	32	462	–	–	6	2	87	404	16,280	16,868	12	412	360	13
W. Va.	2	159	–	–	3	1	4	59	2,409	2,396	–	15	41	20
N.C.	11	783	3	1	3	3	271	916	25,975	25,163	11	316	338	19
S.C.	13	403	–	–	3	2	134	510	17,064	16,479	14	265	215	50
Ga.	15	595	4	–	–	–	51	1,267	35,232	33,124	39	1,334	1,173	185
Fla.	24	1,123	–	–	15	1	5	1,151	48,551	45,590	47	1,572	1,477	62
E.S. CENTRAL	50	1,814	10	–	9	3	92	2,044	59,213	61,819	46	1,581	1,164	263
Ky.	12	408	–	–	3	–	16	252	8,617	8,200	2	105	127	113
Tenn.	16	605	7	–	–	1	53	592	21,322	22,131	13	660	495	108
Ala.	10	470	1	–	2	1	13	794	17,693	18,526	17	337	215	42
Miss.	12	331	2	–	4	1	10	406	11,581	12,962	14	479	327	–
W.S. CENTRAL	74	2,233	61	10	50	8	109	3,307	92,253	93,158	137	3,855	3,221	1,133
Ark.	8	240	39	–	5	2	23	216	7,262	7,320	9	138	105	151
La.	22	425	–	–	–	–	2	530	16,712	16,511	19	920	787	11
Okla.	14	227	16	–	4	2	58	281	9,248	9,092	2	71	69	193
Tex.	30	1,341	6	10	41	4	26	2,280	59,031	60,235	107	2,726	2,260	778
MOUNTAIN	14	522	29	–	21	–	14	1,039	28,051	29,109	7	458	341	198
Mont.	–	20	11	–	1	–	3	NA	1,020	1,436	NA	1	8	43
Idaho	–	22	1	–	1	–	1	12	1,213	1,314	–	24	21	2
Wyo.	–	16	3	–	–	–	2	19	794	838	1	9	5	13
Colo.	7	80	6	–	7	–	3	268	7,574	7,664	4	120	71	49
N. Mex.	NA	101	–	NA	2	NA	4	NA	3,340	3,610	NA	78	65	38
Ariz.	5	220	1	–	7	–	–	489	7,682	8,197	–	154	94	49
Utah	2	37	5	–	3	–	1	50	1,411	1,485	2	13	3	3
Nev.	–	26	2	–	–	–	–	201	5,017	4,565	–	59	74	1
PACIFIC	97	3,572	7	6	89	–	4	3,334	118,707	118,763	78	3,703	3,136	456
Wash.	3	315	–	–	3	–	–	NA	9,337	10,318	NA	203	163	–
Oreg.	2	130	3	–	9	–	1	371	8,199	7,629	9	81	129	4
Calif.	89	3,013	3	6	77	–	3	2,827	95,863	94,823	63	3,290	2,752	408
Alaska	–	41	1	–	–	–	–	77	2,904	3,731	–	7	21	44
Hawaii	3	73	–	–	–	–	–	59	2,404	2,262	6	122	71	–
Guam	NA	30	–	NA	–	NA	–	NA	72	88	NA	4	–	–
P.R.	–	127	–	–	8	–	–	61	2,001	1,528	19	442	390	42
V.I.	NA	–	–	NA	–	NA	–	NA	108	123	NA	10	6	–
Pac. Trust Terr.	NA	33	–	NA	–	NA	–	NA	334	339	NA	–	1	–

NA: Not available.
*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending September 20, 1980 (38th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	<1	
NEW ENGLAND	604	400	141	29	22	32
Boston, Mass.	174	103	50	14	6	4
Bridgeport, Conn.	41	25	13	1	1	2
Cambridge, Mass.	21	17	3	1	–	1
Fall River, Mass.	23	15	5	–	–	–
Hartford, Conn.	62	43	14	1	2	–
Lowell, Mass.	22	13	5	2	1	1
Lynn, Mass.	24	19	2	3	–	–
New Bedford, Mass.	19	17	2	–	–	–
New Haven, Conn.	46	31	11	2	2	7
Providence, R.I.	55	34	16	1	3	4
Somerville, Mass.	9	6	1	1	–	3
Springfield, Mass.	39	28	9	–	1	6
Waterbury, Conn.	17	11	6	–	–	2
Worcester, Mass.	52	38	4	3	6	2
MID. ATLANTIC	2,532	1,602	622	178	69	91
Albany, N.Y.	50	34	10	3	2	–
Allentown, Pa.	15	12	3	–	–	–
Buffalo, N.Y.	110	73	20	8	5	7
Camden, N.J.	43	23	12	5	2	1
Elizabeth, N.J.	25	16	9	–	–	1
Erie, Pa.†	45	31	12	1	1	3
Jersey City, N.J.	34	23	7	2	2	1
Newark, N.J.	58	24	22	5	5	3
N.Y. City, N.Y.	1,308	835	306	103	28	39
Paterson, N.J.	24	18	5	–	–	2
Philadelphia, Pa.†	321	194	91	17	13	9
Pittsburgh, Pa.†	128	70	44	6	4	7
Reading, Pa.	39	25	9	5	–	1
Rochester, N.Y.	112	74	24	7	4	8
Schenectady, N.Y.	26	20	3	1	1	1
Scranton, Pa.†	30	24	5	1	–	1
Syracuse, N.Y.	79	45	20	10	2	1
Trenton, N.J.	41	27	11	3	–	1
Utica, N.Y.	20	18	2	–	–	2
Yonkers, N.Y.	24	16	7	1	–	3
E.N. CENTRAL	2,297	1,326	599	144	118	72
Akron, Ohio	84	41	25	5	8	–
Canton, Ohio	31	19	6	2	3	–
Chicago, Ill.	507	282	127	39	32	9
Cincinnati, Ohio	176	95	41	13	19	20
Cleveland, Ohio	168	84	51	14	8	2
Columbus, Ohio	132	77	38	4	6	1
Dayton, Ohio	110	58	39	3	4	3
Detroit, Mich.	263	147	68	28	10	2
Evansville, Ind.	41	18	18	3	1	1
Fort Wayne, Ind.	48	35	9	1	2	2
Gary, Ind.	24	16	6	1	1	–
Grand Rapids, Mich.	59	43	11	–	4	1
Indianapolis, Ind.	147	83	42	6	6	2
Madison, Wis.	51	27	12	6	2	4
Milwaukee, Wis.	121	82	26	8	4	13
Peoria, Ill.	80	57	16	3	2	4
Rockford, Ill.	42	24	12	2	1	3
South Bend, Ind.	55	38	12	3	1	2
Toledo, Ohio	104	65	24	3	4	1
Youngstown, Ohio	54	35	16	–	–	2
W.N. CENTRAL	736	466	149	44	43	20
Des Moines, Iowa	61	37	15	5	–	1
Duluth, Minn.	21	16	4	–	1	1
Kansas City, Kans.	39	17	10	3	7	1
Kansas City, Mo.	115	71	25	9	3	2
Lincoln, Nebr.	30	21	7	1	1	2
Minneapolis, Minn.	80	52	11	5	9	1
Omaha, Nebr.	65	42	8	2	10	2
St. Louis, Mo.	164	104	33	10	10	1
St. Paul, Minn.	82	58	15	3	1	1
Wichita, Kans.	79	48	21	6	1	8

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	<1	
S. ATLANTIC	1,170	666	335	75	35	51
Atlanta, Ga.	145	76	45	14	1	3
Baltimore, Md.	92	51	25	4	2	–
Charlotte, N.C.	66	36	20	6	1	3
Jacksonville, Fla.	104	55	31	4	5	3
Miami, Fla.	125	77	33	9	–	2
Norfolk, Va.	60	39	8	3	7	1
Richmond, Va.	69	39	22	1	2	5
Savannah, Ga.	38	20	12	2	1	3
St. Petersburg, Fla.	89	71	12	3	1	7
Tampa, Fla.	88	49	27	3	6	12
Washington, D.C.	248	129	84	22	9	11
Wilmington, Del.	46	24	16	4	–	1
E.S. CENTRAL	744	439	202	52	24	37
Birmingham, Ala.	87	51	23	7	3	2
Chattanooga, Tenn.	61	34	20	6	–	5
Knoxville, Tenn.	42	26	12	2	–	–
Louisville, Ky.	118	63	32	9	6	7
Memphis, Tenn.	206	133	51	11	5	14
Mobile, Ala.	56	43	9	3	–	1
Montgomery, Ala.	65	34	22	3	5	3
Nashville, Tenn.	109	55	33	11	5	5
W.S. CENTRAL	1,242	709	314	108	51	32
Austin, Tex.	58	39	12	4	1	4
Baton Rouge, La.	31	19	6	6	–	1
Corpus Christi, Tex.	43	24	14	2	1	1
Dallas, Tex.	185	97	46	18	11	–
El Paso, Tex.	65	40	12	6	2	2
Fort Worth, Tex.	85	46	24	4	3	5
Houston, Tex.	305	159	85	35	9	5
Little Rock, Ark.	66	41	14	6	3	3
New Orleans, La.	114	62	32	9	6	–
San Antonio, Tex.	149	83	43	10	10	5
Shreveport, La.	65	49	10	2	1	2
Tulsa, Okla.	76	50	16	6	4	4
MOUNTAIN	587	369	127	37	24	18
Albuquerque, N.Mex.	61	31	13	8	4	4
Colo. Springs, Colo.	22	16	4	1	–	6
Denver, Colo.	120	68	36	7	4	3
Las Vegas, Nev.	60	36	14	5	2	2
Ogden, Utah	19	11	8	–	–	–
Phoenix, Ariz.	161	112	25	7	9	1
Pueblo, Colo.	18	14	1	1	–	–
Salt Lake City, Utah	49	28	12	4	2	2
Tucson, Ariz.	77	53	14	4	3	–
PACIFIC	1,804	1,111	408	145	64	56
Berkeley, Calif.	14	10	2	1	1	–
Fresno, Calif.	48	33	10	2	2	3
Glendale, Calif.	34	28	4	2	–	2
Honolulu, Hawaii	48	34	8	3	2	4
Long Beach, Calif.	117	78	28	5	1	3
Los Angeles, Calif.	590	345	138	65	12	18
Oakland, Calif.	62	42	11	3	5	5
Pasadena, Calif.	32	19	8	1	2	3
Portland, Oreg.	106	68	22	3	7	–
Sacramento, Calif.	61	40	11	5	1	3
San Diego, Calif. ††	135	81	33	11	6	1
San Francisco, Calif.	142	84	34	10	10	2
San Jose, Calif.	161	91	42	14	5	5
Seattle, Wash.	164	99	40	16	4	5
Spokane, Wash.	49	27	15	1	5	1
Tacoma, Wash.	41	32	2	3	1	1
TOTAL	11,716	7,088	2,897	812	450	409

*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

†Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

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

Hepatitis B — Continued

should be encouraged, and label licking, mouth pipetting, smoking, eating, or drinking in the laboratory area should be prohibited.

Reference

1. Bond WW, Petersen NJ, Favero MS. Viral hepatitis B: aspects of environmental control. Health Laboratory Science 1977;14:235-52.

Current Trends

Production of Typhus Vaccine Discontinued in the United States

On July 9, 1980, the last U.S. manufacturer of epidemic (louse-borne) typhus vaccine discontinued production of the vaccine. In April 1980 the Bureau of Biologics, U.S. Food and Drug Administration, classified the vaccine as needing further studies to establish its efficacy. At the same time, it was determined that present production facilities were inadequate and would need to be redesigned. The manufacturer subsequently opted to cease production of this vaccine. No vaccine is now available from the manufacturer. A small amount of non-expired vaccine remains in the health-care community and will expire July 25, 1981. Canadian manufacturers also discontinued production of epidemic typhus vaccine this year.

The last U.S. outbreak of epidemic typhus was in 1922. Since then, only sporadic cases have occurred, primarily in the form of Brill-Zinsser disease (recrudescent typhus). No typhus cases are known to have occurred in an American traveler since 1950, when a person acquired the disease in Mexico. Cases of epidemic typhus are generally reported from mountainous regions of Mexico, Central and South America, the Balkans, Eastern Europe, Africa, and Asia. Even in these places, however, the risk of typhus for American travelers is extremely low, and treatment with tetracycline or chloramphenicol is curative. Currently, there are no plans for commercial production of a new vaccine in the United States.

Reported by Respiratory and Special Pathogens Br, Viral Diseases Div, Bur of Epidemiology, CDC.

Epidemiologic Notes and Reports

Tuberculosis in a Nursing Home — Oklahoma

In September 1978, the Tuberculosis and Respiratory Diseases Division of the Oklahoma State Department of Health was notified that a resident of a nursing home in southern Oklahoma had pulmonary tuberculosis. The home had 135 resident clients, approximately half of whom were former residents of a state institution for the mentally retarded, where a Tine Test* survey in 1970 had shown a low rate of positive reactions for tuberculosis (0.9%). Nursing home patients were housed in 3 wings; most of the retarded persons were in the east wing. Contact between patients in different wings was limited, although they were free to move about within their own wings. Patients were transferred

*Official name: Tuberculin, Old, Tine Test; Lederle Laboratories, Wayne, N.J. Use of trade names is for identification only and does not constitute endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Tuberculosis – Continued

to other wings at the rate of 1 to 2 per month. In 1977, the home had had 67 new admissions and 39 discharges, 23 (59%) of which represented deaths.

The index patient, a 68-year-old retarded female residing in the east wing, was hospitalized in August 1978. Chest X ray was consistent with pulmonary tuberculosis. Sputum smears contained acid-fast bacilli. When cultures yielded *Mycobacterium tuberculosis* sensitive to isoniazid (INH), rifampin, and ethambutal, the patient was started on treatment with these drugs. Before being hospitalized, she had been ambulatory and had had frequent contact with other patients in the east wing.

An ensuing epidemiologic investigation revealed that another patient in the east wing had been hospitalized for pulmonary tuberculosis in 1977.

As part of the current investigation, all patients in the home were given 5-tuberculin unit purified protein derivative (PPD) Mantoux skin tests (Table 1). The reaction rate was significantly higher for patients in the east wing (71% of patients, whose mean age was 40 years) than for those in other wings (34% of patients, whose mean age was 72 years, $p < 0.001$). All patients in the east wing also had chest X rays and 5, including one whose skin test had been negative, had findings consistent with pulmonary tuberculosis. Efforts to obtain satisfactory sputum specimens from these patients were unsuccessful. Despite the fact that *M. tuberculosis* was not isolated, these patients were treated with INH, rifampin, and ethambutol. All other patients whose skin tests had been positive had negative chest X rays and were placed on INH preventive therapy. Preventive therapy was discontinued for 4 because of possible adverse reactions. After 6 months, monthly monitoring of SGOT† levels was discontinued because no abnormalities were found.

TABLE 1. Results of tuberculin skin testing of nursing home patients, by location, Oklahoma, 1978

Patient characteristics	East wing	North and front wings
Number of patients	48	87
Mean age in years	40	72
PPD reaction ≥10 mm, without a history of tuberculosis	34(71%)‡	30(34%)‡
Chest X ray consistent with pulmonary tuberculosis	5	1

‡$X^2 = 14.97$, $p < 0.001$

The investigation also included skin testing of all nursing home employees. The home employed 91 full-time and part-time employees, although turnover rates were as high as 25% per month. Of the employees tested in October 1978, 61 (67%) were negative after 2 tests and 30 (33%) were positive (Table 2). Employees with positive skin tests and those with negative skin tests were of comparable sex, age, and race. Twenty-eight of the 30 employees whose tests were positive had chest X rays, all of which were negative. Retesting in January 1979 showed that 3 more employees had become positive. The reaction rate was significantly higher for employees who had ever worked in the east wing (50%) than for those who had never worked in the east wing (23%, $p < 0.02$).

Reported by Stephens County Health Dept; G Dewberry, MD, H Gretz, RN, R Shiek, RN, M Roberts, PhD, State Epidemiologist, Oklahoma State Dept of Health; Field Services Div, Bur of Epidemiology, and Tuberculosis Control Div, Bur of State Services, CDC.

†Serum glutamic oxaloacetic transaminase.

Tuberculosis – Continued

TABLE 2. Results of tuberculin skin testing of nursing home employees, by work area, Oklahoma, 1978

Employee characteristics	Work area unknown	Ever worked in east wing	Never worked in east wing
Number of employees	3	36	52
PPD reaction ≥10 mm	0	18(50%) §	12(23%) §

§ $X^2 = 5.71$, $p<0.02$

Editorial Note: This investigation illustrates the potential for transmission of tuberculosis among institutionalized persons such as those in prisons (*1*) or nursing homes. Most nursing home patients are in the older age groups—groups with high rates of tuberculosis infection and disease—and they often have other chronic diseases that may mask the symptoms of tuberculosis. Furthermore, complicating medical conditions may contribute to skin-test anergy in this group.

Because of problems in administering skin tests to older patients and in interpreting the results, screening for tuberculosis in nursing homes should consist of both a chest X ray and a 2-step tuberculin skin test on admission (*2*). Patients whose tests are positive and/or whose X rays are consistent with tuberculosis should be thoroughly evaluated to exclude current disease. INH preventive therapy should be given according to published recommendations (*3*).

Patients with positive skin tests and negative chest X rays who have not completed a course of preventive therapy should be carefully monitored for symptoms suggesting tuberculosis; periodic chest X rays are not recommended. Repeat skin testing of patients whose skin tests have been negative is not recommended unless they are exposed to a case of infectious tuberculosis.

Screening of employees should consist of 2-step skin testing when they are hired and appropriate follow-up and treatment of those who are tuberculin positive. The advisability of retesting each year depends on the prevalence of tuberculosis in the community and the likelihood of exposure to tuberculosis in the nursing home; employees who have been tuberculin negative should be retested if exposed to a case of infectious tuberculosis.

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1. Stead WW. Undetected tuberculosis in prison. source of infection for community at large. JAMA 1978;240:2544-7.
2. Thompson NJ, Glassroth JL, Snider DE, Farer LS. The booster phenomenon in serial tuberculin testing. Am Rev Respir Dis 1979;119:587-97.
3. American Thoracic Society, American Lung Association, and Center for Disease Control. Preventive therapy of tuberculous infection. Am Rev Respir Dis 1974;110:371-4.

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