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MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports

School Immunization Requirements for Measles — United States, 1982

The record low incidence of measles in the United States observed in 1981 (1) resulted from implementation of the measles elimination strategy. The primary component of this strategy is to achieve and maintain a very high percentage of immunity* to measles in the population. Because schools are the primary site of measles transmission in the United States, a major focus of the Measles Elimination Program has been to document that very high percentages of school-age children are vaccinated against measles. The importance of immunizing school-age children is reflected by the fact that in 1980, the most recent year for which age-specific data on measles cases are available, the school-age population 5-19 years old accounted for almost three-fourths (72.1%) of the measles cases (2).

An important means of assuring high immunization levels is enactment and enforcement of school immunization laws. The 2 major categories of school immunization laws are school-entrance laws and comprehensive school-attendance laws. School-entrance laws require documentation of measles immunity at the time of entry into kindergarten or first grade; students already in school when the law goes into effect do not have to comply. School-attendance laws, however, cover all students from kindergarten through grade 12.

In recent years, an increasing number of states have adopted comprehensive school-attendance laws requiring proof of measles immunity for all students from kindergarten through grade 12. In March 1979, only 17 states and the District of Columbia had such comprehensive laws, but by January 1982, this number had increased to 39 states and the District of Columbia (Figure 1). Of the remaining states, 10 have school-entry laws covering only kindergarten and first grade, and 1 has a law covering elementary school only. To ensure that students have been vaccinated with live-measles vaccine on or after their first birthday, most states require that dates of vaccination appear on school records.

Pennsylvania is one of 10 states that lack a comprehensive school immunization law. In the past 2 years, 8 measles outbreaks have occurred in Pennsylvania. In 1980, one such outbreak involved 811 cases in a 6-county area. Of 85,375 students enrolled in schools in these counties, 31,291 (36.7%) lacked adequate evidence of immunity to measles.

Although Pennsylvania comprises only 5% of the U.S. population, 607 (20.0%) of the provisional total of 3,032 measles cases reported in the United States for 1981 occurred in that state. The largest outbreak in the United States in 1981 occurred in Philadelphia, which reported 489 cases to CDC. Approximately 70% of these cases occurred among school-age

*Measles immunity is estimated by either documented physician-diagnosed measles or receipt of live-measles vaccine on or after the first birthday.

Measles – Continued

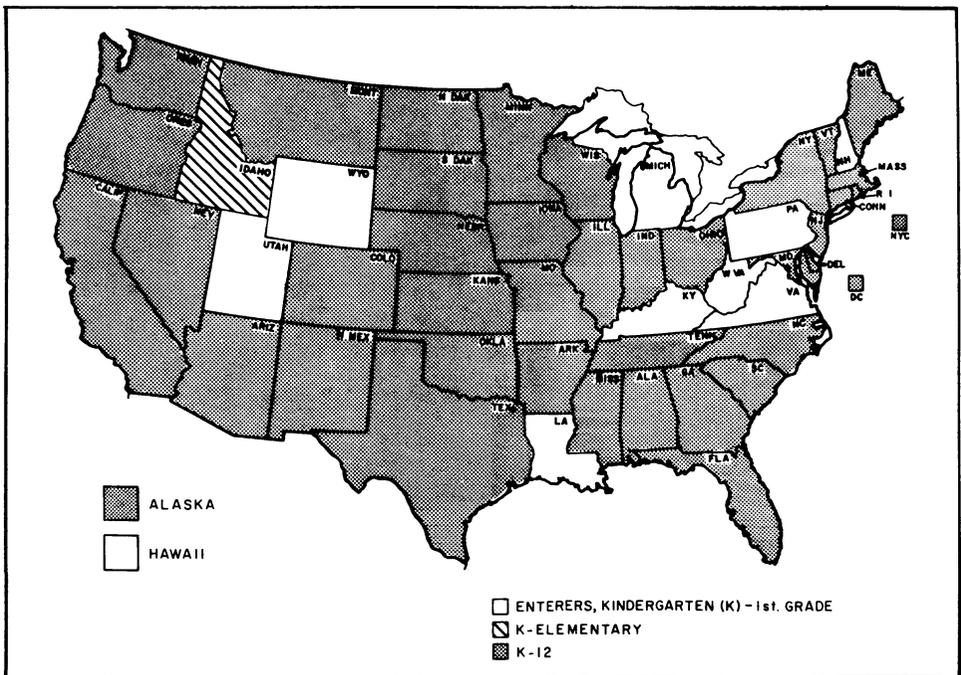
children (5-19 years). Another large outbreak, in which 156 confirmed cases were reported, occurred in Warren County, Pennsylvania; 86% of the cases were among school-age children. Of 8,315 students enrolled in Warren County schools, 3,210 (38.6%) lacked evidence of adequate immunity to measles. A countywide outbreak-control program was rapidly implemented in this outbreak. Philadelphia is currently engaged in a comprehensive vaccination campaign that involves reviewing the vaccination status of all students enrolled in city schools, holding vaccination clinics, and excluding students from school until they provide adequate evidence of immunity. Comprehensive immunization requirements covering kindergarten through 12th grade are currently being considered in Pennsylvania.

Reported by RG Sharrar, MD, Philadelphia, R Gens, MD, Acute Infectious Disease Div, EJ Witte, VMD, MPH, State Epidemiologist, Pennsylvania Dept of Health; Immunization Div, Center for Prevention Svcs, CDC.

Editorial Note: In recent years, the relationship of low measles incidence to comprehensive school laws has been demonstrated. In 1977 and 1978, low measles incidence was statistically associated with areas having comprehensive school laws that were rigorously enforced by exclusion of susceptible students from school (3). In the 1979-1980 school year, reporting areas in which laws covered all grades had lower measles incidence than did reporting areas in which laws covered only entry into kindergarten or first grade ($p = 0.05$, Mann Whitney U test) (4).

Vigorous enforcement of school immunization laws is the key to their effectiveness. The most effective means of enforcement is to exclude from school those students who have not provided documented evidence of immunity to measles. Experience with such enforcement

FIGURE 1. School immunization laws for measles, by state, January 31, 1982



Measles — Continued

programs indicates that necessary vaccinations are quickly obtained by most susceptible pupils and that exclusion from school for significant periods of time is uncommon (5-8).

Continued progress toward eliminating indigenous measles from the United States will be aided considerably if all states have comprehensive immunization laws covering all students. The experience in Pennsylvania indicates that an aggressive surveillance and outbreak-control effort alone cannot interrupt transmission. Enacting and strictly enforcing such comprehensive laws should receive high priority in public health efforts to control or eliminate measles and to maintain the absence of indigenous measles transmission.

References

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Cat Rabies Exposures in Iowa — 1981

In 1981, the number of confirmed cases of animal rabies in Iowa rose to 889—a 68% increase over the 1980 figure of 529 cases. Although skunks remain the most important endemic reservoir, a significant increase in the number of cases of rabies among dogs (49 in 1981 vs 22 in 1980) and cats (83 in 1981 vs 44 in 1980) was also observed. The Iowa State Department of Health was consulted on 661 animal-contact incidents, as a result of which 452 persons received postexposure therapy (Table 1). Of the treated group, 57 persons received penetrating bites from known rabid animals. Forty-two (74%) of these bite-associated exposures involved cats. This species was the most common source of human exposure to rabies in Iowa in 1981, as it was in the period 1977-1980 (Table 2). No cases of human rabies occurred in Iowa in 1981.

TABLE 1. Human postexposure rabies treatments — Iowa, 1981

Exposing animals	RABID		UNKNOWN		Total
	Bite	Nonbite	Bite	Nonbite	
Cat	42	55	78	17	192
Dog	6	92	31	9	138
Skunk	3	2	2	1	8
Cow	1	23	0	5	29
Other*	5	19	50	11	85
Total	57	191	161	43	452

*Bat, horse, rabbit, raccoon, sheep, ferret, groundhog, muskrat, squirrel, rat, coyote, and unknown.

Cat Rabies Exposures — Continued

Although intraspecies transmission of rabies in cats cannot be ruled out, it is presumed that most cases resulted from exposure to rabid skunks. Investigation of 64 rabid cats in Iowa in 1981 revealed that none had a history of rabies vaccination (only dogs are required by the Iowa State Code to be vaccinated). Investigation of 35 rabid dogs, on the other hand, revealed that the vaccination status of 1 was current and 3 had expired vaccinations.

The cost of this increased incidence of cat rabies is difficult to ascertain. A total of 6,234 doses of human diploid cell vaccine were shipped to Iowa in 1981. This suggests that the total number of human treatments was approximately 900 (± 100). If the cost of 1 treatment is estimated at \$350 for biologics plus \$50 for administration, the total cost for prophylaxis alone (\$400 times a minimum of 800 persons treated) would be \$320,000. Costs of laboratory services, lost work days, transportation, livestock mortality, and veterinary fees would markedly increase this estimate.

Reported by V Seaton, DVM, Veterinary Diagnostic Laboratory, Iowa State University, Ames, WH Hausler, PhD, University Hygienic Laboratory, University of Iowa, Iowa City, RW Currier, DVM, LA Wintermeyer, MD, State Epidemiologist, Iowa State Dept of Health; Viral Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: This report reflects the national experience with rabies in recent years. Reports of documented rabies in animals have doubled in the United States in the last 3 years: 3,298 for 1978 and over 7,000 for 1981. In 1981, for the first time, the number of

(Continued on page 73)

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

DISEASE	6th WEEK ENDING			CUMULATIVE, FIRST 6 WEEKS		
	February 13 1982	February 14 1981	MEDIAN 1977-1981	February 13 1982	February 14 1981	MEDIAN 1977-1981
Aseptic meningitis	58	33	38	467	370	297
Brucellosis	1	—	4	7	9	11
Encephalitis:	Primary (arthropod-borne & unspec.)	9	17	14	72	84
	Post-infectious	1	3	3	3	10
Gonorrhoea:	Civilian	14,980	16,528	18,419	107,242	113,405
	Military	334	551	568	3,228	3,538
Hepatitis:	Type A	332	312	546	2,167	2,507
	Type B	267	247	290	1,833	1,854
	Non A, Non B	21	N	N	136	N
	Unspecified	140	148	168	954	1,113
Legionellosis	3	N	N	24	N	N
Laprosy	1	13	5	8	27	19
Malaria	10	17	8	62	140	53
Measles (rubeola)	9	35	296	59	203	1,167
Meningococcal infections:	Total	45	122	71	318	542
	Civilian	45	122	71	317	541
	Military	—	—	—	1	1
Mumps	121	107	319	474	576	1,743
Pertussis	18	15	17	79	91	116
Rubella (German measles)	13	48	143	150	254	757
Syphilis (Primary & Secondary):	Civilian	480	479	477	3,705	3,393
	Military	4	11	11	57	43
Tuberculosis	424	475	551	2,470	2,479	2,649
Tularemia	1	—	2	7	11	11
Typhoid fever	3	4	5	42	47	35
Typhus fever, tick-borne (RMSF)	—	—	2	13	6	6
Rabies, animal	54	96	51	419	565	296

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1982		CUM. 1982
Anthrax	—	Poliomyelitis: Total	—
Botulism	10	Paralytic	—
Cholera	1	Psittacosis (Ohio 1, La. 1)	8
Congenital rubella syndrome	—	Rabies, human	—
Diphtheria	—	Tetanus	5
Leptospirosis (Upstate N.Y. 1, Mo. 1)	9	Trichinosis	13
Plague	1	Typhus fever, flea-borne (endemic, murine) (Ala. 1)	1

N: Not notifiable

TABLE III. Cases of specified notifiable diseases, United States, weeks ending
February 13, 1982 and February 14, 1981 (6th week)

REPORTING AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	ENCEPHALITIS		GONORRHEA (Civilian)		HEPATITIS (Viral), by type				LEGIONEL- LOSIS	LEPROSY
			Primary	Post-in- fectious	CUM. 1982	CUM. 1981	A	B	NA,NB	Unspecified		
UNITED STATES	58	7	72	3	107,242	113,405	332	267	21	140	3	8
NEW ENGLAND	4	—	1	—	2,339	2,973	9	13	1	16	—	—
Maine	2	—	—	—	130	130	—	1	—	—	—	—
N.H.	—	—	—	—	97	107	2	4	—	1	—	—
Vt.	—	—	—	—	61	49	—	—	—	—	—	—
Mass.	1	—	1	—	915	1,181	2	4	—	15	—	—
R.I.	1	—	—	—	152	129	4	1	—	—	—	—
Conn.	—	—	—	—	984	1,377	1	3	1	—	—	—
MID. ATLANTIC	6	—	12	—	12,466	12,480	46	41	5	12	—	1
Upstate N.Y.	2	—	6	—	1,844	1,865	18	18	1	7	—	—
N.Y. City	—	—	3	—	5,628	4,725	9	12	—	—	—	—
N.J.	1	—	—	—	1,983	2,769	19	11	4	2	—	—
Pa.	3	—	3	—	3,011	3,121	—	—	—	—	—	1
E.N. CENTRAL	11	—	19	1	13,866	17,949	85	55	3	23	2	—
Ohio	5	—	3	—	4,731	7,239	7	14	3	11	2	—
Ind.	1	—	7	1	1,938	1,414	31	10	—	8	—	—
Ill.	—	—	—	—	1,979	3,813	8	5	—	—	—	—
Mich.	5	—	7	—	3,871	3,929	34	24	—	4	—	—
Wis.	—	—	2	—	1,347	1,554	5	2	—	—	—	—
W.N. CENTRAL	5	1	3	—	5,137	5,805	16	15	2	2	—	—
Minn.	—	—	—	—	812	911	9	1	—	—	—	—
Iowa	1	—	2	—	514	531	1	2	1	—	—	—
Mo.	4	1	1	—	2,283	2,693	3	3	—	2	—	—
N. Dak.	—	—	—	—	60	53	—	—	—	—	—	—
S. Dak.	—	—	—	—	166	147	—	1	—	—	—	—
Nebr.	—	—	—	—	286	429	—	1	—	—	—	—
Kans.	—	—	—	—	1,016	1,041	3	7	1	—	—	—
S. ATLANTIC	9	3	8	1	29,099	28,443	27	54	5	24	1	—
Del.	—	—	—	—	368	479	—	—	—	1	—	—
Md.	—	—	4	—	3,729	2,945	3	7	—	1	—	—
D.C.	—	—	—	—	1,289	1,844	—	2	—	—	—	—
Va.	3	2	2	—	2,325	2,839	1	4	2	2	1	—
W. Va.	—	—	—	—	242	382	3	—	—	—	—	—
N.C.	1	—	1	—	4,822	4,693	2	7	—	4	—	—
S.C.	—	—	—	—	2,546	2,533	2	6	—	6	—	—
Ga.	—	—	—	—	5,189	6,050	2	15	1	2	—	—
Fla.	5	1	1	1	8,589	6,678	14	13	2	8	—	—
E.S. CENTRAL	3	—	4	—	8,881	9,301	17	22	1	3	—	—
Ky.	—	—	—	—	1,158	1,194	8	2	—	7	—	—
Tenn.	1	—	3	—	3,462	3,457	5	16	1	1	—	—
Ala.	2	—	1	—	2,533	3,083	1	3	—	—	—	—
Miss.	—	—	—	—	1,728	1,567	3	1	—	—	—	—
W.S. CENTRAL	11	—	5	—	16,291	16,844	102	57	—	43	—	—
Ark.	—	—	—	—	1,397	1,088	3	3	—	4	—	—
La.	—	—	—	—	2,637	2,573	18	6	—	4	—	—
Okla.	3	—	3	—	1,689	1,612	5	12	—	1	—	—
Tex.	8	—	2	—	10,568	11,571	76	36	—	34	—	—
MOUNTAIN	—	—	5	1	3,996	4,416	25	6	4	17	—	—
Mont.	—	—	—	—	188	139	—	—	—	—	—	—
Idaho	—	—	—	—	177	185	1	—	1	—	—	—
Wyo.	—	—	—	—	121	112	1	—	—	—	—	—
Colo.	—	—	1	1	1,140	1,229	5	3	—	6	—	—
N. Mex.	—	—	—	—	497	521	8	1	1	—	—	—
Ariz.	—	—	1	—	1,028	1,382	9	2	1	5	—	—
Utah	—	—	—	—	159	202	1	—	—	4	—	—
Nev.	—	—	3	—	686	646	—	—	1	2	—	—
PACIFIC	9	3	15	—	15,167	15,194	5	4	—	—	—	7
Wash.	—	—	2	—	1,499	1,221	4	1	—	—	—	1
Oreg.	—	—	—	—	1,045	1,295	—	1	—	—	—	—
Calif.	U	3	13	—	11,920	11,918	U	U	U	U	U	3
Alaska	1	—	—	—	422	402	1	1	—	—	—	—
Hawaii	8	—	—	—	281	358	—	1	—	—	—	3
Guam	U	—	—	—	—	27	U	U	U	U	U	—
P.R.	—	—	—	—	247	379	1	1	—	1	—	—
V.I.	—	—	—	—	29	—	—	1	—	—	—	—
Pac. Trust Terr.	U	—	—	—	—	64	U	U	U	U	U	—

N: Not notifiable

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending
February 13, 1982 and February 14, 1981 (6th week)

REPORTING AREA	MALARIA		MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS (Total)		MUMPS		PERTUSSIS	RUBELLA		
	1982	CUM. 1982	1982	CUM. 1982	CUM. 1981	1982	CUM. 1982	1982	CUM. 1982	1982	1982	CUM. 1982	CUM. 1981
UNITED STATES	10	62	9	59	203	45	318	121	74	18	13	150	254
NEW ENGLAND	2	5	-	3	7	2	14	8	42	1	2	8	42
Maine	-	-	-	-	-	-	2	4	13	-	-	-	23
N.H.	-	-	-	1	2	1	4	1	5	-	1	7	17
Vt.	-	-	-	2	1	-	1	-	3	-	-	-	-
Mass.	1	3	-	-	-	-	1	2	15	1	1	1	2
R.I.	1	1	-	-	-	-	1	-	3	-	-	-	-
Conn.	-	1	-	-	4	1	5	1	3	-	-	-	-
MID. ATLANTIC	4	6	4	19	58	13	50	6	31	-	1	8	40
Upstate N.Y.	2	2	4	13	34	3	11	4	15	-	-	6	15
N.Y. City	2	4	-	5	7	5	13	-	6	-	-	2	8
N.J.	-	-	-	-	7	1	14	-	3	-	-	-	15
Pa.	-	-	-	1	10	4	12	2	7	-	-	-	2
E.N. CENTRAL	2	7	3	4	7	8	29	77	216	8	3	19	54
Ohio	1	1	-	-	1	2	10	63	123	-	-	-	-
Ind.	-	-	-	2	1	2	5	1	9	2	-	1	18
Ill.	-	-	2	2	1	2	5	4	17	4	-	8	11
Mich.	1	5	-	-	6	4	13	6	48	1	1	2	8
Wis.	-	1	1	1	-	-	-	5	19	1	2	8	17
W.N. CENTRAL	-	1	-	-	-	2	15	9	25	2	4	9	14
Minn.	-	-	-	-	-	-	4	3	3	2	-	1	2
Iowa	-	-	-	-	-	-	1	2	7	-	-	-	-
Mo.	-	1	-	-	-	1	7	-	3	-	4	6	-
N. Dak.	-	-	-	-	-	1	2	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	-	-	-	-
Kans.	-	-	-	-	-	-	1	4	12	-	-	2	12
S. ATLANTIC	-	8	1	8	52	11	74	11	60	2	-	8	20
Del.	-	-	-	-	-	-	-	-	-	-	-	-	-
Md.	-	4	-	-	-	-	3	2	5	-	-	-	-
D.C.	-	1	-	-	-	-	-	-	-	-	-	-	-
Va.	-	1	1	8	3	-	5	-	7	-	-	7	-
W. Va.	-	-	-	-	3	1	2	3	29	1	-	-	8
N.C.	-	-	-	-	-	3	14	1	3	-	-	-	2
S.C.	-	1	-	-	-	2	10	-	2	-	-	-	3
Ga.	-	-	-	-	25	1	23	-	2	-	-	1	2
Fla.	-	1	-	-	21	4	17	5	12	1	-	-	5
E.S. CENTRAL	-	-	-	3	-	1	20	1	6	1	-	5	3
Ky.	-	-	-	1	-	1	1	-	1	-	-	5	3
Tenn.	-	-	-	2	-	1	9	-	2	-	-	-	-
Ala.	-	-	-	-	-	-	10	-	1	-	-	-	-
Miss.	-	-	-	-	-	-	-	1	2	1	-	-	-
W.S. CENTRAL	1	3	1	6	11	5	44	6	22	3	1	13	16
Ark.	-	-	-	-	-	1	4	-	2	-	-	-	-
La.	-	-	-	-	-	-	3	-	-	-	-	-	1
Okla.	-	-	-	-	-	-	4	-	-	-	-	-	-
Tex.	1	3	1	6	11	4	33	6	20	3	1	13	15
MOUNTAIN	1	3	-	-	7	3	21	2	12	1	2	4	7
Mont.	-	-	-	-	-	-	3	-	1	-	-	-	-
Idaho	-	-	-	-	-	1	2	-	2	-	-	-	-
Wyo.	-	-	-	-	-	-	-	1	1	-	-	1	-
Colo.	1	2	-	-	-	2	10	-	1	-	-	-	4
N. Mex.	-	-	-	-	-	-	1	-	-	-	-	-	-
Ariz.	-	1	-	-	-	-	2	-	3	1	-	-	1
Utah	-	-	-	-	-	-	1	1	3	-	1	2	2
Nev.	-	-	-	-	7	-	2	-	1	-	1	1	-
PACIFIC	-	29	-	16	61	-	51	1	60	-	-	76	58
Wash.	-	2	-	5	1	-	6	-	15	-	-	4	14
Oreg.	-	2	-	-	-	-	14	-	-	-	-	-	-
Calif.	U	24	U	10	60	U	28	U	44	U	U	71	44
Alaska	-	-	-	-	-	-	3	1	1	-	-	-	-
Hawaii	-	1	-	1	-	-	-	-	-	-	-	1	-
Guam	U	-	U	-	3	U	-	U	-	U	U	-	-
P.R.	1	1	4	10	35	1	1	1	3	-	-	2	-
V.I.	-	-	-	-	2	-	-	-	-	-	-	-	-
Pac. Trust Terr.	U	-	U	-	-	U	-	U	-	U	U	-	1

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending February 13, 1982 and February 14, 1981 (6th week)

REPORTING AREA	SYPHILIS (Civilian) (Primary & Secondary)		TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		RABIES, Animal
	CUM. 1982	CUM. 1981	1982	CUM. 1982	CUM. 1982	1982	CUM. 1982	1982	CUM. 1982	CUM. 1982
UNITED STATES	3,705	3,393	424	2,470	7	3	42	-	13	419
NEW ENGLAND	73	86	15	68	-	-	4	-	-	4
Maine	-	1	2	6	-	-	-	-	-	4
N.H.	-	3	3	5	-	-	-	-	-	-
Vt.	-	1	-	3	-	-	2	-	-	-
Mass.	50	46	9	43	-	-	2	-	-	-
R.I.	5	10	-	7	-	-	-	-	-	-
Conn.	18	25	1	4	-	-	-	-	-	-
MID. ATLANTIC	514	551	94	410	-	2	5	-	-	3
Upstate N.Y.	34	48	24	79	-	-	1	-	-	1
N.Y. City	346	336	19	155	-	2	4	-	-	-
N.J.	50	68	36	75	-	-	-	-	-	-
Pa.	84	99	15	101	-	-	-	-	-	2
E.N. CENTRAL	111	201	74	414	-	-	3	-	-	42
Ohio	23	40	14	85	-	-	1	-	-	2
Ind.	23	15	8	63	-	-	-	-	-	4
Ill.	20	99	27	154	-	-	-	-	-	16
Mich.	33	33	19	87	-	-	2	-	-	-
Wis.	12	14	6	25	-	-	-	-	-	20
W.N. CENTRAL	72	58	10	48	4	-	2	-	1	143
Minn.	13	17	5	10	-	-	-	-	-	35
Iowa	1	3	-	3	-	-	1	-	-	46
Mo.	45	32	2	19	3	-	1	-	1	14
N. Dak.	2	-	-	2	-	-	-	-	-	16
S. Dak.	-	-	-	2	-	-	-	-	-	7
Nebr.	-	2	-	1	-	-	-	-	-	15
Kans.	11	4	3	11	1	-	-	-	-	10
S. ATLANTIC	1,052	887	122	529	1	-	3	-	8	64
Del.	2	1	5	6	-	-	-	-	-	-
Md.	61	67	20	78	-	-	1	-	5	2
D.C.	72	81	3	17	-	-	-	-	-	-
Va.	83	88	-	28	1	-	1	-	-	33
W. Va.	3	1	3	12	-	-	1	-	-	4
N.C.	89	63	34	98	-	-	-	-	3	-
S.C.	65	68	4	44	-	-	-	-	-	4
Ga.	221	218	13	91	-	-	-	-	-	18
Fla.	456	300	40	155	-	-	-	-	-	3
E.S. CENTRAL	295	258	37	227	-	1	7	-	3	30
Ky.	16	12	8	68	-	-	-	-	8	6
Tenn.	75	98	16	74	-	1	2	-	-	16
Ala.	98	84	13	75	-	-	5	-	3	8
Miss.	106	64	-	10	-	-	-	-	-	-
W.S. CENTRAL	1,053	797	45	198	1	-	2	-	-	71
Ark.	34	11	5	10	1	-	-	-	-	15
La.	172	108	-	43	-	-	-	-	-	2
Okla.	19	19	9	37	-	-	2	-	-	21
Tex.	828	659	31	108	-	-	-	-	-	33
MOUNTAIN	107	76	8	71	1	-	2	-	-	6
Mont.	-	1	1	4	-	-	-	-	-	3
Idaho	9	1	-	2	-	-	-	-	-	-
Wyo.	7	1	1	2	-	-	-	-	-	1
Colo.	30	22	3	11	-	-	-	-	-	-
N. Mex.	22	15	-	12	-	-	-	-	-	1
Ariz.	17	17	2	28	-	-	2	-	-	1
Utah	2	-	-	-	1	-	-	-	-	-
Nev.	20	19	1	12	-	-	-	-	-	-
PACIFIC	428	479	19	505	-	-	14	-	1	56
Wash.	11	14	-	24	-	-	-	-	-	-
Oreg.	22	11	10	19	-	-	-	-	-	-
Calif.	381	439	U	427	-	U	13	U	1	52
Alaska	2	1	-	8	-	-	-	-	-	4
Hawaii	12	14	9	27	-	-	1	-	-	-
Guam	-	-	U	-	-	U	-	U	-	-
P.R.	47	74	-	7	-	-	-	-	-	2
V.I.	-	-	-	1	-	-	-	-	-	-
Pac. Trust Terr.	-	-	U	-	-	U	-	U	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending
February 13, 1982 (6th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL	REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1			ALL AGES	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	653	417	170	32	16	18	52	S. ATLANTIC	1,259	751	305	110	45	48	36
Boston, Mass.	184	106	49	13	4	12	18	Atlanta, Ga.	151	97	35	13	2	4	3
Bridgeport, Conn.	47	29	15	3	-	-	5	Baltimore, Md.	216	137	46	20	10	3	4
Cambridge, Mass.	19	15	2	1	-	1	-	Charlotte, N.C.	72	46	14	6	3	3	4
Fall River, Mass.	19	16	1	2	-	-	1	Jacksonville, Fla.	93	50	26	7	4	6	-
Hartford, Conn.	64	42	17	-	5	-	3	Miami, Fla.	96	51	27	11	3	4	2
Lowell, Mass.	16	10	4	-	-	2	-	Norfolk, Va.	58	30	17	7	2	2	5
Lynn, Mass.	23	17	5	1	-	-	-	Richmond, Va.	69	34	22	4	2	7	7
New Bedford, Mass.	19	13	6	-	-	-	-	Savannah, Ga.	35	23	10	2	-	-	1
New Haven, Conn.	30	23	4	1	2	-	3	St. Petersburg, Fla.	89	72	15	1	1	-	3
Providence, R.I.	58	39	16	3	-	-	8	Tampa, Fla.	76	42	21	3	8	2	4
Somerville, Mass.	10	7	3	-	-	-	3	Washington, D.C.	226	119	55	28	8	16	1
Springfield, Mass.	61	32	23	2	2	2	5	Wilmington, Del.	78	50	17	8	2	1	2
Waterbury, Conn.	32	17	10	3	2	-	3								
Worcester, Mass.	71	51	15	3	1	1	3								
								E.S. CENTRAL	755	466	199	46	17	27	50
MID. ATLANTIC	2,747	2,207	289	90	67	67	120	Birmingham, Ala.	138	85	34	6	4	9	3
Albany, N.Y.	58	42	7	3	1	5	-	Chattanooga, Tenn.	74	42	23	5	2	2	10
Allentown, Pa.	25	18	7	-	-	-	-	Knoxville, Tenn.	51	37	9	3	1	1	-
Buffalo, N.Y.	150	105	30	2	5	8	12	Louisville, Ky.	83	49	25	4	1	4	7
Camden, N.J.	25	15	8	2	-	-	-	Memphis, Tenn.	173	113	46	11	2	1	9
Elizabeth, N.J.	20	16	4	-	-	-	-	Mobile, Ala.	76	41	20	7	2	6	7
Erie, Pa.†	52	35	14	3	-	-	4	Montgomery, Ala.	47	32	10	4	1	-	5
Jersey City, N.J.	38	25	8	2	1	2	1	Nashville, Tenn.	113	67	32	6	4	4	9
N.Y. City, N.Y. §	1,503	1,372	13	26	31	39	52								
Newark, N.J.	67	28	20	7	6	1	7	W.S. CENTRAL	1,485	885	370	115	52	63	51
Paterson, N.J.	20	11	3	4	2	-	2	Austin, Tex.	54	35	11	3	2	3	2
Philadelphia, Pa.†	326	211	82	22	9	2	24	Baton Rouge, La.	50	24	17	6	1	2	2
Pittsburgh, Pa.†	44	31	10	2	1	-	2	Corpus Christi, Tex.	34	20	6	1	3	4	2
Reading, Pa.	42	32	10	-	-	-	4	Dallas, Tex.	197	127	46	9	5	10	2
Rochester, N.Y.	119	84	20	4	4	7	10	El Paso, Tex.	53	29	19	3	1	1	-
Schenectady, N.Y.	33	26	5	1	1	-	-	Fort Worth, Tex.	111	75	22	4	3	7	16
Scranton, Pa.†	25	18	5	1	1	-	1	Houston, Tex.	450	232	129	49	28	12	8
Syracuse, N.Y.	112	73	28	6	3	2	-	Little Rock, Ark.	62	36	14	4	1	7	4
Trenton, N.J.	34	26	6	1	1	-	-	New Orleans, La.	118	70	27	13	5	3	-
Utica, N.Y.	24	16	6	2	-	-	1	San Antonio, Tex.	172	112	39	13	2	6	6
Yonkers, N.Y.	30	23	3	2	1	1	-	Shreveport, La.	75	55	15	3	1	1	4
								Tulsa, Okla.	109	70	25	7	-	7	5
E.N. CENTRAL	2,446	1,739	422	105	73	91	66	MOUNTAIN	652	409	153	44	28	18	28
Akron, Ohio	48	39	6	1	-	2	-	Albuquerque, N. Mex.	70	37	22	8	3	-	2
Canton, Ohio	47	28	13	4	-	2	-	Colo. Springs, Colo.	27	21	4	2	-	-	-
Chicago, Ill. §	599	520	10	11	21	21	11	Denver, Colo.	146	88	36	10	9	3	4
Cincinnati, Ohio	149	96	36	8	4	5	10	Las Vegas, Nev.	89	52	22	6	7	2	7
Cleveland, Ohio	169	97	48	11	8	5	4	Ogden, Utah	14	8	5	1	-	-	2
Columbus, Ohio	135	71	39	11	6	8	2	Phoenix, Ariz.	142	95	27	7	3	10	1
Dayton, Ohio	116	81	26	5	2	2	4	Pueblo, Colo.	19	16	2	-	1	-	-
Detroit, Mich.	328	202	75	19	15	17	2	Salt Lake City, Utah	40	20	10	4	3	3	-
Evansville, Ind.	52	33	16	-	1	2	1	Tucson, Ariz.	105	72	25	6	-	-	12
Fort Wayne, Ind.	60	38	14	2	2	4	7								
Gary, Ind.	19	7	4	5	2	1	-	PACIFIC	1,909	1,273	394	121	56	61	104
Grand Rapids, Mich.	42	28	8	3	1	2	2	Berkeley, Calif.	17	14	3	-	-	-	1
Indianapolis, Ind.	189	123	41	11	5	9	1	Fresno, Calif.	109	70	22	10	-	7	8
Madison, Wis.	47	32	7	2	2	4	4	Glendale, Calif.	26	21	4	1	-	-	-
Milwaukee, Wis.	123	97	22	1	1	2	1	Honolulu, Hawaii	87	53	25	2	1	6	8
Peoria, Ill.	33	22	8	-	2	1	3	Long Beach, Calif.	111	71	21	7	6	6	6
Rockford, Ill.	32	23	5	4	-	-	5	Los Angeles, Calif.	597	386	131	44	19	17	17
South Bend, Ind.	74	50	17	5	-	2	4	Oakland, Calif.	78	55	17	4	2	-	6
Toledo, Ohio	131	105	21	2	1	2	4	Pasadena, Calif.	18	15	2	1	-	-	-
Youngstown, Ohio	53	47	6	-	-	-	1	Portland, Ore. §	136	117	2	4	4	6	2
								Sacramento, Calif.	53	35	13	3	1	1	4
W.N. CENTRAL	775	517	159	44	24	31	30	San Diego, Calif.	147	87	40	12	5	2	20
Des Moines, Iowa	69	48	15	4	-	2	1	San Francisco, Calif.	128	82	26	11	2	7	4
Duluth, Minn.	21	13	5	2	1	-	1	San Jose, Calif.	148	98	34	8	5	3	18
Kansas City, Kans.	31	20	4	4	-	3	4	Seattle, Wash.	140	100	24	7	7	2	3
Kansas City, Mo.	128	82	37	3	2	4	3	Spokane, Wash.	47	28	14	1	2	2	3
Lincoln, Neb.	34	29	4	1	-	-	2	Tacoma, Wash.	67	41	16	6	2	2	4
Minneapolis, Minn.	94	64	17	8	-	5	2								
Omaha, Neb.	64	41	16	1	3	3	1								
St. Louis, Mo.	191	123	33	12	13	10	8								
St. Paul, Minn.	63	48	9	2	3	1	4								
Wichita, Kans.	80	49	19	7	2	3	4	TOTAL	12,681 ^{††}	8,664	2,461	707	378	424	537

*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.

††Total includes unknown ages.

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

Cat Rabies Exposures — Continued

rabid cats outnumbered the number of rabid dogs, by approximately 20%. Control of rabies among wild animals is not technically or fiscally practical at this time. Immunization of pets represents the single most important control measure because it is effective in preventing disease and subsequent human exposures. The absence of human rabies in Iowa potentially underscores the efficacy of postexposure therapy using the combination of human rabies immune globulin and human diploid cell strain rabies vaccine.

TABLE 2. Summary of rabies incidence, exposure consultations at the State Department of Health, and number of persons treated — Iowa, 1977-1981

Year	Rabid animals	Consultations	Persons treated	Biting rabid animals resulting in treatment
1977	136	247	74	12*
1978	147	265	146	11†
1979	198	353	207	28§
1980	529	571	349	48¶
1981	889	661	452	57**
Total	1,899	2,097	1,228	156

*10 cats, 1 dog, 1 skunk.

†8 cats, 3 dogs.

§21 cats, 2 dogs, 3 skunks, 1 bat, 1 raccoon.

¶33 cats, 2 dogs, 4 skunks, 5 bats, 1 cow, 2 raccoons, 1 fox.

**42 cats, 6 dogs, 3 skunks, 2 bats, 1 cow, 1 horse, 1 rabbit, 1 muskrat.

Influenza Update — United States

Influenza A(H1N1) virus has been isolated from 1 of 2 patients surveyed in a focal outbreak of influenza at a juvenile correction institution in Sacramento, California. An estimated 40%-50% of the 100 inmates were affected. An additional 4 isolates of influenza A(H1N1) virus and 3 of type B virus, all associated with geographically scattered cases, were reported from California. Two influenza A(H1N1) viruses and 1 type B virus have been isolated in Oregon, the first for that state this season. The isolations were associated with sporadic influenza cases occurring in late January or early February. Influenza activity in Tucson, Arizona, has declined. School absenteeism in Tucson has returned to normal levels, and influenza virus was not isolated there during the first 2 weeks of February. The largest number of virus isolations continues to be reported from Houston, Texas, where the Influenza Research Center has identified a total of 159 type B and 21 type A(H1N1) influenza viruses this season through active clinical surveillance. Despite the large number of isolations, no outbreaks of influenza have been documented in Houston.

Reported by P Horn, MD, Sacramento County Health Dept, J Chin, MD, State Epidemiologist, California State Dept of Health Svcs; W Murphy, PhD, J Googins, MD, State Epidemiologist, Oregon Dept of Human Resources; R Worrell, RN, P Noland, MD, Pima County Health Dept, L Minnich, G Ray, MD, University Hospital, Tucson, J Sacks, MD, Acting State Epidemiologist, Arizona Dept of Health Svcs; P Glezen, MD, Influenza Research Center, Baylor College of Medicine, Houston, C Webb Jr, MD, State Epidemiologist, Texas Dept of Health; WHO Collaborating Center for Influenza, Center for Infectious Diseases, CDC.

Surveillance Summary**Human Plague — United States, 1981**

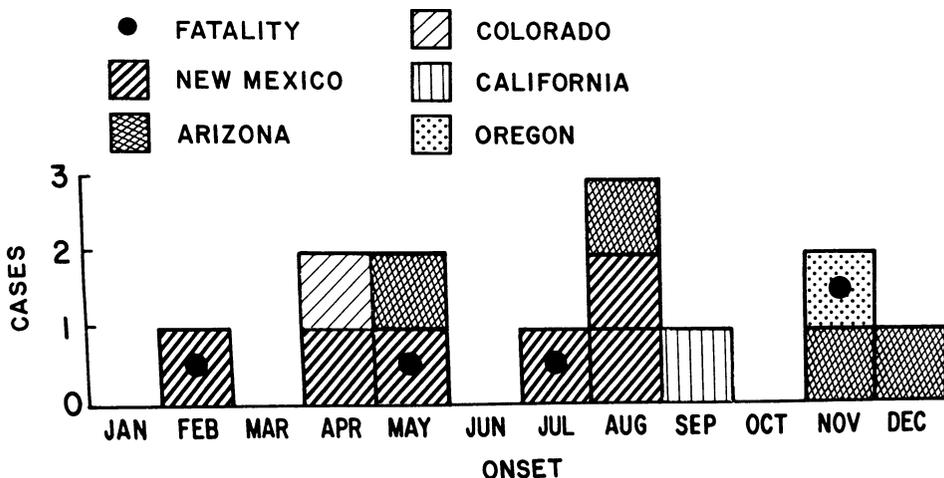
For 1981, 13 cases of human plague, 4 of them fatal, were reported from 5 states: Arizona (4), California (1), Colorado (1), Oregon (1 fatal), New Mexico (6, 3 fatal) (Figure 2). Twelve cases were confirmed at CDC by fluorescent antibody testing and by bacteriologic identification and characterization; 1 case was confirmed serologically. The patients ranged in age from 2 to 72 years with a mean age of 38.7 years. Seven patients (54%) were male, 6 were white, 6 were American Indian (5 Navajo, 1 Hopi), and 1 was Asian. The clinical manifestations included bubonic plague (5 patients), septicemic plague (5), septicemic with confirmed secondary pneumonic plague (2), and presentation unspecified (1).

The various modes of infection were flea bite (5 cases), skinning an infected bobcat (1), rabbit hunting (1), bite of an infected domestic cat (1), and undetermined (5). The 5 cases acquired by flea bite occurred in relation to epizootic plague among prairie dogs (*Cynomys gunnisoni*) and rock squirrels (*Spermophilus variegatus*). Two patients with unknown source of infection resided in areas where an epizootic of plague was occurring in prairie dogs.

From 1970 through 1981, enzootic and epizootic plague among rodents and carnivores was documented in 12 western states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming. Human plague cases were reported from 8 of these states. The geographic distribution of 136 human cases in the period 1970-1981 is shown in Figure 3, and the totals by state for the same period are shown in Table 3.

Reported by MM Ettenger, MD, Dept of Internal Medicine, Gallup Indian Medical Center, J Porvoznik, MD, Indian Health Svcs, MR Skeels, PhD, Scientific Laboratories Div, JM Mann, MD, Chief of Communicable Diseases, Epidemiology, and Control, Health Svcs Div, New Mexico Health and Environment Dept, New Mexico; J Leedom, MD, P Heseltine, MD, Los Angeles County USC Medical Center, SL Fannin, MD, Acute Communicable Disease Control, County of Los Angeles Dept of Health Svcs, J Chin, MD, State Epidemiologist, Dept of Health Svcs, California; JK Emerson, DVM, MPH, State Public Health Veterinarian, RS

FIGURE 2. Temporal and geographic distribution and clinical outcome of 13 human plague cases — United States, 1981



Human Plague – Continued

Hopkins, MD, State Epidemiologist, State Dept of Health, Colorado; LP Williams, Jr, DVM, MPH, State Public Health Veterinarian, Dept of Human Resources, Oregon; JJ Sacks, MD, State Epidemiologist (Acting), State Dept of Health Svcs, Arizona; Field Svcs Div, Epidemiology Program Office, Vectorborne Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: Plague is a bacterial disease caused by the organism, *Yersinia pestis*. It is usually contracted from the bite of an infected wild-rodent flea but can also occur as the result of direct contact exposure to infected rodents, rabbits, and carnivores. The infection can be spread from person to person by patients with pulmonary involvement with *Y. pestis*. Although this was most likely a major cause of rapid dissemination during great epidemics such as occurred in China (1), pneumonic plague is seen infrequently in modern times. Moreover,

FIGURE 3. Geographic distribution of human plague cases, by county, United States, 1970-1981

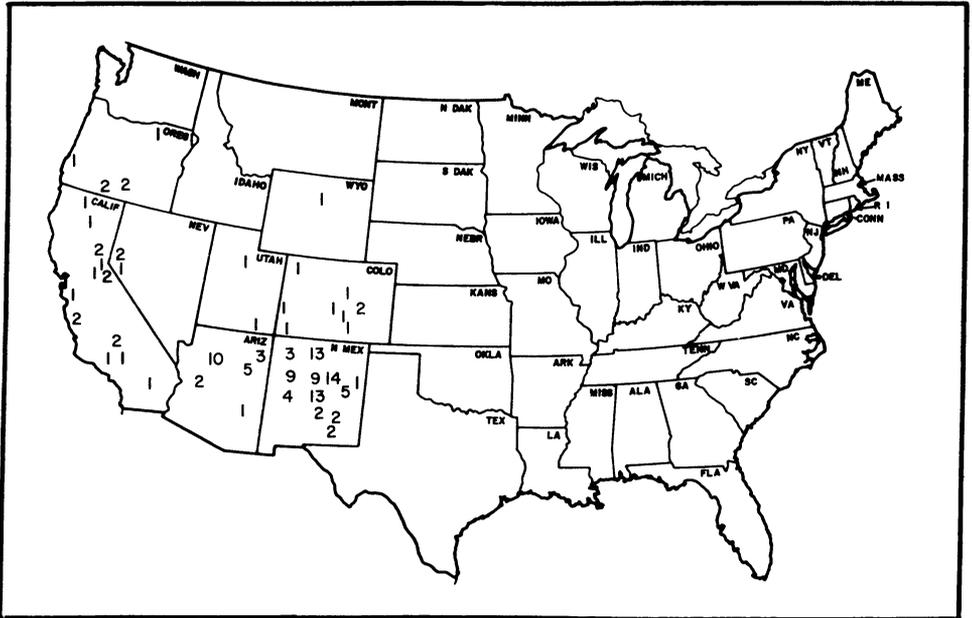


TABLE 3. Reported cases of human plague, by state, 1970-1981

State	Number of Cases	Percent
New Mexico	77	56.6
Arizona	21	15.4
California	16	11.8
Colorado	9	6.6
Oregon	7	5.2
Nevada	3	2.2
Utah	2	1.5
Wyoming	1	0.7
TOTAL	136	100.0

Human Plague – Continued

today plague pneumonia usually results from extension of septicemia to involve the lungs (secondary plague pneumonia) rather than from direct seeding of the lungs by inhaled organisms (primary plague pneumonia). Of 105 cases of human plague reported to CDC from 1970 to 1979, 82% were associated with an antecedent flea bite (2). In this same period, 19 cases (18%) of pneumonic plague secondary to septicemia were reported. Since 1925, only 1 case of primary pneumonic plague has been documented in the United States. This case occurred at Lake Tahoe, California, in 1980, and resulted from exposure to a kitten with plague pneumonia.

The geographic distribution of cases for 1981 generally reflects the same pattern seen since 1970. New Mexico and Arizona continue to be important foci for human cases. Possible explanations for this distribution are the exposure of American Indian populations to enzootic and epizootic plague foci through hunting and food-gathering activities and the growth of non-Indian populations and expansion of their residential areas into previously uninhabited areas of enzootic plague. Faulty environmental sanitation and premises management may also play a role by providing sites for harboring rodents (3).

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p 37 In the article "Measles—United States, 1981," 16 areas were reported as having no indigenous measles in 1981. Information recently provided to CDC indicates that South Carolina should now be added to this list. Of the 2 cases reported to CDC from South Carolina for 1981, 1 was acquired outside the United States, and the other was acquired out of state. Thus, there were 17 reporting areas that had no indigenous measles transmission in 1981.

Reported by RL Parker, DVM, State Epidemiologist, South Carolina State Dept of Health and Environmental Control; Immunization Div, Center for Prevention Svcs, CDC.

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE / CENTERS FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333
OFFICIAL BUSINESS**

Director, Centers for Disease Control
William H. Foege, M.D.
Director, Epidemiology Program Office
Philip S. Brachman, M.D.
Editor
Michael B. Gregg, M.D.
Mathematical Statistician
Keewha

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JOSEPH MC DADE PHD
LEGIONNAIRE ACTIVITY
LEPROSY & RICKETTSIAL BR
VIROLOGY DIV, CID
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