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MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports

St. Louis Encephalitis Outbreak — Arkansas, 1991

On August 2, 1991, a neurologist in Pine Bluff (Jefferson County) in central Arkansas notified the Arkansas Department of Health of two patients hospitalized with St. Louis encephalitis (SLE). A hospital chart review and heightened surveillance (i.e., notification of physicians and hospital infection-control coordinators in Jefferson and surrounding counties) subsequently identified 24 confirmed or probable cases of SLE. This report summarizes the findings of the ongoing outbreak investigation.

Cases were defined using standard case definitions for public health surveillance (*1*). Sixteen persons had confirmed SLE (including fever and signs and symptoms of encephalitis or aseptic meningitis and SLE viral-specific IgM in cerebrospinal fluid), and eight persons had probable cases (including these clinical characteristics and viral-specific IgM in serum).

Onset of symptoms for the 24 patients occurred from July 14 through August 17 (Figure 1). All patients resided or worked in Pine Bluff (estimated population: 57,000), and nine lived within a 1 square mile area. Fourteen (58%) patients were female. Eight (33%) cases occurred among persons ≥65 years of age (age range: 5 weeks–85 years). All patients were hospitalized; three have residual neurologic defects, and one patient with chronic myelogenous leukemia died. The crude SLE attack rate for persons in Pine Bluff was 39 per 100,000 population. Cases were clustered in low socioeconomic status census tracts.

On August 6, local and state health officials issued recommendations for the public to curtail evening outdoor activities and to apply insect repellent when outdoors. City residents were encouraged to mend screens and to remove containers that collect water. The Pine Bluff/Jefferson County vector-control office has intensified spraying throughout the city to control *Culex quinquefasciatus*, the suspected mosquito vector. An entomologic survey of Pine Bluff is in progress to measure the distribution and abundance of vector mosquitoes and viral infection rates in vectors. A door-to-door seroepidemiologic survey has been conducted in selected areas to determine the incidence of infection in residents, identify risk factors for infection and illness, and assess behavioral changes in response to the public health messages; analyses of these data are in progress.

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St. Louis Encephalitis — Continued

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Editorial Note: SLE is the leading cause of epidemic viral encephalitis in the United States. Fewer than 1% of infections are clinically apparent. Symptomatic illnesses range in severity from febrile illness and headache to aseptic meningitis or encephalitis. Seven percent of symptomatic cases are fatal (*2*).

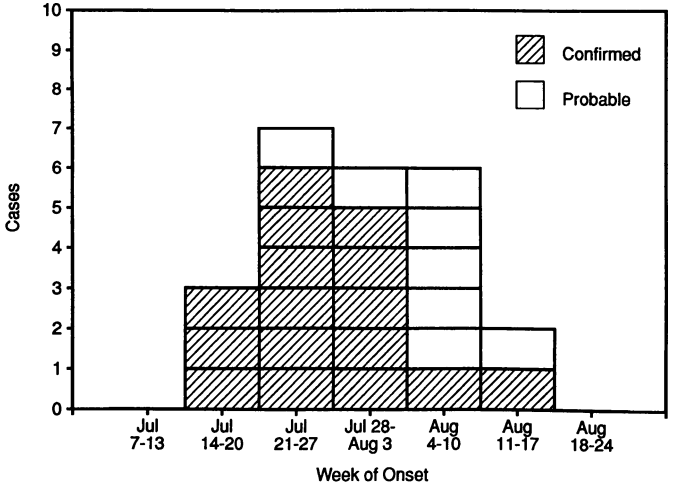
SLE is transmitted in three distinct cycles in the United States (*3*). Passerine birds (e.g., house sparrows [*Passer domesticus*]) are the principal vertebrate amplifying host in all locations. However, mosquito vectors differ in each of the three transmission cycles: in the rural West, *Cx. tarsalis* transmits SLE in an endemic pattern. In northern and southern regions of the central United States, *Cx. pipiens* and *Cx. quinquefasciatus*, respectively, are the principal vectors, and in Florida, *Cx. nigripalpus* is the primary vector.

SLE outbreaks occur at unpredictable intervals in the central United States and Florida. From 1954 through 1977, a series of regional outbreaks occurred at approximately 10-year intervals (1954–1957, 1964–1968, and 1974–1977) (*3,4*). Since 1977, outbreaks have occurred at irregular intervals—on the Gulf Coast in 1980 and 1986 and in Houston and in Florida in 1990. Although 18 SLE cases occurred in scattered geographic areas of Arkansas in 1975, the outbreak in Pine Bluff in 1991 is the first localized epidemic reported from the state.

The epidemiologic characteristics of the outbreak in Pine Bluff are typical of *Cx. quinquefasciatus*-borne SLE in the Mississippi River valley. These outbreaks frequently are focused in older neighborhoods where open drainage ditches and peridomestic mosquito breeding sites (e.g., discarded containers) may be prevalent. Open house foundations, which provide mosquito resting sites, and inadequately screened residences without air conditioning are additional risk factors (*3–5*).

Advanced age is the most clearly defined host factor associated with neuroinvasive SLE. Although SLE attack rates increase with age and mortality is greatest among the elderly, the biologic basis for this increased risk is unknown.

FIGURE 1. Cases of St. Louis encephalitis, by week of onset — Pine Bluff, Arkansas, July and August 1991



St. Louis Encephalitis — Continued

Following the nationwide SLE outbreak in 1975, state and local surveillance systems were established to monitor viral transmission in the enzootic cycle. The premise of these systems is that epidemic transmission can be predicted by identifying viral activity in vector mosquitoes and vertebrate amplifying hosts. The potential utility of this approach was demonstrated in 1986 in Harris County, Texas, and in 1990 in Houston and in Florida (*6,7*). Outbreaks in these locations were predicted from observations of rising mosquito rates or seroconversions in sentinel chickens.

Through September 1991, surveillance in Mobile, Alabama; Florida; Louisiana; and Memphis has not detected substantial levels of viral transmission and/or outbreaks. The absence of viral transmission in areas of Arkansas other than Pine Bluff and in surrounding states indicates the potential for focal transmission and underscores the need for local programs of surveillance and control (*8*).

References

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Health Objectives for the Nation

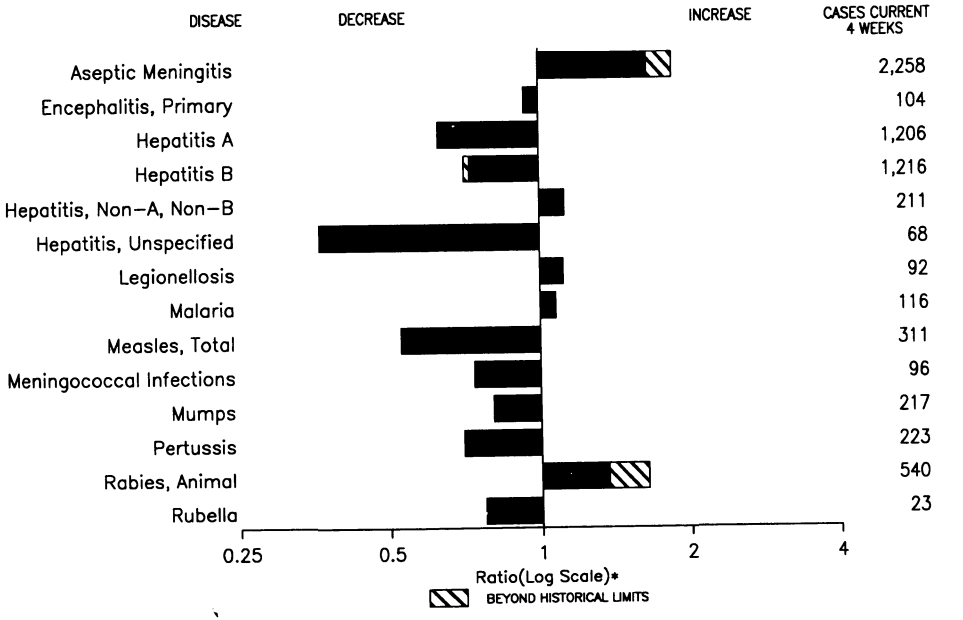
Participation of High School Students in School Physical Education — United States, 1990

Regular physical activity increases a person's ability to perform daily activities with greater vigor and may reduce the risk for specific health problems, including coronary heart disease (*1*), hypertension (*2*), noninsulin-dependent diabetes mellitus (*3*), colon cancer (*4*), and depression (*5*), as well as lower all-cause death rates (*6*). In addition to extracurricular activities (e.g., sports and recreational organizations), high school physical education (PE) classes provide an opportunity to ensure a minimal, regular amount of desirable physical activity and help establish physical activity patterns that may extend into adulthood. This report examines the prevalence of self-reported enrollment, attendance, and participation in PE classes by students in grades 9–12.

The national school-based Youth Risk Behavior Survey (YRBS) is a component of the Youth Risk Behavior Surveillance System, which periodically measures the prevalence of priority health-risk behaviors among youth through comparable national, state, and local surveys (*7*). In the 1990 national school-based YRBS, a three-stage sample design was used to obtain a representative sample of 11,631 students in grades 9–12 in the 50 states, the District of Columbia, Puerto Rico, and the Virgin

(Continued on page 613)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending August 31, 1991, with historical data — United States



*Ratio of current 4-week total to the mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending August 31, 1991 (35th Week)

	Cum. 1991		Cum. 1991
AIDS	30,334	Measles: imported	156
Anthrax	-	indigenous	7,984
Botulism: Foodborne	12	Plague	2
Infant	51	Poliomyelitis, Paralytic*	-
Other	4	Psittacosis	59
Brucellosis	46	Rabies, human	2
Cholera	17	Syphilis, primary & secondary	27,460
Congenital rubella syndrome	13	Syphilis, congenital, age < 1 year	12
Diphtheria	2	Tetanus	29
Encephalitis, post-infectious	61	Toxic shock syndrome	205
Gonorrhea	392,670	Trichinosis	57
Haemophilus influenzae (invasive disease)	2,094	Tuberculosis	14,790
Hansen Disease	103	Tularemia	114
Leptospirosis	38	Typhoid fever	255
Lyme Disease	5,136	Typhus fever, tickborne (RMSF)	407

*Three suspected cases of poliomyelitis have been reported in 1991; none of the 8 suspected cases in 1990 have been confirmed to date. Five of the 13 suspected cases in 1989 were confirmed and all were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending August 31, 1991, and September 1, 1990 (35th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	30,334	7,839	564	61	392,670	456,697	15,898	11,166	1,970	869	772	5,136
NEW ENGLAND	1,261	850	23	1	9,251	12,476	393	586	54	25	51	1,032
Maine	38	62	3	-	113	148	16	15	2	-	2	-
N.H.	33	90	5	-	154	144	24	19	5	-	6	28
Vt.	16	188	3	-	40	38	20	12	6	-	2	4
Mass.	716	244	10	1	3,696	5,145	187	406	29	22	38	100
R.I.	63	259	-	-	776	778	73	19	10	3	3	107
Conn.	395	7	2	-	4,472	6,223	73	115	2	-	-	793
MID. ATLANTIC	8,168	1,192	42	11	45,868	61,121	1,486	991	198	15	210	2,975
Upstate N.Y.	1,022	562	18	7	8,473	9,473	603	386	117	9	73	1,910
N.Y. City	4,709	182	1	-	16,548	25,967	494	145	5	-	24	-
N.J.	1,682	-	-	-	7,968	10,132	177	228	42	-	23	533
Pa.	755	448	23	4	12,879	15,549	212	232	34	6	90	532
E.N. CENTRAL	2,239	1,520	170	7	73,779	86,413	2,069	1,320	319	40	170	150
Ohio	403	592	63	2	22,832	25,506	277	292	135	16	81	88
Ind.	216	114	14	1	7,755	7,402	284	159	1	1	13	8
Ill.	1,135	269	52	4	22,261	27,521	883	195	49	3	15	5
Mich.	371	472	37	-	16,721	19,955	219	410	84	20	33	49
Wis.	114	73	4	-	4,210	6,029	406	264	50	-	28	-
W.N. CENTRAL	793	412	38	7	19,664	23,248	1,623	486	211	18	36	198
Minn.	170	70	19	-	1,995	2,907	283	54	11	2	5	55
Iowa	80	85	-	4	1,353	1,735	39	33	8	3	10	14
Mo.	437	186	10	3	11,946	13,858	441	318	185	8	11	120
N. Dak.	4	5	2	-	30	94	32	4	4	1	1	-
S. Dak.	1	7	4	-	232	154	585	6	1	-	3	-
Nebr.	38	20	2	-	1,268	1,170	174	28	1	-	5	-
Kans.	63	39	1	-	2,840	3,330	69	43	1	4	1	9
S. ATLANTIC	7,306	1,469	111	27	118,855	130,245	1,151	2,331	270	179	123	407
Del.	53	47	2	-	1,850	2,079	7	32	4	2	2	40
Md.	702	141	18	1	12,023	14,643	202	277	48	13	25	157
D.C.	461	46	1	-	6,422	8,922	56	114	1	1	5	1
Va.	546	234	30	3	11,906	12,337	120	145	23	124	7	87
W. Va.	46	23	10	-	809	819	16	39	2	8	-	24
N.C.	351	193	24	-	23,906	20,396	117	355	92	-	14	57
S.C.	240	32	-	-	9,714	10,551	31	502	16	3	25	6
Ga.	1,028	212	7	2	28,102	28,598	145	357	37	-	13	21
Fla.	3,879	541	19	21	24,123	31,900	457	510	47	28	32	14
E.S. CENTRAL	744	518	25	-	38,796	39,395	156	913	247	3	40	81
Ky.	124	117	7	-	4,014	4,528	24	124	5	2	15	32
Tenn.	236	166	13	-	12,947	11,719	96	671	223	-	10	36
Ala.	237	207	5	-	12,193	13,671	30	109	15	1	14	13
Miss.	147	28	-	-	9,642	9,477	6	9	4	-	1	-
W.S. CENTRAL	2,934	984	60	1	45,034	49,287	2,233	1,518	86	175	31	52
Ark.	129	50	19	-	5,515	5,931	207	70	2	5	7	16
La.	507	86	11	-	10,047	9,187	88	208	6	5	6	1
Okla.	143	2	3	-	4,646	4,313	188	162	37	12	9	27
Tex.	2,155	846	27	1	24,826	29,856	1,750	1,078	41	153	9	8
MOUNTAIN	839	145	14	2	8,223	9,711	2,513	679	106	104	59	11
Mont.	22	10	1	-	70	118	65	50	4	5	4	-
Idaho	17	-	-	-	97	93	66	54	1	-	3	1
Wyo.	11	-	-	-	66	121	90	6	-	-	-	8
Colo.	304	51	4	1	2,313	2,761	393	99	46	17	13	-
N. Mex.	65	16	-	-	723	867	643	155	10	29	2	-
Ariz.	178	35	9	1	3,043	3,705	803	122	15	42	22	-
Utah	82	12	-	-	214	282	198	53	11	11	4	-
Nev.	160	21	-	-	1,697	1,764	255	140	19	-	11	2
PACIFIC	6,050	749	81	5	33,200	44,801	4,274	2,342	479	310	52	230
Wash.	396	-	6	1	2,927	3,997	404	298	105	18	3	2
Oreg.	168	-	-	-	1,339	1,710	271	218	86	8	2	-
Calif.	5,346	685	73	4	27,838	37,822	3,488	1,768	271	283	45	228
Alaska	15	30	2	-	572	814	85	24	13	1	-	-
Hawaii	125	34	-	-	524	458	26	34	4	-	2	-
Guam	2	-	-	-	-	200	-	-	-	-	-	-
P.R.	1,029	188	2	3	399	460	69	323	143	40	-	-
V.I.	13	-	-	-	269	292	1	9	-	-	-	-
Amer. Samoa	-	-	-	-	-	69	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	154	-	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending August 31, 1991, and September 1, 1990 (35th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
UNITED STATES	761	104	7,984	3	156	20,154	1,486	30	3,008	60	1,516	2,554	7	1,090	782
NEW ENGLAND	52	2	52	1	12	282	113	-	23	10	225	272	-	4	8
Maine	1	-	2	-	-	29	9	-	-	-	48	10	-	-	1
N.H.	2	-	-	-	-	8	12	-	3	-	17	40	-	1	1
Vt.	4	-	5	-	-	1	13	-	4	-	4	6	-	-	-
Mass.	24	2	25	1†	10	24	62	-	1	7	134	199	-	2	2
R.I.	7	-	2	-	-	30	1	-	3	-	-	2	-	-	1
Conn.	14	-	18	-	2	190	16	-	12	3	22	15	-	1	3
MID. ATLANTIC	115	25	4,298	-	6	1,318	156	1	226	1	124	400	-	559	11
Upstate N.Y.	32	-	334	-	4	313	80	1	81	1	80	277	-	537	10
N.Y. City	44	25	1,700	-	-	326	9	-	-	-	-	-	-	-	-
N.J.	30	-	730	-	1	308	32	-	54	-	1	28	-	-	-
Pa.	9	-	1,534	-	1	371	35	-	91	-	43	95	-	22	1
E.N. CENTRAL	58	-	69	-	11	3,499	230	2	272	2	248	708	-	180	31
Ohio	13	-	1	-	2	537	77	2	62	2	87	139	-	147	1
Ind.	3	-	-	-	2	412	19	-	6	-	58	90	-	1	-
Ill.	23	-	25	-	-	1,326	66	-	104	-	47	272	-	6	18
Mich.	16	-	41	-	-	473	48	-	81	-	24	60	-	25	9
Wis.	3	-	2	-	7	751	20	-	19	-	32	147	-	1	3
W.N. CENTRAL	24	-	34	-	6	798	81	1	90	4	112	121	1	17	14
Minn.	7	-	9	-	5	321	17	-	16	1	43	21	-	6	9
Iowa	4	-	15	-	-	26	8	1	16	-	13	17	1	6	4
Mo.	6	-	-	-	1	98	29	-	26	1	38	66	-	5	-
N. Dak.	1	-	-	-	-	-	1	-	2	-	2	2	-	-	1
S. Dak.	1	-	-	-	-	23	2	-	1	-	3	1	-	-	-
Nebr.	1	-	1	-	-	106	6	-	5	2	7	5	-	-	-
Kans.	4	-	9	-	-	224	18	-	24	-	6	9	-	-	-
S. ATLANTIC	162	6	435	-	20	1,186	274	12	1,067	14	178	196	-	13	18
Del.	2	-	21	-	-	11	2	-	6	-	-	6	-	-	-
Md.	48	-	173	-	1	210	27	2	206	4	46	49	-	6	2
D.C.	9	-	-	-	-	22	11	2	23	-	-	14	-	1	1
Va.	32	-	24	-	5	75	28	-	49	-	18	15	-	-	1
W. Va.	2	-	-	-	-	6	12	-	16	1	9	14	-	-	-
N.C.	12	2	38	-	3	30	49	5	223	2	25	40	-	2	-
S.C.	9	-	13	-	-	4	28	-	345	-	10	5	-	-	-
Ga.	16	-	10	-	5	282	56	-	38	4	33	24	-	-	-
Fla.	32	4	156	-	6	546	61	3	161	3	37	29	-	4	14
E.S. CENTRAL	17	-	7	-	2	153	97	-	155	4	57	109	-	100	3
Ky.	2	-	1	-	1	34	35	-	-	-	-	-	-	-	-
Tenn.	9	U	6	U	1	71	30	U	127	U	17	49	U	100	3
Ala.	6	-	-	-	-	22	31	-	8	4	40	54	-	-	-
Miss.	-	-	-	-	-	26	1	-	20	-	-	6	-	-	-
W.S. CENTRAL	50	20	168	-	14	4,092	110	4	328	3	45	88	-	5	66
Ark.	5	-	-	-	5	42	16	-	40	-	4	8	-	1	3
La.	13	-	-	-	-	10	23	-	22	1	12	19	-	-	-
Okla.	7	-	-	-	-	173	13	-	13	2	23	30	-	-	1
Tex.	25	20	168	-	9	3,867	58	4	253	-	6	31	-	4	62
MOUNTAIN	32	46	995	-	19	902	58	6	286	3	162	218	6	12	107
Mont.	1	-	-	-	-	1	9	-	-	-	2	26	-	-	13
Idaho	2	-	405	-	2	26	7	-	8	-	23	37	-	2	49
Wyo.	-	-	1	-	2	15	1	-	3	-	3	-	-	-	-
Colo.	9	-	1	-	5	137	11	4	122	2	71	77	1	1	4
N. Mex.	6	-	117	-	5	93	8	N	N	-	29	16	-	-	-
Ariz.	11	-	274	-	-	290	16	2	128	-	8	48	2	2	32
Utah	2	46	179	-	4	127	-	-	13	1	24	10	3	3	1
Nev.	1	-	18	-	1	213	6	-	12	-	2	4	-	4	8
PACIFIC	251	5	1,926	2	66	7,924	367	4	561	19	365	442	-	200	524
Wash.	17	-	46	-	15	254	50	2	154	8	91	110	-	8	-
Oreg.	5	1	42	2†	31	212	45	N	N	6	54	52	-	2	9
Calif.	225	4	1,834	-	12	7,366	263	2	378	5	173	238	-	185	502
Alaska	-	-	-	-	3	80	7	-	10	-	12	4	-	1	-
Hawaii	4	-	4	-	5	12	2	-	19	-	35	38	-	4	13
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	-
P.R.	1	-	93	-	1	1,634	15	-	9	7	41	6	-	1	-
V.I.	2	U	-	U	2	24	-	U	8	U	-	-	U	-	-
Amer. Samoa	-	U	-	U	-	521	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	4	U	-	-

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

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

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending August 31, 1991, and September 1, 1990 (35th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	27,460	32,953	205	14,790	15,506	114	255	407	4,778
NEW ENGLAND	700	1,182	10	405	350	2	27	5	48
Maine	-	5	4	30	-	-	1	-	-
N.H.	12	44	1	5	3	-	1	-	2
Vt.	1	1	-	4	7	-	-	-	-
Mass.	321	458	5	187	192	2	24	4	-
R.I.	39	14	-	59	43	-	-	-	-
Conn.	327	660	-	120	105	-	1	1	46
MID. ATLANTIC	4,316	6,470	32	3,431	3,673	1	48	11	1,415
Upstate N.Y.	103	613	15	238	284	1	9	6	524
N.Y. City	2,148	2,997	1	2,130	2,318	-	25	-	-
N.J.	896	1,064	-	582	598	-	11	2	651
Pa.	1,169	1,796	16	481	473	-	3	3	240
E.N. CENTRAL	3,317	2,360	39	1,503	1,474	6	15	33	105
Ohio	457	376	19	214	253	1	2	20	14
Ind.	103	58	-	147	128	-	-	9	8
Ill.	1,539	940	12	787	745	3	4	3	24
Mich.	877	733	8	289	289	2	8	1	23
Wis.	341	253	-	66	59	-	1	-	36
W.N. CENTRAL	493	347	32	349	407	39	5	27	620
Minn.	47	62	7	66	69	1	2	-	221
Iowa	48	45	6	52	42	-	-	1	123
Mo.	351	179	10	147	210	32	1	16	15
N. Dak.	-	1	-	5	16	-	-	-	70
S. Dak.	1	1	1	26	9	4	-	1	140
Nebr.	11	9	1	13	15	-	2	4	11
Kans.	35	50	7	40	46	2	-	5	40
S. ATLANTIC	8,351	10,697	19	2,815	2,874	4	47	182	1,001
Del.	110	128	1	20	29	-	-	-	113
Md.	664	768	1	258	232	-	8	21	378
D.C.	524	717	1	126	99	-	2	-	8
Va.	605	630	3	230	252	-	8	9	180
W. Va.	21	11	-	46	51	-	1	4	42
N.C.	1,331	1,207	8	379	363	1	2	99	11
S.C.	1,057	689	2	275	318	1	3	29	74
Ga.	2,058	2,719	-	556	479	1	5	19	171
Fla.	1,981	3,828	3	925	1,051	1	18	1	24
E.S. CENTRAL	3,118	2,898	9	1,054	1,112	13	2	72	670
Ky.	66	64	4	236	269	4	2	20	34
Tenn.	1,023	1,168	5	323	277	8	-	38	29
Ala.	1,187	890	-	276	350	1	-	14	607
Miss.	842	776	-	219	216	-	-	-	-
W.S. CENTRAL	5,037	5,488	14	1,836	1,901	30	18	68	456
Ark.	478	366	3	158	236	20	-	11	26
La.	1,676	1,687	-	178	236	-	3	-	5
Okla.	128	175	4	118	135	10	1	57	133
Tex.	2,755	3,260	7	1,382	1,294	-	14	-	292
MOUNTAIN	403	631	26	400	350	14	7	7	148
Mont.	6	-	1	6	22	7	-	5	32
Idaho	3	6	-	4	10	-	-	-	1
Wyo.	8	1	-	3	4	1	-	-	61
Colo.	58	38	5	33	20	2	1	2	12
N. Mex.	24	32	6	54	74	-	1	-	3
Ariz.	263	455	4	224	154	1	4	-	28
Utah	5	8	10	30	22	3	-	-	7
Nev.	36	91	-	46	44	-	1	-	4
PACIFIC	1,725	2,880	24	2,997	3,365	5	86	2	315
Wash.	111	269	3	194	189	2	4	1	1
Oreg.	52	101	-	75	89	2	4	1	4
Calif.	1,554	2,482	21	2,550	2,937	1	75	-	306
Alaska	4	13	-	40	35	-	-	-	3
Hawaii	4	15	-	138	115	-	3	-	1
Guam	-	2	-	-	33	-	-	-	-
P.R.	306	204	-	157	66	-	9	-	48
V.I.	77	8	-	2	4	-	-	-	-
Amer. Samoa	-	-	-	-	13	-	-	-	-
C.N.M.I.	-	3	-	-	44	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending August 31, 1991 (35th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	595	402	110	56	14	13	39
Boston, Mass.	163	97	36	19	4	7	15
Bridgeport, Conn.	39	29	6	3	1	-	3
Cambridge, Mass.	32	24	5	3	-	-	4
Fall River, Mass.	27	18	7	2	-	-	-
Hartford, Conn.	47	31	9	6	-	1	1
Lowell, Mass.	29	22	2	4	1	-	1
Lynn, Mass.	26	19	7	-	-	-	1
New Bedford, Mass.	30	24	2	4	-	-	2
New Haven, Conn.	53	28	10	6	5	4	2
Providence, R.I.	35	27	5	1	2	-	3
Somerville, Mass.	4	1	2	1	-	-	-
Springfield, Mass.	42	29	8	3	1	1	2
Waterbury, Conn.	30	24	5	1	-	-	1
Worcester, Mass.	38	29	6	3	-	-	4
MID. ATLANTIC	2,667	1,720	501	288	90	65	98
Albany, N.Y.	39	31	6	-	-	2	1
Allentown, Pa.	19	14	3	2	-	-	2
Buffalo, N.Y.	100	78	10	8	1	3	2
Camden, N.J.	43	23	9	7	1	3	3
Elizabeth, N.J.	13	10	1	2	-	-	1
Erie, Pa.†	31	25	6	-	-	-	-
Jersey City, N.J.	45	29	10	2	1	3	1
New York City, N.Y.	1,267	778	256	166	48	19	40
Newark, N.J.	43	12	12	9	5	5	2
Paterson, N.J.	27	20	2	5	-	-	2
Philadelphia, Pa.	593	379	109	55	22	25	17
Pittsburgh, Pa.†	54	34	12	5	1	2	6
Reading, Pa.	40	30	10	-	-	-	5
Rochester, N.Y.	136	106	16	11	2	1	7
Schenectady, N.Y.	23	14	5	2	2	-	1
Scranton, Pa.†	16	15	1	-	-	-	1
Syracuse, N.Y.	110	71	20	11	6	2	6
Trenton, N.J.	28	20	6	1	1	-	-
Utica, N.Y.	18	13	4	1	-	-	1
Yonkers, N.Y.	22	18	3	1	-	-	-
E.N. CENTRAL	2,088	1,236	398	238	149	67	84
Akron, Ohio	47	37	6	3	1	-	-
Canton, Ohio	28	22	6	-	-	-	3
Chicago, Ill.	519	194	103	112	98	12	12
Cincinnati, Ohio	129	93	19	6	2	9	16
Cleveland, Ohio	141	91	32	12	4	2	3
Columbus, Ohio	180	119	39	15	2	5	1
Dayton, Ohio§	U	U	U	U	U	U	U
Detroit, Mich.	233	135	43	34	13	8	4
Evansville, Ind.	35	26	6	2	-	1	1
Fort Wayne, Ind.	55	35	10	3	3	4	4
Gary, Ind.	21	12	6	2	1	-	-
Grand Rapids, Mich.	60	40	13	3	-	4	4
Indianapolis, Ind.	187	114	37	14	11	11	11
Madison, Wis.	47	29	9	5	4	-	4
Milwaukee, Wis.	114	87	18	5	-	4	7
Peoria, Ill.	41	23	6	5	3	4	2
Rockford, Ill.	49	32	12	2	1	2	4
South Bend, Ind.	44	33	6	4	1	-	3
Toledo, Ohio	92	60	19	7	5	1	2
Youngstown, Ohio	66	54	8	4	-	-	3
W.N. CENTRAL	729	517	131	46	18	17	33
Des Moines, Iowa	56	40	9	4	1	2	2
Duluth, Minn.	25	20	3	1	1	-	-
Kansas City, Kans.	33	20	10	1	2	-	1
Kansas City, Mo.	107	72	18	10	4	3	3
Lincoln, Nebr.	29	23	6	-	-	-	3
Minneapolis, Minn.	167	119	33	11	3	1	6
Omaha, Nebr.	114	82	20	7	4	1	10
St. Louis, Mo.	107	79	13	8	2	5	4
St. Paul, Minn.	49	36	9	2	-	2	4
Wichita, Kans.	42	26	10	2	1	3	-

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,465	868	295	182	66	52	70
Atlanta, Ga.§	U	U	U	U	U	U	U
Baltimore, Md.	314	175	58	50	22	9	30
Charlotte, N.C.	70	40	19	7	2	2	-
Jacksonville, Fla.	110	69	18	14	5	4	7
Miami, Fla.	128	78	29	10	4	7	2
Norfolk, Va.	60	36	11	8	2	3	5
Richmond, Va.	72	49	14	7	1	1	1
Savannah, Ga.	47	23	10	6	2	5	2
St. Petersburg, Fla.	53	45	3	2	2	1	-
Tampa, Fla.	186	124	37	14	6	5	15
Washington, D.C.	393	210	89	59	20	15	8
Wilmington, Del.	32	19	7	5	-	-	-
E.S. CENTRAL	724	454	159	63	24	24	43
Birmingham, Ala.	112	55	36	15	2	4	2
Chattanooga, Tenn.	73	47	13	5	4	4	5
Knoxville, Tenn.	59	46	11	2	-	-	7
Louisville, Ky.	68	33	18	11	3	3	3
Memphis, Tenn.	160	97	33	13	9	8	14
Mobile, Ala.	82	51	18	8	2	3	3
Montgomery, Ala.	49	40	7	-	2	-	-
Nashville, Tenn.	121	85	23	9	2	2	9
W.S. CENTRAL	1,150	727	235	121	38	29	66
Austin, Tex.	75	44	10	14	4	3	8
Baton Rouge, La.	46	31	10	1	1	3	1
Corpus Christi, Tex.	37	26	4	5	1	1	-
Dallas, Tex.	182	107	40	24	6	5	3
El Paso, Tex.	54	41	7	3	3	-	2
Ft. Worth, Tex.	96	59	22	9	4	2	6
Houston, Tex.	173	107	38	22	3	3	23
Little Rock, Ark.	57	39	12	4	1	1	3
New Orleans, La.	141	91	28	10	7	5	-
San Antonio, Tex.	150	96	28	17	5	4	6
Shreveport, La.	50	32	11	6	1	-	7
Tulsa, Okla.	89	54	25	6	2	2	7
MOUNTAIN	716	449	127	75	42	23	41
Albuquerque, N.M.	92	60	9	11	10	2	8
Colo. Springs, Colo.	46	30	11	2	1	2	7
Denver, Colo.	115	73	21	12	6	3	5
Las Vegas, Nev.	123	66	29	12	12	4	5
Ogden, Utah	23	18	2	1	1	1	4
Phoenix, Ariz.	158	97	25	21	9	6	1
Pueblo, Colo.	13	10	3	-	-	-	-
Salt Lake City, Utah	36	16	11	4	2	3	4
Tucson, Ariz.	110	79	16	12	1	2	7
PACIFIC	1,258	827	212	133	52	33	70
Berkeley, Calif.	12	6	6	-	-	-	-
Fresno, Calif.	52	30	11	4	6	1	2
Glendale, Calif.§	U	U	U	U	U	U	U
Honolulu, Hawaii	76	54	14	6	2	-	7
Long Beach, Calif.	86	57	14	9	3	3	6
Los Angeles, Calif.§	U	U	U	U	U	U	U
Oakland, Calif.§	U	U	U	U	U	U	U
Pasadena, Calif.	29	24	3	1	1	-	2
Portland, Oreg.	122	83	18	12	6	3	3
Sacramento, Calif.	145	103	24	10	3	5	17
San Diego, Calif.	149	95	15	22	11	5	6
San Francisco, Calif.	151	84	34	29	3	1	3
San Jose, Calif.	187	119	32	17	9	10	11
Seattle, Wash.	142	94	22	16	6	4	2
Spokane, Wash.	53	43	5	2	2	1	6
Tacoma, Wash.	54	35	14	5	-	-	5
TOTAL	11,392††	7,200	2,168	1,202	493	323	544

*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.

§Report for this week is unavailable (U).

Physical Education — Continued

Islands. Students were asked 1) if they were enrolled in PE classes, 2) how many days they had attended PE classes during the past 2 weeks, and 3) during how many PE classes they had engaged in at least 20 minutes of light to heavy exercise during the past 2 weeks.

Of all students in grades 9–12, 43.5% of males and 52.0% of females reported that they were not enrolled in PE classes (Table 1). In addition, 21.5% of students (males, 24.1%; females, 19.0%) reported that they attended PE classes daily. Daily attendance in PE classes decreased substantially from 9th grade through 12th grade (9th grade, 34.4%; 10th grade, 25.7%; 11th grade, 15.1%; and 12th grade, 10.9%).

Of students who reported attending PE class during the past 2 weeks, about one third (33.2%) reported exercising 20 minutes or more in PE class three to five times per week (Table 2). Almost one fourth (23.4%) reported that they did not exercise 20 minutes or more during any PE class. Females (28.5%) were significantly more likely than males (18.6%) to report not exercising 20 minutes or more during any PE class during the past 2 weeks.

Reported by: Div of Chronic Disease Control and Community Intervention, Div of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: One of the national health promotion and disease prevention objectives for the year 2000 (objective 1.8) is to "increase to at least 50 percent the proportion of children and adolescents in 1st through 12th grade who participate in daily school physical education" (*8*). The findings in this report indicate that, to attain this objective, the percentage of 9th–12th-grade students attending daily PE classes must markedly increase. However, enrollment in PE, a necessary prerequisite for attendance in PE classes, may have decreased (Figure 1), from a total of 65% in 1984 to 48% in 1990 (based on a comparison of findings in this report with results from the 1984 National Children and Youth Fitness Study [*9*]).

To develop healthy physical activity patterns, students must not only attend PE classes but also engage in physical activity during those classes. Specifically, national

FIGURE 1. Percentage of high school students enrolled in physical education classes, by student grade and by survey — United States, 1984 and 1990

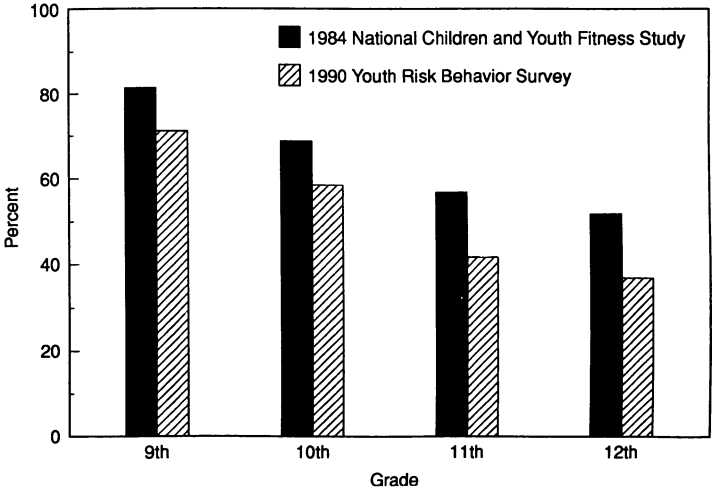


TABLE 1. Percentage of high school students attending physical education classes, by gender and grade of student – United States, Youth Risk Behavior Survey, 1990*

	Male				Female				Total			
	Not enrolled		Attend daily		Not enrolled		Attend daily		Not enrolled		Attend daily	
Grade	%	(95% CI†)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
9th	24.1	(16.9–31.4)	38.9	(30.3–47.5)	33.1	(22.1–44.1)	30.8	(23.6–38.0)	28.9	(20.1–37.8)	34.4	(27.3–41.5)
10th	36.6	(27.2–46.0)	26.7	(19.6–33.8)	46.2	(34.8–57.6)	24.8	(18.1–31.5)	41.4	(31.5–51.3)	25.7	(19.5–31.9)
11th	52.4	(42.2–62.7)	19.6	(13.2–26.0)	62.9	(51.2–74.7)	11.1	(7.2–15.0)	58.0	(47.4–68.6)	15.1	(10.4–19.8)
12th	58.1	(46.1–70.1)	13.5	(6.9–20.1)	68.2	(56.3–80.0)	7.8	(2.9–12.7)	62.7	(51.6–73.8)	10.9	(6.2–15.6)
Total	**43.5**	**(35.2–51.8)**	**24.1**	**(18.5–29.7)**	**52.0**	**(42.4–61.6)**	**19.0**	**(15.3–22.6)**	**47.8**	**(39.1–56.5)**	**21.5**	**(17.1–25.8)**

*Unweighted sample size = 11,631 students. Categories do not total 100% because students who reported taking PE less than daily are not included in this table.
†Confidence interval.

TABLE 2. Percentage of high school students who exercised ≥20 minutes during physical education classes,* by gender and grade of student – United States, Youth Risk Behavior Survey, 1990†

	Male				Female				Total			
	0 days/week		3–5 days/week		0 days/week		3–5 days/week		0 days/week		3–5 days/week	
Grade	%	(95% CI§)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
9th	23.7	(19.1–28.2)	36.4	(28.2–44.7)	28.8	(24.3–33.3)	31.2	(23.3–39.1)	26.5	(23.2–29.9)	33.6	(26.2–41.0)
10th	17.1	(13.2–21.0)	38.4	(27.2–49.7)	27.1	(21.6–32.5)	30.1	(22.1–38.0)	21.9	(18.6–25.2)	34.4	(26.2–42.6)
11th	14.0	(10.4–17.6)	40.0	(24.9–55.2)	25.2	(17.7–32.7)	29.2	(18.1–40.2)	19.2	(15.7–22.7)	35.0	(22.4–47.6)
12th	17.9	(11.0–24.8)	34.4	(18.2–50.5)	34.5	(20.0–48.9)	18.8	(8.4–29.1)	24.5	(15.5–33.6)	28.1	(16.1–40.1)
Total	**18.6**	**(15.2–22.1)**	**37.4**	**(26.9–47.8)**	**28.5**	**(24.7–32.4)**	**28.6**	**(21.3–35.9)**	**23.4**	**(20.5–26.3)**	**33.2**	**(24.5–41.8)**

*Students reported that they attended PE class during the previous 2 weeks.
†Unweighted sample size = 5642 students. Categories do not total 100% because students who reported taking PE 1–2 days per week are not included in this table.
§Confidence interval.

Physical Education — Continued

health objective 1.9 aims to "increase to at least 50 percent the proportion of school physical education class time that students spend being physically active, preferably engaged in lifetime physical activities" (*8*). Findings in this report indicate that the amount of PE class time devoted to physical activity is substantially below this goal.

To improve the health of youth through PE, parents, teachers, school administrators, school board members, pediatricians, family physicians, and public health officials need to implement policies that ensure every student's enrollment and participation in daily PE programs and develop programs that provide at least 20 minutes of daily physical activity (*10*).

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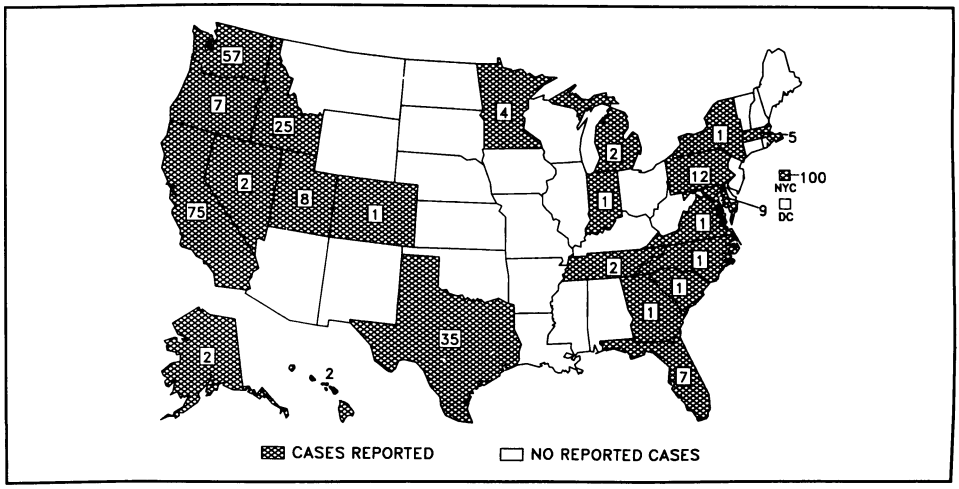
Reported cases of measles, by state — United States, weeks 31–34, 1991



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