



- 617 Aquarium-Associated *Plesiomonas shigelloides* Infection – Missouri
619 Eastern Equine Encephalitis – United States, 1989

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Aquarium-Associated *Plesiomonas shigelloides* Infection – Missouri

In July 1988, a community hospital in southeastern Missouri reported isolating *Plesiomonas shigelloides* from the stool of a 14-month-old girl with watery diarrhea (no blood or mucus) and fever. Her highest recorded rectal temperature was 102 F (38.9 C). Her stool was negative for *Campylobacter*, *Salmonella*, *Shigella*, *Yersinia*, *Aeromonas*, and rotavirus. The child was treated with trimethoprim/sulfamethoxazole, and her illness resolved after 5 days.

The child had consumed no shellfish and had never traveled more than 80 miles from her home. She had consumed water only from the municipal system and recently had waded in two area lakes. She attended a day-care center, but no other children in her age group were reported ill. The child did not have an aquarium or other close association with animals. However, 1 evening each week, the child stayed in the home of a babysitter who kept piranhas in an aquarium. When the aquarium was cleaned, the water was poured into the bathtub. The child routinely was bathed in the bathtub before going home. The babysitter reported that the child could have been bathed immediately after the aquarium water had been poured into the bathtub.

P. shigelloides was isolated from samples of aquarium water submitted to the State Public Health Laboratory. However, plasmid studies were not performed, and it was not determined whether the bacterial strain isolated from the child's stool was identical to that isolated from the babysitter's aquarium.

To estimate the prevalence of *P. shigelloides* in tropical fish tanks, investigators from the Missouri Department of Health (MDH) surveyed aquarium water samples from several sites in Missouri (Table 1). Samples were taken from 18 aquariums, including at least two tanks from each of Missouri's six regional health districts. *P. shigelloides* was isolated from four (22%) of the 18 tanks. The four tanks were located in three different pet shops: two in central Missouri and one in eastern Missouri. Employees of the three pet shops reported no health problems in the fish in the culture-positive tanks.

MDH advised managers of all surveyed pet shops to have employees wash hands after contact with aquarium water or fish. No special precautions were recommended to managers of shops from which *P. shigelloides* was isolated. In addition, the babysitter was advised to clean the tub thoroughly using chlorine bleach after discarding the aquarium water and before using the tub for bathing.

Plesiomonas shigelloides — Continued

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Editorial Note: *P. shigelloides*, a gram-negative bacterial rod, is an opportunistic pathogen in the immunocompromised host and has been suspected to cause diarrheal illness in normal hosts (1,2). However, the organism failed to produce illness in volunteer feeding studies, and its role as an enteric pathogen remains unproven (1). Persons with *P. shigelloides* infection typically describe a self-limited diarrhea, sometimes with blood and mucus in the stool; appropriate antibiotic therapy appears to shorten the duration of illness (3,4). *P. shigelloides* can also cause cellulitis and septicemia.

This organism has been isolated from surface water, the gut of freshwater fish, and many animals (including dogs and cats) and is particularly common in tropical and subtropical habitats (5). In humans, most isolates have been from stools of patients with diarrhea who live in tropical and subtropical regions of Asia, Africa, and Australia; isolations from Europe and the United States have been rare and usually associated with foreign travel or consumption of raw oysters (3,6).

Although no other *P. shigelloides* gastrointestinal infections associated with aquarium water have been reported, the frequency of *P. shigelloides* in pet shop aquariums reported here suggests this could be a source of this rarely recognized infection. Basic precautions, such as handwashing after contact with aquarium water and preventing the contamination of potable or bathing water by aquarium water, should decrease transmission of potentially pathogenic microorganisms from aquarium water.

TABLE 1. Results of aquarium survey for *Plesiomonas shigelloides* — Missouri, 1988

Source	Fish species present	<i>P. shigelloides</i> isolated
Pet shop	Firemouths	Yes
Pet shop	Marigold tux variatus	Yes
Pet shop	Oscars	Yes
Pet shop	Swordtails, barbs, gourami	Yes
Pet shop	African chichlids	No
Pet shop	Angelfish	No
Pet shop	Discus	No
Pet shop	Goldfish	No
Pet shop	Mollies	No
Pet shop	Oscars, firemouths, Jack Dempseys	No
Pet shop	Pictus catfish, colored glass	No
Pet shop	Piranhas	No
Pet shop	Sharks	No
Pet shop	Zebra danio	No
Commercial display	Oscars	No
Private home	Chinese algae eaters, goldfish	No
Private home	Mauris, catfish	No
Private home	Tetras	No

Plesiomonas shigelloides – Continued

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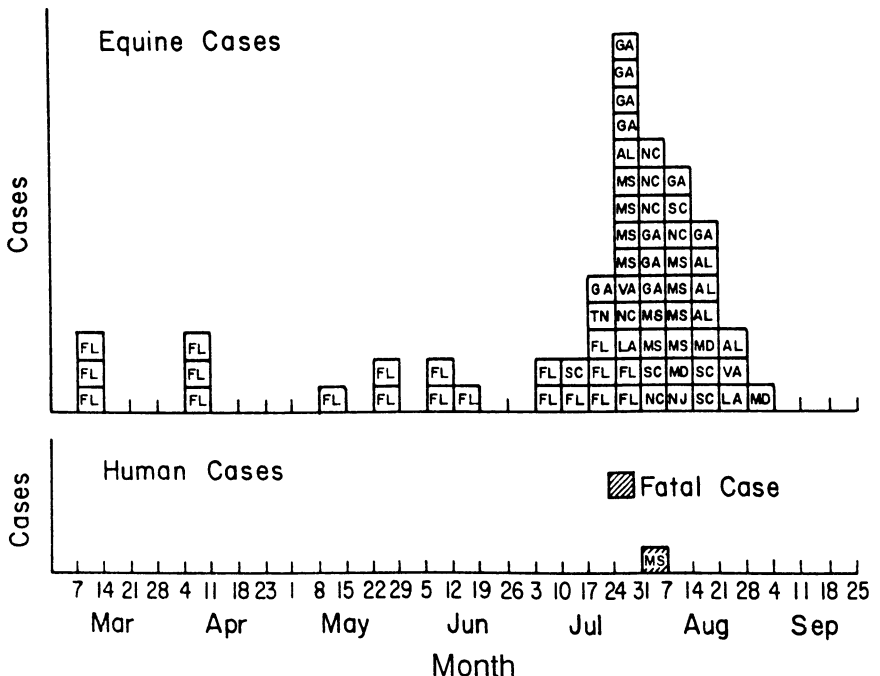
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Eastern Equine Encephalitis – United States, 1989

As of August 31, 11 states have reported to CDC one fatal human case and 65 equine cases of eastern equine encephalitis (EEE) in 1989 (Figure 1 and Figure 2, page 625). The human case, confirmed serologically, occurred in an 11-year-old boy in Mississippi who died of encephalitis on August 6. Equine cases have been confirmed serologically (40 cases) or by viral isolation from brain (25 cases).

Despite the routine application of larvicides and adulticides by state and local agencies, pest and vector mosquitoes, including those that transmit EEE, have been

FIGURE 1. Reported eastern equine encephalitis cases – United States, 1989



Eastern Equine Encephalitis – Continued

abundant this year in several eastern coastal locations. For example, on Maryland's eastern shore, *Aedes sollicitans* mosquito collections in light traps have exceeded 50,000 per trap per night. In late July, an EEE epornitic (i.e., an outbreak in a bird population) occurred in a pheasant flock on Maryland's eastern shore, leading to 20 deaths among approximately 1500 fowl. Four equine cases from the DelMarVa Peninsula and on Assateague and Chincoteague islands off the Maryland and Virginia coast have been confirmed, and other clinically suspected cases have been reported from this area. Emergency widespread aerial applications of adulticides over Assateague Island and adjacent mainland recreational areas were conducted in the last week of August.

Reported by: State and local health departments. Div of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC.

(Continued on page 625)

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

Disease	36th Week Ending			Cumulative, 36th Week Ending		
	Sep. 9, 1989	Sep. 10, 1988	Median 1984-1988	Sep. 9, 1989	Sep. 10, 1988	Median 1984-1988
Acquired Immunodeficiency Syndrome (AIDS)	364	U*	150	23,312	21,520	8,621
Aseptic meningitis	238	240	351	5,030	4,034	5,416
Encephalitis: Primary (arthropod-borne & unspec)	18	18	40	497	562	728
Post-infectious	-	4	4	63	91	84
Gonorrhea: Civilian	14,343	11,728	14,022	454,280	471,976	567,666
Military	175	195	267	7,314	8,379	11,649
Hepatitis: Type A	588	474	436	23,404	17,110	15,144
Type B	338	429	445	15,535	15,572	17,597
Non A, Non B	37	47	61	1,627	1,845	2,510
Unspecified	39	27	63	1,619	1,465	3,123
Legionellosis	21	28	19	684	681	487
Leprosy	3	1	3	111	115	154
Malaria	33	33	31	835	658	658
Measles: Total [†]	166	34	34	10,322	2,204	2,417
Indigenous	142	32	32	9,857	1,975	2,043
Imported	24	2	2	465	229	267
Meningococcal infections	20	27	30	1,946	2,114	2,032
Mumps	38	36	35	4,012	3,472	3,472
Pertussis	80	116	134	2,106	1,875	1,875
Rubella (German measles)	1	7	7	298	159	426
Syphilis (Primary & Secondary): Civilian	541	554	438	27,339	27,934	19,147
Military	5	-	1	168	112	122
Toxic Shock syndrome	8	7	7	258	245	250
Tuberculosis	322	351	357	14,315	14,364	14,572
Tularemia	4	2	4	112	145	145
Typhoid Fever	9	12	12	328	247	234
Typhus fever, tick-borne (RMSF)	44	27	27	455	471	503
Rabies, animal	98	74	122	3,286	2,976	3,697

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1989		Cum. 1989
Anthrax	-	Leptospirosis (N.C. 1)	68
Botulism: Foodborne (Wash. 3)	18	Plague	3
Infant	9	Poliomyelitis, Paralytic	-
Other	4	Psittacosis (Ohio 1, Tex. 1, Wyo. 1, Calif. 1)	71
Brucellosis	58	Rabies, human	1
Cholera	-	Tetanus	31
Congenital rubella syndrome	2	Trichinosis	13
Congenital syphilis, ages < 1 year (NYC 1)	158		
Diphtheria	2		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.

[†]Seven of the 166 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 9, 1989 and September 10, 1988 (36th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
			Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989		
UNITED STATES	23,312	5,030	497	63	454,280	471,976	23,404	15,535	1,627	1,619	684	111
NEW ENGLAND	963	280	17	2	13,708	14,563	493	768	56	61	45	7
Maine	46	12	5	-	182	288	13	41	5	1	5	-
N.H.	35	23	-	-	116	187	49	44	8	4	1	-
Vt.	10	27	2	-	44	90	28	62	5	-	1	-
Mass.	517	98	5	2	5,308	4,980	145	454	23	46	29	5
R.I.	56	49	-	-	998	1,208	27	47	4	3	9	1
Conn.	299	71	5	-	7,060	7,810	231	120	11	7	-	1
MID. ATLANTIC	6,705	409	52	5	57,293	75,515	2,689	2,277	154	194	178	17
Upstate N.Y.	886	203	19	4	10,645	9,085	574	422	55	6	52	3
N.Y. City	3,433	86	2	1	25,023	34,501	273	839	28	164	23	12
N.J.	1,611	-	31	-	10,614	10,340	297	445	24	5	36	1
Pa.	775	120	-	-	11,011	21,589	1,545	571	47	19	67	11
E.N. CENTRAL	1,912	900	165	6	85,697	78,043	1,323	1,909	186	68	184	3
Ohio	341	240	58	2	22,525	17,736	288	355	32	16	87	-
Ind.	251	145	29	3	6,254	6,157	153	328	22	26	38	1
Ill.	876	164	30	1	28,172	22,108	582	492	70	16	14	2
Mich.	351	301	34	-	22,251	25,192	194	464	40	10	29	-
Wis.	93	50	14	-	6,495	6,850	106	270	22	-	16	-
W.N. CENTRAL	559	251	24	3	21,382	19,859	832	682	74	23	28	1
Minn.	118	7	-	1	2,389	2,682	73	68	14	3	2	-
Iowa	38	42	8	-	1,813	1,471	72	25	12	5	5	-
Mo.	271	117	2	-	13,181	11,423	473	485	26	9	11	-
N. Dak.	6	12	1	-	83	123	4	17	4	2	1	-
S. Dak.	4	7	4	-	178	361	10	7	5	-	2	-
Nebr.	25	8	5	-	922	1,069	64	18	2	2	2	1
Kans.	97	58	4	2	2,816	2,730	136	62	11	2	5	-
S. ATLANTIC	4,850	1,066	88	22	129,269	133,687	2,219	2,995	246	254	85	1
Del.	59	47	1	-	2,132	2,051	31	105	5	8	7	-
Md.	474	129	14	2	14,979	13,691	601	527	22	25	23	-
D.C.	382	8	-	-	8,287	10,006	4	19	2	-	-	-
Va.	328	174	30	3	10,924	9,256	211	218	55	146	6	-
W. Va.	32	40	34	-	995	950	15	73	9	4	-	-
N.C.	353	117	4	2	19,620	18,752	311	729	63	-	23	1
S.C.	240	26	-	-	11,853	10,332	49	417	3	10	4	-
Ga.	749	82	1	1	24,718	25,723	243	287	9	8	13	-
Fla.	2,233	383	4	14	35,761	42,926	754	620	78	53	9	-
E.S. CENTRAL	495	460	21	2	37,717	36,956	278	1,116	110	5	36	-
Ky.	78	135	8	1	3,572	3,742	84	299	35	4	9	-
Tenn.	156	82	-	-	12,822	12,433	112	592	22	-	18	-
Ala.	154	173	12	-	11,899	11,274	58	161	49	1	9	-
Miss.	107	70	1	1	9,424	9,507	24	64	4	-	-	-
W.S. CENTRAL	2,113	631	48	4	49,455	51,660	2,639	1,538	106	370	35	16
Ark.	57	25	6	-	5,806	5,145	177	55	11	6	1	-
La.	346	51	10	-	10,482	10,510	189	267	12	1	5	-
Okla.	101	56	11	2	4,166	4,855	311	146	22	26	20	-
Tex.	1,609	499	21	2	29,001	31,150	1,962	1,070	61	337	9	16
MOUNTAIN	712	198	8	3	9,949	10,297	3,538	1,052	156	111	38	2
Mont.	13	5	-	-	135	320	60	38	6	2	2	1
Idaho	18	1	-	1	134	255	122	92	11	3	-	-
Wyo.	13	4	-	-	70	147	38	4	2	-	-	-
Colo.	224	97	1	1	2,090	2,271	389	128	42	47	3	-
N. Mex.	52	8	1	-	944	993	447	151	28	2	3	-
Ariz.	212	60	3	-	3,881	3,716	1,826	388	36	48	19	1
Utah	48	15	1	1	318	390	381	84	21	4	7	-
Nev.	132	8	2	-	2,377	2,205	275	167	10	5	4	-
PACIFIC	5,003	895	74	16	49,810	51,396	9,393	3,198	539	533	55	64
Wash.	401	-	2	1	4,516	4,891	2,266	708	150	42	19	6
Oreg.	174	-	-	-	2,186	2,204	1,640	345	54	10	1	1
Calif.	4,306	820	60	15	42,040	43,144	4,841	2,039	322	467	32	53
Alaska	11	15	9	-	690	726	503	44	5	4	1	-
Hawaii	111	60	3	-	378	431	143	62	8	10	2	4
Guam	1	-	-	-	-	106	-	-	-	-	-	-
P.R.	885	65	2	1	739	947	143	171	16	18	-	8
V.I.	26	-	-	-	491	318	-	6	-	-	-	-
Amer. Samoa	-	-	-	-	-	65	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	34	-	-	-	-	-	-

N: Not notifiable

U: Unavailable

C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 9, 1989 and September 10, 1988 (36th Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total		1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	1989	Cum. 1989	Cum. 1988
		1989	Cum. 1989	1989	Cum. 1989	Cum. 1988									
UNITED STATES	835	142	9,857	24	465	2,204	1,946	38	4,012	80	2,106	1,875	1	298	159
NEW ENGLAND	48	3	284	5	35	108	141	2	72	9	270	213	-	6	5
Maine	-	-	-	-	1	7	13	-	-	-	9	11	-	-	-
N.H.	2	3	11	15	4	87	15	-	13	-	5	34	-	4	3
Vt.	2	-	1	-	2	-	6	-	3	-	6	3	-	1	-
Mass.	26	-	28	4†	21	3	75	1	48	7	224	138	-	1	1
R.I.	10	-	38	-	3	-	1	-	-	-	11	10	-	-	1
Conn.	8	-	206	-	4	11	31	1	8	2	15	17	-	-	-
MID. ATLANTIC	145	6	644	-	170	861	264	4	368	2	125	106	-	25	12
Upstate N.Y.	22	-	42	-	98	37	90	2	135	-	45	65	-	10	2
N.Y. City	49	2	81	-	14	46	33	-	18	-	3	4	-	15	7
N.J.	40	-	318	-	-	241	55	-	160	-	21	4	-	-	1
Pa.	34	4	203	-	58	537	86	2	55	2	56	33	-	-	2
E.N. CENTRAL	65	110	2,564	1	65	180	244	1	433	3	202	207	-	24	26
Ohio	9	103	902	-	35	25	89	-	118	-	45	25	-	3	1
Ind.	9	-	78	-	-	57	28	-	40	1	19	58	-	-	-
Ill.	28	-	1,099	-	-	71	66	-	137	-	79	38	-	19	21
Mich.	12	7	302	15	15	23	45	1	107	2	33	30	-	1	4
Wis.	7	-	183	-	15	4	16	-	31	-	26	56	-	1	-
W.N. CENTRAL	26	-	632	-	4	13	70	3	368	-	116	105	-	6	2
Minn.	7	-	15	-	-	11	11	-	1	-	18	48	-	-	-
Iowa	3	-	8	-	1	-	2	2	33	-	13	20	-	1	-
Mo.	9	-	369	-	-	2	22	1	53	-	75	15	-	4	-
N. Dak.	1	-	-	-	-	-	-	-	-	-	2	11	-	-	-
S. Dak.	1	-	-	-	-	-	7	-	-	-	1	5	-	-	-
Nebr.	2	-	108	-	2	-	17	-	5	-	4	-	-	-	-
Kans.	3	-	132	-	1	-	11	-	276	-	3	6	-	1	2
S. ATLANTIC	144	5	523	2	49	324	333	7	682	11	208	197	-	9	17
Del.	6	-	65	-	1	-	2	-	1	-	1	7	-	-	-
Md.	24	2	48	25	33	14	58	4	358	7	36	32	-	2	1
D.C.	8	-	24	-	3	-	15	-	111	-	-	1	-	-	-
Va.	25	1	20	-	3	143	37	2	99	1	25	21	-	-	11
W. Va.	2	-	51	-	-	6	12	-	10	-	21	8	-	-	-
N.C.	18	-	168	-	-	4	44	-	27	-	40	55	-	1	-
S.C.	6	-	3	-	-	-	22	-	20	-	-	1	-	-	-
Ga.	9	-	1	-	1	-	59	-	27	-	28	31	-	-	2
Fla.	46	2	143	-	8	157	84	1	29	3	57	41	-	6	3
E.S. CENTRAL	8	7	208	1	3	69	60	3	202	10	96	73	-	2	2
Ky.	-	5	35	15	3	35	35	-	9	-	1	12	-	-	-
Tenn.	1	2	127	-	-	-	4	1	68	5	36	20	-	2	2
Ala.	5	-	46	-	-	-	18	1	19	5	57	37	-	-	-
Miss.	2	-	-	-	-	34	3	N	N	-	2	4	-	-	-
W.S. CENTRAL	46	10	3,097	6	48	14	136	10	1,297	2	240	94	-	36	6
Ark.	-	-	-	38	8	1	9	1	128	2	20	11	-	-	2
La.	2	-	11	-	-	-	37	7	551	-	14	16	-	5	-
Okla.	6	-	122	-	-	8	22	-	187	-	43	40	-	1	1
Tex.	38	10	2,964	3†	40	5	68	2	431	-	163	27	-	30	3
MOUNTAIN	20	1	352	9	35	139	61	2	159	13	500	542	-	34	6
Mont.	1	-	12	-	1	24	1	-	2	2	31	2	-	1	-
Idaho	2	-	-	-	2	1	2	-	15	-	57	292	-	31	-
Wyo.	1	-	-	-	-	-	-	-	8	-	-	1	-	1	-
Colo.	5	-	64	95	15	114	19	-	26	1	33	14	-	-	2
N. Mex.	1	-	16	-	15	-	2	N	N	2	23	43	-	-	-
Ariz.	7	1	141	-	-	-	24	-	92	8	341	167	-	-	-
Utah	-	-	118	-	-	-	5	2	10	-	14	22	-	-	3
Nev.	3	-	1	-	2	-	8	-	6	-	1	1	-	1	1
PACIFIC	333	-	1,553	-	56	496	637	6	431	30	349	338	1	156	83
Wash.	24	-	28	-	13	2	67	-	36	11	141	79	-	-	-
Oreg.	18	-	9	-	19	3	43	N	N	-	7	26	-	3	-
Calif.	281	-	1,497	-	15	479	521	5	379	11	184	174	1	130	57
Alaska	4	-	1	-	-	-	4	-	2	-	1	7	-	-	-
Hawaii	6	-	18	-	9	12	2	1	14	8	16	52	-	23	26
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	1
P.R.	1	12	490	-	-	190	4	-	8	-	4	13	-	8	2
V.I.	-	-	4	-	-	-	-	1	15	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International ‡Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 9, 1989 and September 10, 1988 (36th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	27,339	27,934	258	14,315	14,364	112	328	455	3,286
NEW ENGLAND	1,168	759	13	397	353	2	26	7	8
Maine	8	12	3	12	17	-	-	-	2
N.H.	10	6	1	19	8	-	-	-	1
Vt.	-	3	-	7	3	-	-	-	-
Mass.	360	288	4	202	200	2	16	4	2
R.I.	21	24	2	47	32	-	5	1	-
Conn.	769	426	3	110	93	-	5	2	3
MID. ATLANTIC	4,933	7,070	39	2,777	2,829	2	98	53	531
Upstate N.Y.	615	376	7	233	369	1	25	11	44
N.Y. City	2,534	5,141	2	1,519	1,520	-	48	3	-
N.J.	970	635	9	562	476	-	19	21	-
Pa.	814	918	21	463	464	1	6	18	487
E.N. CENTRAL	1,232	782	42	1,508	1,568	3	35	55	90
Ohio	102	74	12	259	297	-	7	28	8
Ind.	46	39	7	114	160	1	2	19	2
Ill.	544	355	9	692	678	-	18	6	21
Mich.	439	275	14	357	360	1	6	2	18
Wis.	101	39	-	86	73	1	2	-	41
W.N. CENTRAL	229	162	31	361	373	43	5	66	430
Minn.	35	16	7	71	61	-	1	-	93
Iowa	27	17	5	28	39	-	2	2	110
Mo.	119	100	7	170	185	32	1	51	33
N. Dak.	2	2	-	11	12	-	-	1	44
S. Dak.	1	-	4	18	26	6	-	3	71
Nebr.	17	21	5	18	10	1	-	-	39
Kans.	28	6	3	45	40	4	1	9	40
S. ATLANTIC	9,950	9,687	23	3,075	3,089	6	29	155	993
Del.	121	74	1	25	28	-	2	1	25
Md.	537	524	1	254	299	2	7	9	281
D.C.	608	473	1	138	132	-	2	-	2
Va.	373	274	4	248	276	4	4	7	192
W. Va.	13	34	-	54	54	-	-	-	42
N.C.	725	549	6	384	312	-	2	93	7
S.C.	588	479	4	347	338	-	2	25	159
Ga.	1,955	1,639	3	465	511	-	3	15	173
Fla.	5,030	5,641	3	1,160	1,139	-	7	3	112
E.S. CENTRAL	1,916	1,361	5	1,139	1,185	6	2	42	259
Ky.	40	46	1	283	280	1	1	12	111
Tenn.	824	583	3	321	326	4	-	25	55
Ala.	596	409	1	331	365	-	1	3	90
Miss.	456	323	-	204	214	1	-	2	3
W.S. CENTRAL	4,003	2,919	22	1,698	1,791	34	13	52	456
Ark.	258	170	1	177	194	24	-	14	62
La.	954	564	-	233	200	-	1	-	7
Okla.	67	107	12	148	168	10	1	32	75
Tex.	2,724	2,078	9	1,140	1,229	-	11	6	312
MOUNTAIN	550	541	37	309	410	11	6	21	196
Mont.	1	3	-	11	12	1	-	14	64
Idaho	1	2	3	21	14	-	-	2	6
Wyo.	5	1	2	-	2	2	-	2	61
Colo.	55	79	5	19	69	2	2	3	21
N. Mex.	21	39	5	60	79	2	-	-	18
Ariz.	185	116	9	139	170	-	3	-	21
Utah	13	12	9	26	18	3	1	-	2
Nev.	269	289	4	33	46	1	-	-	3
PACIFIC	3,358	4,653	46	3,051	2,766	5	114	4	323
Wash.	252	158	3	160	147	-	6	-	-
Oreg.	175	198	-	97	102	3	5	1	-
Calif.	2,917	4,263	42	2,637	2,382	2	94	3	260
Alaska	5	10	-	35	27	-	-	-	63
Hawaii	9	24	1	122	108	-	9	-	-
Guam	-	3	-	-	19	-	-	-	-
P.R.	385	430	-	210	165	-	4	-	50
V.I.	8	1	-	4	6	-	-	-	-
Amer. Samoa	-	-	-	-	3	-	-	-	-
C.N.M.I.	-	1	-	-	17	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending
September 9, 1989 (36th Week)

Reporting Area	All Causes, By Age (Years)						P&I**	Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	586	387	125	44	15	15	51	S. ATLANTIC	1,027	602	219	118	44	43	57
Boston, Mass.	152	91	31	20	3	7	22	Atlanta, Ga.	132	83	25	14	6	4	2
Bridgeport, Conn.	46	28	12	4	2	-	4	Baltimore, Md.	164	97	38	19	6	4	11
Cambridge, Mass.	20	16	2	2	-	-	1	Charlotte, N.C.	51	28	10	8	4	1	5
Fall River, Mass.	21	17	2	1	1	-	1	Jacksonville, Fla.	89	58	19	8	3	1	6
Hartford, Conn.	68	45	18	1	2	2	2	Miami, Fla.	99	54	20	16	9	-	3
Lowell, Mass.	23	13	5	4	1	-	2	Norfolk, Va.	46	32	7	5	1	1	-
Lynn, Mass.	14	9	3	1	1	-	-	Richmond, Va.	76	42	17	5	1	10	8
New Bedford, Mass.	22	14	4	3	1	-	1	Savannah, Ga.	47	25	7	9	1	5	8
New Haven, Conn.	27	18	4	3	-	2	4	St. Petersburg, Fla.	42	36	1	3	-	2	5
Providence, R.I.	52	42	9	-	1	-	5	Tampa, Fla.	56	37	15	2	2	-	2
Somerville, Mass.	8	5	2	1	-	-	1	Washington, D.C.	201	89	57	29	11	15	7
Springfield, Mass.	50	30	16	1	1	2	1	Wilmington, Del.	24	21	3	-	-	-	-
Waterbury, Conn.	27	22	4	1	-	-	2	E.S. CENTRAL	684	421	151	55	27	30	28
Worcester, Mass.	56	37	13	2	2	2	6	Birmingham, Ala.	105	58	25	7	4	11	1
MID. ATLANTIC	2,419	1,520	468	292	84	55	109	Chattanooga, Tenn.	53	32	13	4	3	1	3
Albany, N.Y.	40	31	3	3	1	2	-	Knoxville, Tenn.	80	56	16	5	3	-	5
Allentown, Pa.	21	17	3	1	-	-	1	Louisville, Ky.	119	70	33	8	5	3	-
Buffalo, N.Y.‡	116	83	23	7	1	2	8	Memphis, Tenn.	173	105	36	15	6	11	11
Camden, N.J.	29	17	8	-	4	-	-	Mobile, Ala.	45	29	5	7	2	2	2
Elizabeth, N.J.	29	19	9	1	-	-	3	Montgomery, Ala.	19	13	4	-	1	1	-
Erie, Pa.†	45	35	7	3	-	-	3	Nashville, Tenn.	90	58	19	9	3	1	6
Jersey City, N.J.	48	23	15	3	4	3	3	W.S. CENTRAL	1,600	971	354	169	61	45	55
N.Y. City, N.Y.	1,333	791	261	204	46	31	44	Austin, Tex.	40	24	7	4	2	3	1
Newark, N.J.	102	49	17	21	7	8	4	Baton Rouge, La.	47	34	8	3	2	-	-
Paterson, N.J.	29	17	9	2	1	-	1	Corpus Christi, Tex.	39	21	13	3	1	1	2
Philadelphia, Pa.	202	139	36	21	6	-	14	Dallas, Tex.	177	93	39	26	10	9	4
Pittsburgh, Pa.†	59	39	11	4	4	1	6	El Paso, Tex.	40	27	4	6	1	2	-
Reading, Pa.	33	23	7	2	1	-	1	Fort Worth, Tex	76	47	12	9	5	3	4
Rochester, N.Y.	120	84	17	7	7	5	9	Houston, Tex.‡	734	436	169	89	24	16	18
Schenectady, N.Y.	29	25	3	-	-	-	2	Little Rock, Ark.	47	31	13	1	-	2	2
Scranton, Pa.†	30	23	6	1	-	-	2	New Orleans, La.	138	85	30	10	10	3	-
Syracuse, N.Y.	95	64	22	5	2	2	3	San Antonio, Tex.	134	85	32	10	5	2	15
Trenton, N.J.	26	18	7	1	-	-	2	Shreveport, La.	55	40	11	2	-	2	3
Utica, N.Y.	16	13	1	2	-	-	2	Tulsa, Okla.	73	48	16	6	1	2	6
Yonkers, N.Y.	17	10	3	4	-	-	1	MOUNTAIN	572	352	113	57	24	24	21
E.N. CENTRAL	1,960	1,279	413	148	54	66	73	Albuquerque, N. Mex.	76	53	11	5	3	4	3
Akron, Ohio	62	42	12	4	2	2	-	Colo. Springs, Colo.	31	17	2	7	4	1	2
Canton, Ohio	29	22	6	-	-	1	1	Denver, Colo.	97	57	20	10	2	8	2
Chicago, Ill.‡	564	362	125	45	10	22	16	Las Vegas, Nev.	84	47	21	11	3	1	6
Cincinnati, Ohio	100	69	20	5	3	3	12	Ogden, Utah	22	17	5	-	-	-	1
Cleveland, Ohio	130	76	32	13	7	2	5	Phoenix, Ariz.	125	76	25	14	6	4	2
Columbus, Ohio	99	67	18	6	3	5	-	Pueblo, Colo.	22	14	6	1	-	-	3
Dayton, Ohio	76	50	16	6	2	2	5	Salt Lake City, Utah	34	20	4	3	2	5	1
Detroit, Mich.	204	108	53	26	8	9	3	Tucson, Ariz.	81	51	19	6	4	1	1
Evansville, Ind.	34	24	8	1	1	-	-	PACIFIC	1,400	893	255	146	53	51	83
Fort Wayne, Ind.	51	32	11	1	4	3	1	Berkeley, Calif.	15	12	2	-	-	1	1
Gary, Ind.	18	9	6	3	-	-	2	Fresno, Calif.	76	48	14	6	3	5	5
Grand Rapids, Mich.	57	40	8	6	1	2	7	Glendale, Calif.	18	15	2	1	-	-	1
Indianapolis, Ind.	143	103	24	9	5	2	-	Honolulu, Hawaii	79	56	16	5	1	1	10
Madison, Wis.‡	33	22	7	4	-	-	3	Long Beach, Calif.‡	76	44	14	12	4	2	8
Milwaukee, Wis.	106	66	25	9	1	5	4	Los Angeles Calif.	260	163	44	30	14	7	10
Peoria, Ill.	46	38	5	1	1	1	3	Oakland, Calif.	59	31	15	7	3	3	6
Rockford, Ill.	43	33	6	-	1	3	2	Pasadena, Calif.	24	18	3	-	2	1	1
South Bend, Ind.	53	40	6	5	2	-	2	Portland, Oreg.	85	65	8	7	2	3	4
Toledo, Ohio	68	43	15	4	2	4	4	Sacramento, Calif.	128	66	36	14	5	7	16
Youngstown, Ohio	44	33	10	-	1	-	3	San Diego, Calif.	74	41	16	8	6	3	8
W.N. CENTRAL	605	401	104	52	36	12	19	San Francisco, Calif.	147	88	27	24	3	5	4
Des Moines, Iowa	46	-	8	12	23	3	2	San Jose, Calif.	129	90	18	11	3	7	4
Duluth, Minn.	16	13	1	1	1	-	1	Seattle, Wash.	134	82	25	18	4	5	2
Kansas City, Kans.‡	67	52	10	4	1	-	5	Spokane, Wash.	52	37	11	2	1	1	2
Kansas City, Mo.	88	59	23	3	2	1	2	Tacoma, Wash.	44	37	4	1	2	-	1
Lincoln, Nebr.	35	25	7	2	-	1	-	TOTAL	10,853††	6,826	2,202	1,081	398	341	496
Minneapolis, Minn.	63	44	12	6	-	1	3								
Omaha, Nebr.	75	55	9	5	2	4	3								
St. Louis, Mo.	108	72	21	9	4	2	-								
St. Paul, Minn.	54	44	5	4	1	-	1								
Wichita, Kans.	53	37	8	6	2	-	2								

*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 3 Pennsylvania cities, these numbers are partial counts for the current week.

Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

‡Data not available. Figures are estimates based on average of past available 4 weeks.

Eastern Equine Encephalitis – Continued

Editorial Note: EEE occurs sporadically in the United States, principally in coastal locations in mid-Atlantic and southeastern states. In most years, fewer than five human cases have been reported; however, clinical disease is associated with a case-fatality rate of 30%–70%, and most surviving patients have serious neurologic sequelae (1–3). EEE in horses is usually fatal.

EEE is transmitted in an enzootic cycle among birds and *Culiseta melanura* mosquitoes, an ornithophilic species that seldom bites people. Various mosquito species with catholic feeding habits, including *Ae. vexans*, *Ae. sollicitans*, and *Coquillittidia perturbans*, are chiefly responsible for transmitting infections to humans and horses (1,2,4). This year, following heavy spring and summer rains, several northeastern states that continuously monitor vector mosquito activity have reported the highest numbers of enzootic and epizootic vector mosquitoes ever recorded in their areas.

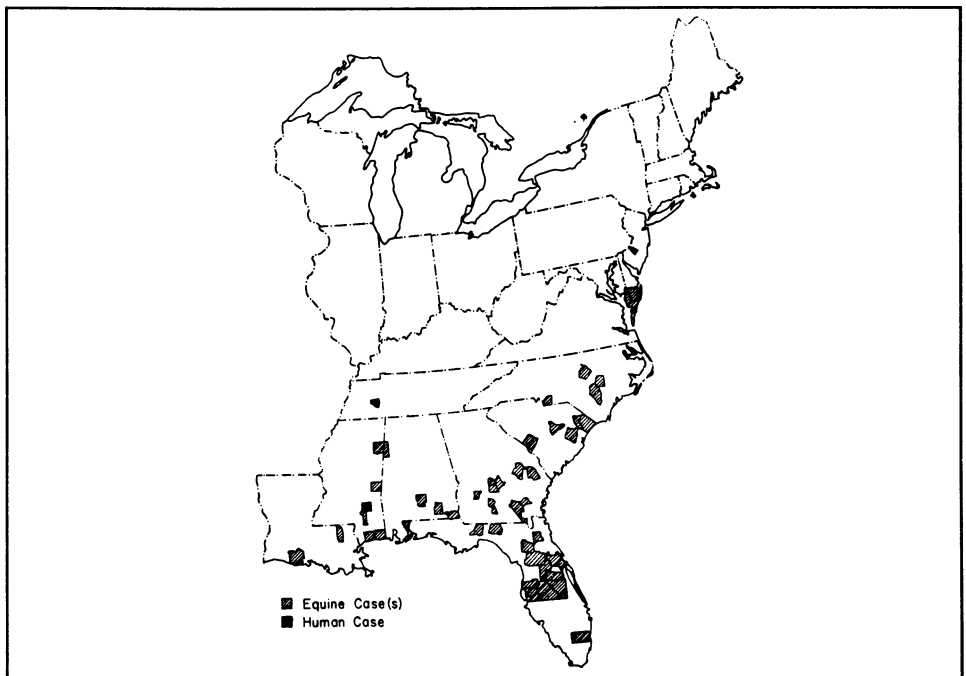
With onset of cooler weather the abundance of mosquitoes is declining in many areas of the eastern seaboard; EEE cases generally decline in late summer, although cases have occurred as late as mid-October (5).

No specific preventive or therapeutic measures against EEE are available. In areas with a potential risk for the disease, protective measures against mosquito exposure – including the use of repellents, appropriate dress, and avoiding outdoor activity in the evening (the peak period of biting activity) – are prudent.

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FIGURE 2. Reported human and equine eastern equine encephalitis cases, by county – United States, 1989



Eastern Equine Encephalitis — Continued

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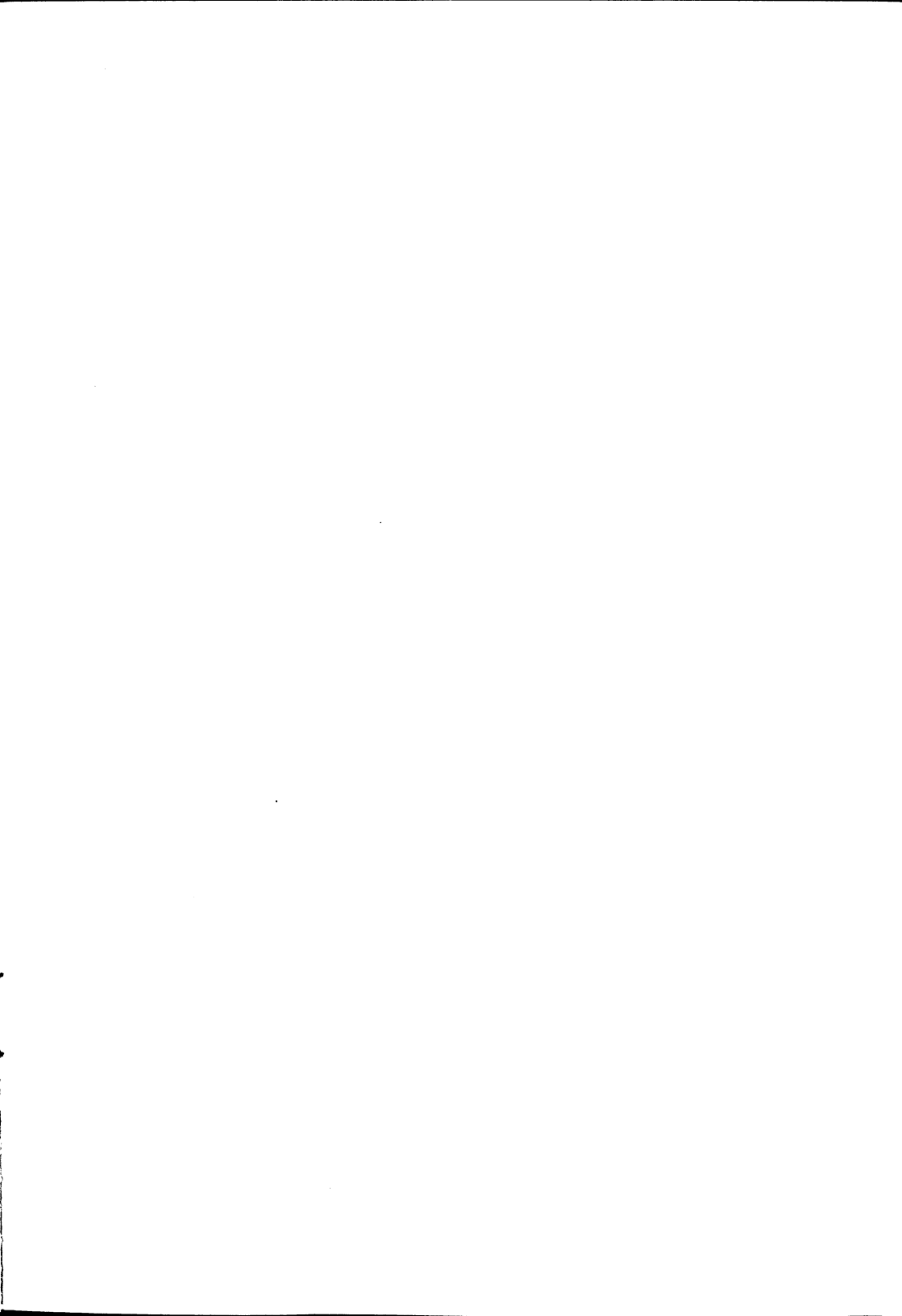
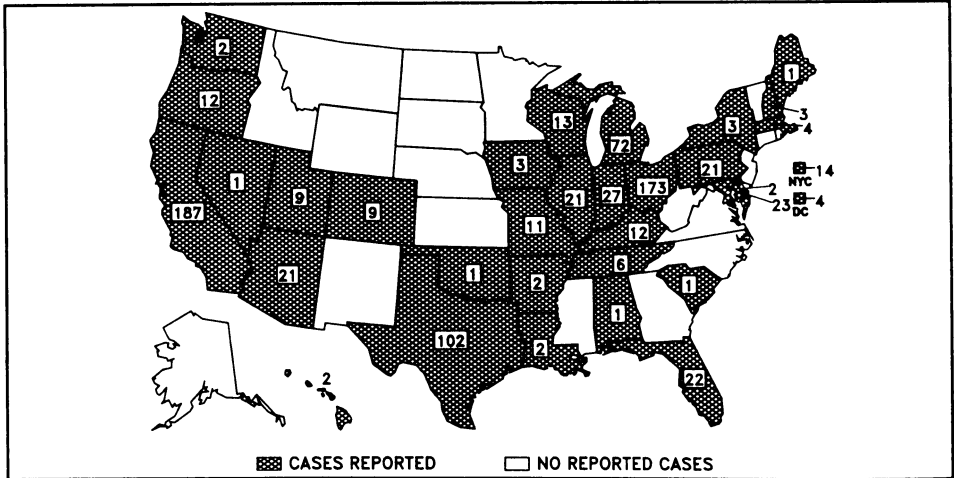


FIGURE I. Reported measles cases – United States, weeks 32-35, 1989



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The data in this report are provisional, based on weekly reports 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. The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

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