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MORBIDITY AND MORTALITY WEEKLY REPORT

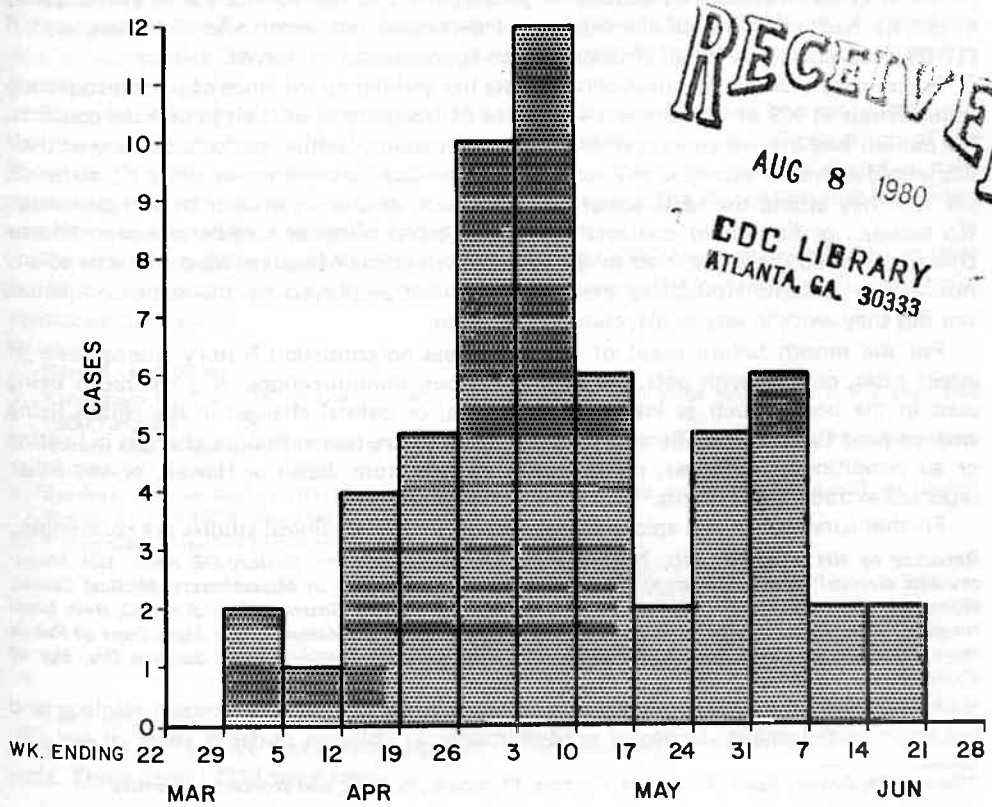
Epidemiologic Notes and Reports

Kawasaki Syndrome—Massachusetts

A cluster of 57 cases of Kawasaki syndrome (KS, also known as Kawasaki disease and mucocutaneous lymph node syndrome) occurred in eastern and central Massachusetts during the period March 30-June 28, 1980 (Figure 1).

Cases were identified by contacting hospitals throughout the state and by screening reports from individual physicians. Cases were considered confirmed if they had been observed by a physician to satisfy published diagnostic criteria (*1*).

FIGURE 1. Cases of Kawasaki syndrome, by date of onset, eastern and central Massachusetts, March 23-June 28, 1980



Kawasaki Syndrome -- Continued

Medical records of cases were reviewed. A questionnaire was administered by telephone to parents of KS patients and to parents of controls, matched for age, sex, and race and chosen from the same pediatric practice as the patient. Throat and rectal swabs and blood and urine samples were collected from acutely ill patients for microbial isolation studies. Sera were collected from patients and controls.

The cluster occurred in an 8-county area,* which had an overall attack rate of 16.5 cases/100,000 children under 5 years of age during the 3-month cluster period compared with a rate of 1.6/100,000 during the preceding 12 months ($p<0.0001$), and a rate of 4.1/100,000 elsewhere in Massachusetts during the cluster period ($p<0.05$). Similar attack rates were observed for each county within the 8-county area. No more than 3 KS patients lived in any single town, except for 5 patients in the city of Boston, where no more than 2 lived in any single neighborhood.

The mean age of the KS patients was 2.9 years (range 4 months-14 years, median age 1.9 years). Of the 57 cases, 30 (53%) were male and 27 (47%) female; 46 (81%) were white, 6 (11%) black, 4 (7%) Asian (3 Oriental, 1 Indian), and 1 (2%) Hispanic. One 6-year-old boy had had a previous episode of KS at age 4. Fifty-one (89%) of the 57 reported cases were hospitalized. There were no deaths.

Evidence of cardiac involvement was reported in 17/57 (29.8%) cases. Of 57 children on whom electrocardiograms were done, 2 (3.5%) had evidence of myocardial infarction, and 6 (10.5%) had transient EKG changes consistent with diffuse ischemia or myocarditis. Of 47 children studied by echocardiography, 4 (8.5%) had coronary artery aneurysms, 4 (8.5%) had transient cardiomegaly and decreased left ventricular function, and 8 (17.0%) had small pericardial effusions which spontaneously resolved.

Preliminary analysis of questionnaire data has yielded no evidence of person-to-person transmission of KS or of common exposures of KS patients or their household contacts. No patient had known contact with another KS patient. Neither patients nor any of their household contacts attended the same schools or day-care centers as other KS patients, nor did they attend the same social functions, such as sports events or church gatherings. No patients or household contacts had similar travel histories outside of eastern Massachusetts, nor had they traveled to the same towns inside of eastern Massachusetts to any noteworthy extent. Household members were not employed by the same companies, nor did they work in any single, common location.

For the month before onset of KS, there was no consistent history among cases of insect bites, contact with pets, use of medications, immunizations, new chemicals being used in the house (such as insect sprays, soaps, or paints) changes in the child's living environment (such as new furniture, toys, construction, renovation, or changes in heating or air conditioning systems), contact with visitors from Japan or Hawaii, or any other reported extraordinary events.

Further surveillance and epidemiologic, laboratory, and clinical studies are continuing.

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Editorial Note: Kawasaki syndrome is an acute febrile illness of unknown etiology and unknown pathogenesis; it occurs predominantly in children under 5 years of age (*2*).

*Barnstable, Bristol, Essex, Middlesex, Norfolk, Plymouth, Suffolk, and Worcester counties.

Kawasaki Syndrome — Continued

Features of the illness include fever lasting 5 or more days, conjunctival injection, oropharyngeal mucous membrane changes, peripheral extremity changes (edema, erythema, and/or desquamation), rash, and lymphadenopathy. Prominent laboratory findings include thrombocytosis and an elevated erythrocyte sedimentation rate. Cardiac involvement may occur, causing death in 0.5%-2.8% of KS cases reported in the United States (*3*) and in Japan (*4*), where the disease was first described and is endemic. In the cluster reported here, the age distribution of cases and features of the clinical illness are in general agreement with Japanese data (*4*).

The great majority of KS cases in Japan and the United States have occurred sporadically. Marked temporal and geographic clustering of KS cases is an unusual occurrence, which has only recently been recognized. The causes and significance of this phenomenon are unknown. The Massachusetts outbreak is the largest cluster reported in the United States, to date. In Japan, where more than 20,000 cases have been identified by nationwide surveillance begun in 1967, the first large cluster was not identified until 1979 (*5*). In the United States, where more than 650 cases have been reported to CDC since 1976, clusters have been identified in the following areas in addition to Massachusetts: New York City (October 1977-April 1978; 40 cases); Rochester, New York (October-December 1979; 23 cases) (*1*); and Los Angeles County, California (February-April 1980; 20 cases).

Extensive investigation of the Rochester and Massachusetts clusters has thus far failed to reveal any evidence of person-to-person transmission of KS or of common exposures of KS patients or family members. No etiologic agent has yet been identified. Further epidemiologic studies, as well as laboratory studies on specimens collected in these investigations, are underway.

Since the etiology of KS is unknown, "Kawasaki syndrome" may be a more appropriate designation than the commonly used term "Kawasaki disease." Designation of the illness as a syndrome, however, should not detract from the need to diagnose cases according to clearly established criteria (*1*), among which is the stipulation that the illness cannot be explained by another known disease process.

Physicians are encouraged to report cases of KS to CDC through their local and state health departments. CDC can provide epidemiologic consultation and certain laboratory assistance, as needed.

References

1. MMWR 1980;29:61-3.
2. Yanagihara R, Todd JK. Acute febrile mucocutaneous lymph node syndrome. Am J Dis Child 1980;134;603-14.
3. Morens DM, Anderson LJ, Hurwitz ES. National surveillance of Kawasaki disease. Pediatrics 1980; 65:21-5.
4. Egashira Y, chairman, Symposium of Kawasaki disease, held at National Institute of Health, Tokyo, 16 Feb 1979. Jpn J Med Sci Biol 1979;32:235-51.
5. T Kawasaki. Personal communication.

Plague — United States, 1980

Through July 31, 9 cases of plague that occurred in 1980 were reported to CDC (Table 1, p. 377). Five cases were acquired in New Mexico, 2 in California, and 2 in Nevada. Three cases (33%) were fatal.

Plague — Continued

All patients had bubos. Three had abnormal chest X rays; 2 of these patients died, and 1 had areas of pneumonitis confirmed at autopsy. The following case report exemplifies some of the clinical features and management decisions which are common to many cases.

On June 4, a 40-year-old woman with a past history of bronchitis, noted numerous erythematous papules, which she thought were insect bites, on her right thigh. Two days later, she developed shaking chills, myalgia, and arthralgia. On June 8, she complained of a severe frontal headache and dyspnea. The next day, she had a nonproductive cough that was more severe than usual, and her family thought she had a fever. Pain also developed in the right side of the groin, causing difficulty in walking, and she became intermittently delirious.

Upon admission to a hospital in Santa Fe, New Mexico, on June 10, she was lethargic and had an oral temperature of 103.2 F (39.5 C), blood pressure of 90/60, a heart rate of 130, and a respiratory rate of 24. Rales were noted in the left lung field, and there was exquisite tenderness in the right inguinal region. A pea-sized inguinal lymph node was palpable, and there was minimal induration on the overlying skin. Seven small erythematous papules were seen on the right thigh.

The white blood cell count was 18,800/mm^3 with 79% neutrophils, 13% bands, 5% monocytes, and 3% lymphocytes. A chest X ray revealed a small, basilar infiltrate in the left lung.

(Continued on page 377)

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

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

DISEASE	31st WEEK ENDING		MEDIAN 1975-1979	CUMULATIVE, FIRST 31 WEEKS		
	August 2, 1980	August 4, 1979		August 2, 1980	August 4, 1979	MEDIAN 1975-1979
Aseptic meningitis	183	244	168	2,410	2,490	1,884
Brucellosis	5	8	4	106	88	124
Chickenpox	774	514	514	154,148	169,716	148,739
Diphtheria	1	1	1	3	7	55
Encephalitis: Primary (arthropod-borne & unspec.)	25	43	43	371	394	433
Post-infectious	8	6	6	128	162	162
Hepatitis, Viral: Type B	361	316	276	10,094	8,462	8,850
Type A	567	565	565	15,848	17,451	18,437
Type unspecified	250	206	142	6,982	5,946	5,069
Malaria	39	15	15	1,103	382	308
Measles (rubeola)	128	144	195	12,523	11,375	22,845
Meningococcal infections: Total	31	31	22	1,729	1,792	1,164
Civilian	31	31	22	1,722	1,774	1,157
Military	–	–	–	7	18	18
Mumps	55	112	206	6,790	10,728	15,374
Pertussis	57	51	35	780	784	784
Rubella (German measles)	31	63	76	3,124	10,372	14,456
Tetanus	2	1	1	39	37	37
Tuberculosis	502	622	622	16,201	16,523	17,940
Tularemia	12	9	5	98	114	82
Typhoid fever	15	12	12	244	272	229
Typhus fever, tick-borne (Rky. Mt. spotted)	62	43	53	652	604	604
Venereal diseases:						
Gonorrhea: Civilian	20,653	20,615	21,165	571,373	573,920	573,920
Military	392	574	574	15,607	16,134	16,141
Syphilis, primary & secondary: Civilian	468	424	440	15,279	14,086	14,086
Military	5	5	6	184	176	182
Rabies in animals	114	111	70	3,948	2,900	1,789

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1980		CUM. 1980
Anthrax	–	Poliomyelitis: Total	6
Botulism (Mich. 2, Calif. 4)	32	Paralytic	4
Cholera	7	Psittacosis (Oreg. 1)	49
Congenital rubella syndrome (Mich. 1, Wis. 1, Calif. 2)	43	Rabies in man	–
Leprosy (Minn. 1, Tex. 2, Utah 1, Hawaii 1)	110	Trichinosis (Va. 1, Tex. 1)	74
Leptospirosis (La. 1, Hawaii 1)	38	Typhus fever, flea-borne (endemic, murine)	40
Plague (N. Mex. 1)	8		

All delayed reports will be included in the following week's cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 2, 1980, and August 4, 1979 (31st 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	183	5	774	1	3	25	43	8	361	567	250	39	1,103
NEW ENGLAND	12	–	117	–	–	1	2	–	12	12	3	2	72
Maine	1	–	18	–	–	–	–	–	–	–	–	–	12
N.H.	–	–	1	–	–	–	–	–	–	1	1	–	7
Vt.	–	–	35	–	–	–	–	–	–	–	–	–	–
Mass.	–	–	44	–	–	1	–	–	5	4	2	–	35
R.I.	10	–	3	–	–	–	–	–	2	3	–	1	7
Conn.	1	–	16	–	–	–	2	–	5	4	–	1	11
MID. ATLANTIC	43	–	177	–	1	2	4	–	63	46	19	7	150
Upstate N.Y.	4	–	91	–	–	–	–	–	13	22	2	–	21
N.Y. City	6	–	83	–	1	–	–	–	14	1	2	1	38
N.J.	24	–	NN	–	–	2	1	–	15	11	7	5	43
Pa.	9	–	3	–	–	–	3	–	21	12	8	1	48
E.N. CENTRAL	14	–	319	–	1	1	14	2	54	69	22	3	57
Ohio	–	–	39	–	–	–	6	–	8	4	6	–	8
Ind.	1	–	36	–	–	–	3	1	20	17	8	1	4
Ill.	–	–	57	–	–	–	–	–	8	25	4	–	19
Mich.	11	–	48	–	1	1	–	–	15	17	4	1	19
Wis.	2	–	139	–	–	–	5	1	3	6	–	1	7
W.N. CENTRAL	10	1	15	1	1	1	7	2	16	14	9	6	44
Minn.	–	–	–	–	–	–	–	–	–	–	–	2	17
Iowa	2	–	1	–	–	1	7	–	1	2	2	2	7
Mo.	5	1	6	1	1	–	–	–	11	7	6	2	11
N. Dak.	–	–	–	–	–	–	–	–	–	–	–	–	–
S. Dak.	1	–	1	–	–	–	–	–	1	1	–	–	2
Nebr.	1	–	7	–	–	–	–	–	2	1	1	–	4
Kans.	1	–	–	–	–	–	–	2	1	3	–	–	3
S. ATLANTIC	35	1	87	–	–	7	–	3	80	119	38	7	116
Del.	–	–	2	–	–	–	–	–	–	4	–	–	–
Md.	6	–	14	–	–	2	–	–	9	7	5	–	20
D.C.	–	–	–	–	–	–	–	–	4	–	–	–	1
Va.	7	1	3	–	–	3	–	–	23	3	7	2	43
W. Va.	–	–	41	–	–	–	–	–	–	2	–	1	4
N.C.	7	–	NN	–	–	–	–	–	2	31	4	1	6
S.C.	3	–	1	–	–	–	–	–	3	1	1	–	5
Ga.	–	–	–	–	–	–	–	–	21	24	–	1	14
Fla.	12	–	26	–	–	2	–	3	18	47	21	2	23
E.S. CENTRAL	14	–	9	–	–	2	3	1	27	66	5	–	10
Ky.	1	–	9	–	–	–	–	–	7	38	–	–	2
Tenn.	5	–	NN	–	–	1	–	–	10	14	1	–	–
Ala.	5	–	–	–	–	–	3	1	6	4	4	–	6
Miss.	3	–	–	–	–	1	–	–	4	10	–	–	2
W.S. CENTRAL	18	3	11	–	–	3	6	–	31	68	60	–	107
Ark.	1	–	–	–	–	1	–	–	3	8	5	–	6
La.	2	–	NN	–	–	–	2	–	10	9	2	–	39
Okla.	1	2	–	–	–	–	1	–	3	9	4	–	10
Tex.	14	1	11	–	–	2	3	–	15	42	49	–	52
MOUNTAIN	3	–	16	–	–	–	3	–	7	34	32	2	44
Mont.	–	–	5	–	–	–	–	–	–	1	2	–	–
Idaho	–	–	–	–	–	–	–	–	–	2	–	–	1
Wyo.	–	–	–	–	–	–	1	–	–	1	–	–	2
Colo.	2	–	10	–	–	–	1	–	3	4	3	2	23
N. Mex.	–	–	–	–	–	–	–	–	–	–	–	–	2
Ariz.	–	–	NN	–	–	–	–	–	2	14	10	–	10
Utah	1	–	1	–	–	–	1	–	2	9	15	–	–
Nev.	–	–	–	–	–	–	–	–	–	3	2	–	6
PACIFIC	34	–	23	–	–	8	4	–	71	139	62	12	503
Wash.	10	–	13	–	–	–	1	–	6	10	4	–	37
Oreg.	2	–	2	–	–	1	–	–	5	18	5	1	29
Calif.	18	–	–	–	–	2	3	–	57	111	53	11	418
Alaska	2	–	1	–	–	–	–	–	1	–	–	–	5
Hawaii	2	–	7	–	–	5	–	–	2	–	–	–	14
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	2
P.R.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	1
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.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 2, 1980, and August 4, 1979 (31st 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	128	12,523	11,375	31	1,729	1,792	55	6,790	57	31	3,124	39
NEW ENGLAND	–	658	284	–	98	93	1	543	–	–	202	1
Maine	–	33	17	–	5	5	–	284	–	–	68	1
N.H.	–	321	32	–	6	9	–	19	–	–	33	–
Vt.	–	226	116	–	13	6	1	8	–	–	3	–
Mass.	–	54	13	–	31	31	–	118	–	–	74	–
R.I.	–	2	102	–	7	6	–	20	–	–	9	–
Conn.	–	22	4	–	36	36	–	94	–	–	15	–
MID. ATLANTIC	17	3,697	1,362	9	314	263	11	760	4	11	510	6
Upstate N.Y.	9	668	574	2	105	96	5	98	3	8	178	1
N.Y. City	7	1,147	692	2	80	63	3	82	–	2	90	2
N.J.	1	819	53	4	64	66	3	94	1	1	97	–
Pa.	–	1,063	43	1	65	38	–	486	–	–	145	3
E.N. CENTRAL	60	2,323	3,018	1	198	184	9	2,631	20	7	753	2
Ohio	2	355	250	–	72	73	3	1,107	–	–	4	1
Ind.	1	94	193	–	34	38	2	106	20	3	321	–
Ill.	3	319	1,350	–	30	7	2	345	–	–	156	–
Mich.	–	230	797	–	49	48	1	790	–	2	123	1
Wis.	54	1,325	428	1	13	18	1	283	–	2	149	–
W.N. CENTRAL	9	1,307	1,536	2	66	58	1	244	5	2	218	3
Minn.	9	1,086	1,031	–	20	10	–	22	3	–	51	2
Iowa	–	–	16	1	9	9	1	38	1	–	7	–
Mo.	–	64	408	–	24	30	–	69	1	2	45	–
N. Dak.	–	–	20	–	1	1	–	4	–	–	5	–
S. Dak.	–	–	1	–	4	3	–	1	–	–	–	–
Nebr.	–	83	–	–	–	–	–	9	–	–	1	–
Kans.	–	74	60	1	8	5	–	101	–	–	109	1
S. ATLANTIC	7	1,850	1,690	11	418	442	10	880	7	3	304	6
Del.	–	3	1	–	2	5	–	37	–	–	1	–
Md.	–	71	13	1	43	39	2	302	–	–	70	–
D.C.	–	–	–	–	1	–	–	3	–	–	–	–
Va.	–	300	250	2	38	64	–	49	1	–	50	2
W. Va.	–	19	51	–	14	8	2	74	–	–	22	1
N.C.	3	128	108	3	81	63	–	85	4	1	44	–
S.C.	–	157	150	–	50	54	1	201	–	–	49	2
Ga.	–	799	363	–	72	66	–	1	–	–	–	–
Fla.	4	373	754	5	117	143	5	128	2	2	68	1
E.S. CENTRAL	2	337	188	5	162	135	12	831	9	–	77	3
Ky.	1	52	37	2	51	29	11	735	2	–	35	1
Tenn.	1	179	48	1	44	38	–	24	3	–	36	1
Ala.	–	22	83	–	42	33	–	14	–	–	4	1
Miss.	–	84	20	2	25	35	1	58	4	–	2	–
W.S. CENTRAL	5	910	875	1	183	283	4	239	5	3	112	10
Ark.	–	13	7	–	15	24	–	20	–	1	4	1
La.	–	13	245	–	66	110	1	65	1	1	10	2
Okla.	–	740	22	1	17	24	–	–	3	–	4	–
Tex.	5	144	601	–	85	125	3	154	1	1	94	7
MOUNTAIN	14	430	300	–	51	70	1	176	3	2	129	–
Mont.	–	1	53	–	2	6	–	50	–	–	37	–
Idaho	–	–	18	–	4	6	–	15	–	1	18	–
Wyo.	–	–	36	–	2	1	–	–	–	–	1	–
Colo.	–	23	57	–	13	5	–	46	–	–	9	–
N. Mex.	–	9	38	–	7	4	–	–	–	–	5	–
Ariz.	13	342	72	–	8	31	1	30	1	–	30	–
Utah	1	47	15	–	2	8	–	26	2	1	24	–
Nev.	–	8	11	–	13	9	–	9	–	–	5	–
PACIFIC	14	1,011	2,122	2	239	264	6	486	4	3	819	8
Wash.	4	174	1,119	1	46	42	2	122	1	–	69	–
Oreg.	–	–	56	–	40	18	–	57	–	–	50	–
Calif.	10	827	867	1	147	191	4	286	2	3	684	8
Alaska	–	5	17	–	5	5	–	11	1	–	10	–
Hawaii	–	5	63	–	1	8	–	10	–	–	6	–
Guam	NA	3	4	–	1	1	NA	7	NA	NA	–	–
P.R.	NA	93	317	–	8	3	NA	116	NA	NA	13	7
V.I.	NA	6	4	–	1	3	NA	2	NA	NA	–	–
Pac. Trust Terr.	NA	6	7	–	–	1	NA	14	NA	NA	1	–

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 2, 1980, and August 4, 1979 (31st 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	502	16,201	98	15	244	62	652	20,653	571,373	573,920	468	15,279	14,086	3,948
NEW ENGLAND	27	453	2	–	6	–	8	495	14,353	14,500	7	372	268	37
Maine	2	34	–	–	1	–	–	19	827	1,005	–	4	7	18
N.H.	–	9	–	–	–	–	–	31	498	535	–	1	13	6
Vt.	6	17	–	–	–	–	–	12	328	346	–	5	1	–
Mass.	13	243	1	–	3	–	4	240	5,958	5,752	3	235	158	6
R.I.	3	52	–	–	1	–	2	32	919	1,201	–	19	9	–
Conn.	3	98	1	–	1	–	2	161	5,823	5,661	4	108	80	7
MID. ATLANTIC	95	2,638	1	4	53	4	30	1,915	61,408	61,384	70	2,193	2,174	32
Upstate N.Y.	16	515	–	1	8	4	11	366	11,464	9,966	8	181	153	17
N.Y. City	33	948	1	3	23	–	2	800	23,831	24,363	35	1,438	1,480	–
N.J.	29	561	–	–	10	–	8	257	10,975	11,338	8	268	288	5
Pa.	17	614	–	–	12	–	9	492	15,138	15,717	19	306	253	10
E.N. CENTRAL	52	2,290	1	2	19	3	20	3,085	87,233	88,106	32	1,412	1,913	609
Ohio	21	402	–	–	4	–	10	481	23,038	24,244	–	227	359	33
Ind.	2	235	–	–	–	–	2	237	8,355	8,045	7	114	128	57
Ill.	7	823	–	2	9	1	6	1,280	27,603	26,709	20	791	1,083	349
Mich.	19	694	1	–	4	1	1	775	19,794	20,935	4	225	289	7
Wis.	3	136	–	–	2	1	1	312	8,443	8,173	1	55	54	163
W.N. CENTRAL	28	617	15	–	17	2	27	1,065	26,498	27,950	4	189	180	1,250
Minn.	7	114	1	–	1	–	–	137	4,355	4,715	–	65	49	127
Iowa	1	56	1	–	1	–	1	102	2,857	3,431	–	9	25	252
Mo.	17	290	12	–	13	2	15	526	11,674	12,029	4	96	77	283
N. Dak.	2	28	–	–	–	–	–	16	382	479	–	3	2	152
S. Dak.	–	33	–	–	1	–	2	35	814	943	–	2	1	250
Nebr.	–	27	1	–	–	–	–	64	2,072	1,950	–	7	2	70
Kans.	1	69	–	–	1	–	9	185	4,344	4,403	–	7	24	116
S. ATLANTIC	96	3,640	9	3	28	36	424	5,031	142,882	140,115	117	3,657	3,407	278
Del.	–	53	–	–	1	–	1	51	1,962	2,291	–	10	18	1
Md.	16	463	2	–	2	6	45	403	15,103	17,126	6	253	221	21
D.C.	11	216	–	–	3	–	–	366	9,888	8,975	7	264	268	–
Va.	7	390	–	–	4	3	42	577	12,605	13,382	12	334	296	8
W. Va.	5	136	–	1	3	–	2	78	1,775	1,953	–	14	41	12
N.C.	24	637	3	–	2	19	186	684	20,516	19,951	2	247	281	11
S.C.	12	329	–	–	3	4	108	629	13,717	13,212	15	211	167	41
Ga.	–	496	4	–	–	4	36	1,231	27,397	26,768	40	1,048	941	133
Fla.	21	920	–	2	10	–	4	1,012	39,919	36,457	35	1,276	1,174	51
E.S. CENTRAL	50	1,479	6	–	7	11	55	1,884	46,855	49,810	48	1,249	932	220
Ky.	7	317	–	–	2	–	2	189	6,926	6,549	5	82	101	100
Tenn.	16	498	6	–	–	5	36	540	16,731	17,877	32	528	388	93
Ala.	12	408	–	–	2	3	9	953	13,903	14,681	11	267	173	27
Miss.	15	256	–	–	3	3	8	202	9,295	10,703	–	372	270	–
W.S. CENTRAL	71	1,754	48	4	33	6	75	2,179	73,611	74,515	62	2,959	2,542	1,012
Ark.	11	180	30	2	4	1	14	216	5,675	5,873	–	85	91	130
La.	16	324	–	–	–	–	1	616	13,445	13,169	16	720	596	7
Okla.	5	180	13	2	3	5	44	317	7,318	6,939	1	59	55	171
Tex.	39	1,070	5	–	26	–	16	1,030	47,173	48,534	45	2,095	1,800	704
MOUNTAIN	18	430	12	1	17	–	9	1,012	22,022	22,396	23	382	278	135
Mont.	–	18	3	–	1	–	3	29	816	1,116	–	1	7	26
Idaho	1	21	1	–	1	–	1	20	981	965	1	23	19	1
Wyo.	1	16	3	–	–	–	2	26	660	600	–	8	5	8
Colo.	3	62	3	1	3	–	–	174	5,965	5,999	–	97	60	27
N. Mex.	6	91	–	–	2	–	2	145	2,780	2,845	–	66	52	26
Ariz.	7	170	1	–	7	–	–	385	5,865	6,171	22	129	84	44
Utah	–	32	1	–	3	–	1	37	1,024	1,165	–	10	3	3
Nev.	–	20	–	–	–	–	–	196	3,931	3,535	–	48	48	–
PACIFIC	65	2,900	4	1	64	–	4	3,987	96,511	95,144	105	2,866	2,392	375
Wash.	7	261	–	–	1	–	–	NA	7,270	8,206	NA	123	135	–
Oreg.	1	103	1	–	9	–	1	162	6,581	6,015	–	64	106	2
Calif.	53	2,447	2	1	54	–	3	3,669	78,363	76,096	103	2,566	2,071	329
Alaska	–	41	1	–	–	–	–	98	2,343	3,089	–	8	16	44
Hawaii	4	48	–	–	–	–	–	58	1,954	1,738	2	105	64	–
Guam	NA	24	–	NA	–	NA	–	NA	50	70	NA	–	–	–
P.R.	NA	103	–	NA	5	NA	–	NA	1,455	1,207	NA	302	293	26
V.I.	NA	–	–	NA	–	NA	–	NA	108	105	NA	10	6	–
Pac. Trust Terr.	NA	30	–	NA	–	NA	–	NA	258	290	NA	–	1	–

NA: Not available.

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending August 2, 1980 (31st week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	641	429	142	33	20	38
Boston, Mass.	189	120	43	11	8	17
Bridgeport, Conn.	33	21	10	–	–	2
Cambridge, Mass.	21	11	7	2	1	1
Fall River, Mass.	29	24	3	2	–	1
Hartford, Conn. ††	51	33	12	4	2	1
Lowell, Mass.	24	15	7	1	1	–
Lynn, Mass.	19	12	5	2	–	–
New Bedford, Mass.	15	11	4	–	–	1
New Haven, Conn.	44	31	8	2	1	–
Providence, R.I.	73	52	14	4	2	5
Somerville, Mass.	12	10	1	–	–	1
Springfield, Mass.	46	26	13	3	4	3
Waterbury, Conn.	30	21	8	–	–	1
Worcester, Mass.	55	42	7	2	1	5
MID. ATLANTIC	2,714	1,719	652	206	61	96
Albany, N.Y.	45	26	16	1	1	–
Allentown, Pa.	30	16	14	–	–	–
Buffalo, N.Y.	108	69	29	6	3	4
Camden, N.J.	41	27	8	3	1	1
Elizabeth, N.J.	23	15	5	–	2	1
Erie, Pa.†	34	25	5	2	2	–
Jersey City, N.J.	48	35	9	4	–	1
Newark, N.J.	97	50	28	11	1	2
N.Y. City, N.Y.	1,474	947	324	137	29	46
Paterson, N.J.	35	21	10	2	1	1
Philadelphia, Pa.†	332	199	96	17	4	16
Pittsburgh, Pa.†	83	44	27	7	5	2
Reading, Pa.	36	21	10	2	3	–
Rochester, N.Y.	117	80	26	7	2	16
Schenectady, N.Y.	24	16	5	2	–	–
Scranton, Pa.†	20	16	4	–	–	–
Syracuse, N.Y.	79	51	17	3	5	1
Trenton, N.J.	37	26	6	2	1	–
Utica, N.Y.	17	12	5	–	–	2
Yonkers, N.Y.	34	23	8	–	1	3
E.N. CENTRAL	2,206	1,303	595	147	87	41
Akron, Ohio	93	53	22	6	11	1
Canton, Ohio	42	34	6	1	–	–
Chicago, Ill.	508	301	136	37	17	8
Cincinnati, Ohio	135	92	36	6	–	4
Cleveland, Ohio	149	86	41	11	6	1
Columbus, Ohio	137	81	41	4	7	5
Dayton, Ohio	113	63	31	9	4	3
Detroit, Mich.	245	114	70	34	16	1
Evansville, Ind.	44	25	15	1	2	1
Fort Wayne, Ind.	45	27	12	2	1	1
Gary, Ind.	19	11	3	4	1	–
Grand Rapids, Mich.	44	26	13	1	3	5
Indianapolis, Ind.	158	86	48	15	5	–
Madison, Wis.	33	14	11	2	5	2
Milwaukee, Wis.	128	87	36	2	1	3
Peoria, Ill.	44	27	10	2	2	2
Rockford, Ill.	36	21	8	1	–	2
South Bend, Ind.	45	31	12	–	1	1
Toledo, Ohio	119	80	26	7	2	1
Youngstown, Ohio	69	44	18	2	3	–
W.N. CENTRAL	779	502	163	39	38	19
Des Moines, Iowa	49	35	10	2	–	–
Duluth, Minn.	26	17	6	–	–	2
Kansas City, Kans.	49	34	8	2	–	2
Kansas City, Mo.	126	75	30	7	10	2
Lincoln, Nebr.	17	14	2	–	1	1
Minneapolis, Minn.	88	52	22	5	1	2
Omaha, Nebr.	97	55	27	9	4	–
St. Louis, Mo.	207	129	41	8	21	4
St. Paul, Minn.	61	50	6	1	1	3
Wichita, Kans.	59	41	11	5	–	3

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	1,473	840	409	106	59	44
Atlanta, Ga.	154	80	50	12	5	2
Baltimore, Md.	354	206	98	23	10	5
Charlotte, N.C.	82	42	21	11	4	2
Jacksonville, Fla.	94	60	21	4	2	2
Miami, Fla.	148	86	46	7	4	2
Norfolk, Va.	56	28	20	4	2	2
Richmond, Va.	77	37	29	7	3	4
Savannah, Ga.	34	23	8	2	1	5
St. Petersburg, Fla.	78	62	9	2	4	9
Tampa, Fla.	69	41	14	3	10	4
Washington, D.C.	290	151	84	28	14	6
Wilmington, Del.	37	24	9	3	–	1
E.S. CENTRAL	838	520	204	62	23	32
Birmingham, Ala.	150	102	28	14	3	3
Chattanooga, Tenn.	44	30	10	2	1	1
Knoxville, Tenn.	49	37	11	1	–	–
Louisville, Ky.	139	74	31	15	11	2
Memphis, Tenn.	160	105	40	8	1	12
Mobile, Ala.	74	43	21	5	3	5
Montgomery, Ala.	39	27	9	1	1	2
Nashville, Tenn.	183	102	54	16	3	7
W.S. CENTRAL	1,471	831	347	148	55	42
Austin, Tex.	59	39	10	6	1	3
Baton Rouge, La.	31	20	4	5	–	1
Corpus Christi, Tex.	37	25	8	3	–	1
Dallas, Tex.	206	118	42	22	12	4
El Paso, Tex.	50	30	14	2	–	1
Fort Worth, Tex.	77	41	18	6	7	4
Houston, Tex.	467	211	139	64	17	9
Little Rock, Ark.	83	47	21	3	4	7
New Orleans, La.	121	71	27	15	3	–
San Antonio, Tex.	153	98	28	14	7	4
Shreveport, La.	70	50	14	1	2	1
Tulsa, Okla.	117	81	22	7	2	7
MOUNTAIN	545	302	140	55	24	14
Albuquerque, N.Mex. ††	56	29	15	8	2	3
Colo. Springs, Colo.	31	23	3	4	–	2
Denver, Colo.	99	60	22	9	5	7
Las Vegas, Nev.	66	30	22	6	3	–
Ogden, Utah	24	16	3	2	2	1
Phoenix, Ariz.	147	78	39	15	10	–
Pueblo, Colo.	15	6	5	3	–	–
Salt Lake City, Utah	42	24	13	1	1	1
Tucson, Ariz.	65	36	18	7	1	–
PACIFIC	1,766	1,124	386	135	54	59
Berkeley, Calif.	19	15	2	2	–	1
Fresno, Calif.	58	40	10	4	–	7
Glendale, Calif.	31	22	1	3	1	2
Honolulu, Hawaii	65	36	19	5	4	2
Long Beach, Calif.	101	61	31	5	–	2
Los Angeles, Calif.	545	360	108	48	13	21
Oakland, Calif.	65	37	16	6	4	4
Pasadena, Calif.	30	23	4	2	1	2
Portland, Oreg.	144	91	32	10	6	–
Sacramento, Calif.	61	47	8	4	2	3
San Diego, Calif. ††	132	82	31	10	5	1
San Francisco, Calif.	144	91	32	15	3	4
San Jose, Calif.	130	72	38	10	2	–
Seattle, Wash.	162	101	35	6	6	5
Spokane, Wash.	55	30	14	4	5	3
Tacoma, Wash.	24	16	5	1	2	2
TOTAL	12,433	7,570	3,038	931	421	385

*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. Figures are estimates based on average percent of regional totals.

Plague – Continued

TABLE 1. Reported cases of plague, United States, 1980

Case	Age	Sex	Onset	Outcome	County	State
1	51	M	May	Died	Valencia	New Mexico
2	40	F	June	Recovered	San Miguel	New Mexico
3*	8	M	June	Recovered	Socorro	New Mexico
4	55	M	June	Recovered	Monterey	California
5	6	M	June	Died	Washoe	Nevada
6	5	M	June	Recovered	Socorro	New Mexico
7	4	F	July	Died	Sandoval	New Mexico
8	8	M	July	Recovered	Sierra	California
9	12	F	July	Recovered	Washoe	Nevada

*Presumptive case, based on a high convalescent-phase passive-hemagglutination-inhibition titer.

Bubonic plague with possible secondary plague pneumonia was suspected, and the patient was placed in strict isolation. An aspirate from the inguinal lymph node showed rare, bipolar, gram-negative rods, and a fluorescent-antibody stain done 1 hour later was positive for *Yersinia pestis*. After cultures of the blood and throat were obtained (she was not producing sputum), tetracycline, 500 mg orally 4 times a day for 10 days, and streptomycin, 1 g intramuscularly every 12 hours for 5 days, were administered. Over the next several days, the patient improved. Strict isolation was discontinued on the third hospital day. A chest X ray taken on this day was normal. Bubo, but not blood or throat, cultures were positive for *Y. pestis*.

Twenty-one family members who had close contact with the patient on or after June 7, the day respiratory symptoms developed, were contacted within several hours of the diagnosis. All were placed under surveillance and on prophylactic antimicrobials for 7 days. In the hospital, because the patient had not been placed in isolation until approximately 4 hours after entry to the emergency room, 25 persons potentially exposed to respiratory secretions were placed under surveillance; most were given antimicrobials. No secondary cases occurred.

Reported by W Lafferty, MD, D Romig, MD, C Bodelson, RN, Santa Fe, New Mexico; JM Mann, MD, Asst Director, M Burkhart, MPH, Director, Health Sciences Div, New Mexico Health and Environment Dept; M Ford, MPH, Washoe County (Nevada) Health Dept; WM Edwards, MD, MPH, State Epidemiologist, Nevada Dept of Human Resources; J Chin, MD, State Epidemiologist, California Dept of Health Services; Plague Br, Vector-Borne Diseases Div, Bur of Laboratories, Field Services Div, and Bacterial Zoonoses Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Patients with bubonic plague may have minimal or no adenopathy when initially seen, although pain and tenderness at the bubo site are characteristically present. In fact, some patients may never develop clinically detectable adenitis (septicemic plague).

With any patient, once the diagnosis of plague is considered strict isolation should be instituted to minimize potential exposure to contacts while procedures are underway to confirm the diagnosis rapidly and to determine if plague pneumonia is present. Plague pneumonia may result from direct inhalation of organisms or from hematogenous spread to the lung. It is not always possible, with someone with plague and a pulmonary infiltrate, to determine if that infiltrate is caused by plague pneumonia; the management of contacts of these persons must be decided on an individual case basis.

Because of this patient's history of cough and dyspnea in conjunction with an abnormal chest X ray, she was handled as a patient with bubonic plague with secondary pneumonia. In retrospect, however, it is not clear if the infiltrate represented an infectious process. The lack of sputum production and the rapid disappearance of the infiltrate suggest that this patient was not infectious.

Current Trends

Rubella — United States, 1977-1980

For the first 30 weeks of 1980 (ending July 26), 3,093 cases of rubella were reported to CDC, compared to 10,309 cases reported in the same 30-week period in 1979. This 70% decrease in reported rubella activity represents a continuation in the decline noted since 1977 (Figure 2).

The provisional 1979 total of 11,795 cases, an all time low, is 35.4% less than the 1978 total of 18,269 cases which, in turn, represented a 10.4% decline from the 20,395 cases reported in 1977 (Table 2).

Age data were available for 7,653 (64.9%) of the reported 1979 cases. The reported incidence rate in children continues to decline progressively. Approximately 70% of the cases with known age still occur in those 15 years of age and older, with the highest incidence rate occurring in the 15- to 19-year-olds (*1*). However, both the proportion of cases and the risk of disease have continuously declined in this age group for the first

FIGURE 2. Reported rubella, by year, United States, 1966-1980*

*1980 annual incidence rate for rubella was extrapolated from the number of cases for the first 30 weeks of 1980. The 1979 figure is provisional.

Rubella — Continued

time since 1969 (based on limited reporting) and since age data became available from a large number of U.S. reporting areas in 1975. On the other hand, individuals 20 years of age and older accounted for 35.8% of cases with known age in 1979; they accounted for only 21.9% in 1977. More importantly, this age group has experienced virtually no decline in attack rate (2.9 cases per 100,000 population in 1979 compared to 3.1 cases per 100,000 population in 1977) (*1*).

Reported by Immunization Div, Bur of State Services, CDC.

TABLE 2. Percent distribution and incidence rates* of reported rubella cases, by age, United States, 1977-1779†

Age (years)	1977			1978			1979			Percent change in rate 1977-1979
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	
<5	941	7.8	10.4	786	7.6	9.0	758	9.9	7.6	−26.9
5-9	1,012	8.4	10.0	619	6.0	6.5	557	7.3	5.1	−49.0
10-14	1,610	13.3	14.2	1,051	10.2	10.0	923	12.1	7.7	−45.8
15-19	5,867	48.6	47.0	4,543	44.1	38.3	2,673	34.9	19.6	−58.3
20-24	1,950	16.1	16.6	2,540	24.7	22.3	1,718	22.4	13.1	−21.1
25-29	346	2.9	4.0	363	3.5	3.6	491	6.4	4.2	+5.0
≥30	352	2.9	0.6	394	3.8	0.6	533	7.0	0.8	+33.3
Total with known age	12,078	59.2	–	10,296	56.4	–	7,653	64.9	–	–
Unknown age	8,317	40.8	–	7,973	43.6	–	4,142	35.1	–	–
TOTAL	20,395	100.0	9.4	18,269	100.0	8.4	11,795	100.0	5.4	−42.6

*Incidence rate = cases per 100,000 population extrapolated from the age distribution of cases reported by age from 40(in 1977) to 47(in 1979) reporting areas.
†1979 figures are provisional.

Editorial Note: Since the licensure of rubella vaccine in 1969, reported rubella activity has declined overall by approximately 70% (*1*). Initially, there were reports of higher seronegativity rates among clinic- and office-vaccinated individuals than among field-trial vaccinees (*2,3*). However, the continuous decline in the number of rubella cases in children less than 15 years of age—greater than 80% since 1969 (*1*)—suggests that higher-than-expected rates of seronegativity have not generally been the case.

The 15%-20% seronegativity rates and continued rubella incidence among those in the childbearing-age group do not represent an accumulation of individuals who have waning vaccine immunity (*1*), since these cases are primarily occurring in previously unvaccinated individuals. Based on currently available data, those who previously received either the HPV-77:DE-5 or Cendehill vaccines (*4*) need not be routinely revaccinated with the newly licensed RA27/3 rubella vaccine. Nor does a change in immunization policy to a routine 2-dose schedule, as has been suggested (*3,5*), appear to be necessary.

The Morbidity and Mortality Weekly Report, circulation 91,840, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs 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. Send reports to: Center for Disease Control, Attn: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

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Rubella — Continued

To reduce rapidly the incidence of rubella in adolescents and adults—and the consequent risk of congenital rubella syndrome—increased emphasis should be directed toward effectively vaccinating older susceptible individuals, especially women of childbearing age.

In this regard, the Immunization Practices Advisory Committee (ACIP) has recently approved the following statements, which will be included in future revisions of the appropriate ACIP statements.

On rubella:

"Official health agencies should take steps, including development and enforcement of immunization requirements, to assure that all students in schools and children in day-care settings are protected against rubella, unless contraindicated."

On the immunization of adults against measles and rubella:

"Current patterns of measles and rubella occurrence indicate that outbreaks of these diseases continue to be reported in adolescent and young-adult population groups. Increased attention to school immunization requirements should reduce the incidence in those of school age. Further control of these diseases will require increased emphasis on vaccinating susceptible individuals who have left high school. The military services have instituted routine measles and rubella immunization of susceptible recruits. Officials of colleges and other settings where young adults congregate should strongly consider immunization requirements for entry. Health care providers should carefully review immunization status of young adults and provide vaccination to those who are not immune and who do not have contraindications."

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