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Surveillance Summary

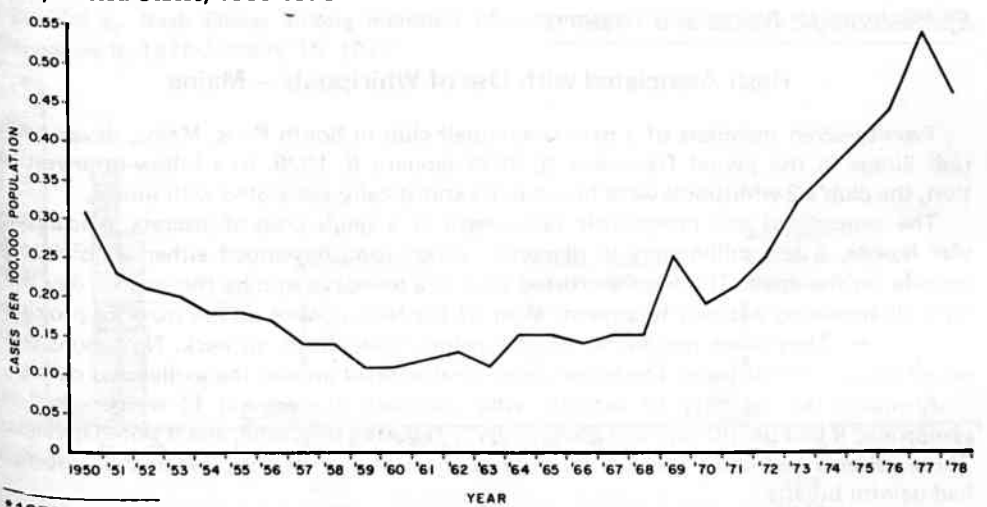
Rocky Mountain Spotted Fever – United States, 1978

A provisional total of 1,011 cases of Rocky Mountain spotted fever (RMSF) were reported to CDC for 1978. This is a 12% decrease from 1977, when 1,153 cases (the highest recorded annual total) were reported. The incidence also dropped, from 0.53 to 0.46 cases/100,000 population, for the first time since 1970 (Figure 1).

The southeastern states accounted for 539 or 53% of all reported cases. North Carolina had the most cases, 203, for an incidence of 3.63 cases/100,000. Tennessee (114 cases) and Virginia (110) had the next highest rates, 2.62 and 2.14/100,000 population, respectively.

Case-report forms have been submitted on 946 cases or 94% of all reported cases. Of these, 537 (57%) have been confirmed by Weil-Felix agglutination, complement fixation, or microimmunofluorescent techniques. While the age distribution of cases (563 or 59.5% in individuals less than 20 years old) and the ratio of males to females (1.63:1) have remained essentially unchanged, the case-fatality rate dropped to 3.7% (35 fatalities out of 946 cases) from 4.9% (42 fatalities out of 856 cases) in 1977. In the group at highest risk, persons over the age of 40, the previous case-fatality rate of 12% also dropped—to 10%. However, the fatality rate for blacks rose to 16.4%, from 15.6% in 1977; for whites, this rate decreased from 4.1% to 3.1%.

FIGURE 1. Rocky Mountain spotted fever, reported cases per 100,000 population, by year, United States, 1950-1978*



*1978 total is provisional.

Rocky Mountain Spotted Fever – Continued

Although cases occurred throughout the year, 95% of patients had onset between the 15th and 36th weeks (early April through early September).

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

Editorial Note: This is the first year since 1970 that the incidence of RMSF has decreased. Nevertheless, the incidence remains considerably higher than that recorded in 1959, when only 199 cases (0.11/100,000 population) were reported.

The data on age, sex, and race derived from case-report forms are similar to those noted in other reports (*1-3*). In 1978, this information was available on a higher percentage of reported cases (94%) than in previous years.

The high case-fatality rate in blacks may reflect differences in health-care availability as well as difficulties in detecting the characteristic early centripetal rash on darker pigmented skin. Fever and headache are the earliest symptoms of the disease and are often accompanied by myalgia, abdominal pain, nausea and vomiting, photophobia, and conjunctivitis. The presence of these may help in making the clinical diagnosis of RMSF, even when the rash is absent or undetected.

Therapy with tetracycline or chloramphenicol is usually begun before the diagnosis is laboratory confirmed because the Weil-Felix agglutinin and complement-fixation tests are rarely positive until 10 to 14 days after onset of illness. Even though the sensitivity and specificity of these tests have been questioned recently (*4*), they remain the only widely available laboratory methods for confirming a suspected case.

References

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Epidemiologic Notes and Reports

Rash Associated with Use of Whirlpools – Maine

Twenty-seven members of a new racquetball club in South Paris, Maine, developed a rash illness in the period December 9, 1978-January 6, 1979. In a follow-up investigation, the club's 2 whirlpools were found to be statistically associated with illness.

The generalized and nonpruritic rash began as a single crop of discrete, maculopapular lesions, a few millimeters in diameter, which soon developed either a vesicle or a pustule on the apex. The lesions crusted over in a few days, and by the seventh day they were disappearing without treatment. Most of the lesions were on the trunk or proximal extremities. They were not found on the palms, soles, head, or neck. No lesions were noted on mucosal surfaces. The lesions were predominant around the axillae and pelvis.

Although the majority of patients—who included 16 men and 11 women—had no symptoms, 8 had painful axillary adenopathy, 7 reported headache, and 5 noted myalgias. Three patients had chills and low grade fever. Five of the patients, 3 men and 2 women, had painful breasts.

The cause of the rash was not initially apparent, but a survey of physicians and school nurses in the area indicated that only members of the racquetball club were affected.

Rash Associated with Whirlpools — Continued

Results of a questionnaire, administered on December 15 to 20 patients and 18 control members from the club, demonstrated a significant association between using the club on December 10, a day of unusually heavy use, and becoming ill during the next 2 days ($p<0.002$). A significant association was found between using the men's or women's whirlpool on December 10 and developing rash ($p<0.03$) within the next 2 days. No association was found between rash and the use of any other facility at the club.

Pseudomonas aeruginosa was isolated from the skin lesions of 2 of the patients on December 12 and December 19, respectively. One of these isolates was sent to CDC for serotyping and found to be serotype 0-11. A culture of water from the men's whirlpool, taken on December 19, grew *P. aeruginosa,* serotype 0-11. Stool, pharyngeal, and vesicle swabs from 6 of the patients did not grow any viruses in tissue culture.

Investigation revealed that the 2 implicated whirlpools had been chlorinated by hand each morning. Peak levels of free residual chlorine, measured on the morning of December 19 by the n,n diethylparaphenylinediamine (DPD) method, were 0.7 parts per million (ppm) in the men's whirlpool and 1.2 ppm in the women's whirlpool.

Once the statistical association between illness and use of the whirlpools had been demonstrated, the whirlpools were closed from December 19 to December 29. During this period the filters were changed, and the whirlpools were drained and acid-washed.

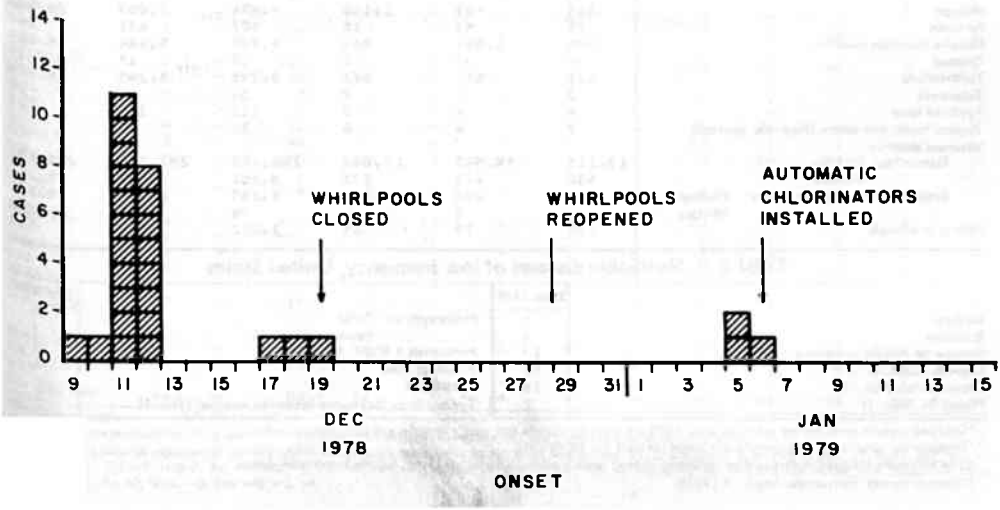
No more cases occurred until after January 1, when the whirlpools were reopened. Three women who had used the women's whirlpool on January 3 developed a rash January 5-6. Automatic chlorinators that maintain a free residual chlorine level of >1 ppm were installed on January 6. No subsequent cases have been reported (Figure 2).

A recent survey of 5 other whirlpools in similar commercial health clubs in Maine found that the water from 3 of them had confluent growth of *P. aeruginosa.* One of the 3 isolates was serotype 0-11. No rash illness was observed at any of these clubs.

Reported by MA Lacombe, MD, HS Sodhi, MD, Norway, Maine; J Datsis, S Zineski, MD, Acting State Epidemiologist, Maine State Dept of Human Services; Special Pathogens Br, Bacterial Diseases Div, Field Services Div, Bur of Epidemiology, CDC.

Editorial Note: Several outbreaks of rash caused by *P. aeruginosa* serotype 0-11 and associated with the use of whirlpool baths have been reported (*1-4*). The rash has been

FIGURE 2. Rash illness among members of racquetball club, by date of onset, Maine, December 9, 1978-January 15, 1979



Rash Associated with Whirlpools – Continued

described as intensely pruritic, progressing from a maculopapular to vesiculopustular eruption within hours to several days after exposure. Other systemic manifestations have been uncommon. In this outbreak the rash was nonpruritic, and nearly one-third of the affected individuals had no other systemic manifestations including painful lympadenopathy.

Pseudomonads are well adapted to survival in water, and whirlpools appear especially prone to contamination because of the difficulty in maintaining adequate chlorination in the presence of high temperatures, turbulent flow, and a large amount of organic debris. Automatic chlorinators may help to maintain adequate levels of free chlorine—≥1.0 ppm free residual chlorine continually (*5*)—in these systems.

References

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

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

DISEASE	16th WEEK ENDING		MEDIAN 1974-1978**	CUMULATIVE, FIRST 16 WEEKS		
	April 21, 1979	April 22, 1978*		April 21, 1979	April 22, 1978*	MEDIAN 1974-1978**
Aseptic meningitis	42	41	36	756	579	570
Brucellosis	–	3	4	20	42	48
Chickenpox	6,345	5,753	5,753	103,302	67,413	67,413
Diphtheria	2	2	6	53	26	75
Encephalitis: Primary (arthropod-borne & unspec.)	10	14	13	142	173	195
Post-infectious	5	5	6	57	47	62
Hepatitis, Viral: Type B	288	309	273	4,174	4,612	4,502
Type A	488	618	681	8,849	8,606	10,965
Type unspecified	166	145	145	3,381	2,455	2,591
Malaria	10	5	5	113	141	98
Measles (rubeola)	448	1,042	1,143	5,192	9,908	9,938
Meningococcal infections: Total	49	68	41	1,029	895	628
Civilian	49	68	39	1,026	886	622
Military	–	–	1	3	9	9
Mumps	313	445	1,186	6,474	7,059	20,520
Pertussis	15	43	16	407	671	367
Rubella (German measles)	486	1,051	869	4,870	5,444	5,803
Tetanus	–	2	2	10	17	15
Tuberculosis	521	622	622	8,395	8,240	8,860
Tularemia	2	2	2	33	21	28
Typhoid fever	4	4	5	112	156	105
Typhus fever, tick-borne (Rky. Mt. spotted)	7	4	4	34	20	20
Venereal diseases:						
Gonorrhea: Civilian	17,215	19,947	17,842	290,195	281,594	283,142
Military	430	473	577	8,461	7,328	8,365
Syphilis, primary & secondary: Civilian	364	408	408	7,245	6,273	6,571
Military	2	5	5	94	92	94
Rabies in animals	150	79	65	1,212	829	804

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1979		CUM. 1979
Anthrax	–	Poliomyelitis: Total	3
Botulism	4	Paralytic (Ariz. 1)	3
Congenital rubella syndrome † (Ill. 1)	17	Psittacosis † (Calif. 1)	38
Leprosy (Calif. 1)	51	Rabies in man	1
Leptospirosis (Fla. 1)	18	Trichinosis	26
Plague (N. Mex. 1)	2	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	5

*Delayed reports received for calendar year 1978 are used to update last year's weekly and cumulative totals.

**Medians for gonorrhea and syphilis are based on data for 1976-1978.

†The following delayed report will be reflected in next week's cumulative total: Cong. rubella syndrome: Minn. –1

†Delayed report: Psittacosis: Iowa –1 (1978)

TABLE III. Cases of specified notifiable diseases, United States, weeks ending April 21, 1979, and April 22, 1978 (16th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1979	1979	1979	1979	CUM. 1979	1979	1978*	1979	1979	1979	1979	1979	CUM. 1979
UNITED STATES	42	–	6,345	2	53	10	14	5	288	488	166	10	113
NEW ENGLAND	3	–	925	–	–	1	–	–	8	13	7	1	6
Maine†	2	–	24	–	–	–	–	–	–	–	–	–	–
N.H.†	–	–	27	–	–	–	–	–	–	2	–	–	–
Vt.	–	–	16	–	–	–	–	–	–	1	–	–	–
Mass.	–	–	276	–	–	–	–	–	2	1	7	1	2
R.I.	1	–	106	–	–	–	–	–	1	5	–	–	3
Conn.	–	–	476	–	–	1	–	–	5	4	–	–	1
MID. ATLANTIC	1	–	431	–	–	2	3	–	74	39	17	2	17
Upstate N.Y.	–	–	180	–	–	–	–	–	15	6	5	–	2
N.Y. City	1	–	163	–	–	1	2	–	18	6	5	2	12
N.J.	–	–	NN	–	–	–	–	–	22	10	7	–	1
Pa.†	–	–	88	–	–	1	1	–	19	17	–	–	2
E.N. CENTRAL	1	–	2,788	–	–	–	1	–	29	56	14	–	5
Ohio	–	–	182	–	–	–	–	–	1	1	–	–	2
Ind.†	–	–	217	–	–	–	1	–	1	5	6	–	–
Ill.	–	–	440	–	–	–	–	–	10	26	3	–	1
Mich.	1	–	1,350	–	–	–	–	–	15	23	5	–	2
Wis.†	–	–	599	–	–	–	–	–	2	1	–	–	–
W.N. CENTRAL	–	–	917	–	–	1	1	1	15	30	6	–	3
Minn.	–	–	8	–	–	–	–	1	4	7	–	–	2
Iowa	–	–	255	–	–	1	1	–	3	3	2	–	–
Mo.	–	–	137	–	–	–	–	–	6	16	3	–	1
N. Dak.†	–	–	12	–	–	–	–	–	–	–	–	–	–
S. Dak.†	–	–	35	–	–	–	–	–	–	2	–	–	–
Nebr.	–	–	54	–	–	–	–	–	–	–	–	–	–
Kans.	–	–	416	–	–	–	–	–	2	2	1	–	–
S. ATLANTIC	5	–	332	–	–	2	–	2	32	51	22	1	27
Del.	–	–	9	–	–	–	–	–	–	–	–	–	1
Md.	2	–	38	–	–	–	–	–	2	3	–	–	3
D.C.	–	–	4	–	–	–	–	–	1	–	–	–	4
Va.†	2	–	24	–	–	2	–	2	7	5	3	1	7
W. Va.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	1
N.C.	–	–	NN	–	–	–	–	–	4	6	1	–	1
S.C.	–	–	5	–	–	–	–	–	4	3	4	–	1
Ga.	–	–	–	–	–	–	–	–	–	–	–	–	2
Fla.	1	–	252	–	–	–	–	–	14	34	14	–	7
E.S. CENTRAL	4	–	98	–	–	–	1	–	26	31	6	–	–
Ky.	–	–	60	–	–	–	1	–	11	9	–	–	–
Tenn.	1	–	NN	–	–	–	–	–	10	13	2	–	–
Ala.	2	–	24	–	–	–	–	–	4	1	4	–	–
Miss.	1	–	14	–	–	–	–	–	1	8	–	–	–
W.S. CENTRAL	9	–	309	–	–	–	1	1	10	91	24	1	10
Ark.	–	–	5	–	–	–	–	–	2	3	8	–	1
La.	–	–	NN	–	–	–	–	–	–	–	–	1	2
Okla.†	–	–	–	–	–	–	1	1	1	9	3	–	–
Tex.†	9	–	304	–	–	–	–	–	7	79	13	–	7
MOUNTAIN	5	–	111	–	1	–	–	–	21	78	42	1	3
Mont.	–	–	20	–	–	–	–	–	–	–	–	–	–
Idaho	–	–	3	–	–	–	–	–	–	2	–	–	–
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	1
Colo.	4	–	62	–	–	–	–	–	4	12	9	1	2
N. Mex.†	1	–	20	–	–	–	–	–	13	12	1	–	–
Ariz.	–	–	NN	–	1	–	–	–	2	50	27	–	–
Utah	–	–	5	–	–	–	–	–	–	–	2	–	–
Nev.	–	–	1	–	–	–	–	–	2	2	3	–	–
PACIFIC	14	–	434	2	52	4	7	1	73	99	28	4	42
Wash.	1	–	418	2	51	–	–	–	8	18	6	–	2
Oreg.	1	–	2	–	–	–	–	–	2	14	–	–	2
Calif.†	9	–	–	–	1	2	6	1	61	66	22	4	37
Alaska†	–	–	–	–	–	2	1	–	–	–	–	–	–
Hawaii	3	–	14	–	–	–	–	–	2	1	–	–	1
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
P.R.	–	–	24	–	–	–	–	–	–	2	6	–	–
V.I.†	–	–	–	–	–	–	–	–	–	–	–	–	–
Pac. Trust Terr.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–

NN: Not notifiable. NA: Not available.

*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Asep. Meng.: Ind. +1; Chickenpox: N.H. +19, N.Mex. +1, Calif. +67, V.I. +2; Enceph., prim.: Va. −1; Hep B: Pa. +7, Wis. +1, Va. −1, Tex. −1, N.Mex. +1, Alaska: −1; Hep. A: Maine −2, Pa. +16, Wis. −1, N.Dak. −1, S.Dak. −1, Okla. −4; Hep. unsp.: Pa. +2, Okla. −3, Tex. −6, V.I. +4.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending April 21, 1979, and April 22, 1978 (16th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1979	CUM. 1979	CUM. 1978*	1979	CUM. 1979	CUM. 1978*	1979	CUM. 1979	1979	1979	CUM. 1979	CUM. 1979
UNITED STATES	448	5,192	9,908	49	1,029	895	313	6,474	15	486	4,870	10
NEW ENGLAND	24	157	1,033	4	38	53	15	267	1	96	712	–
Maine †	–	6	652	–	1	3	1	101	–	–	46	–
N.H. †	1	4	15	–	5	5	–	2	–	7	56	–
Vt.	23	47	12	–	2	2	–	4	–	49	268	–
Mass.	–	–	110	2	9	21	–	23	–	19	217	–
R.I.	–	100	4	–	1	10	–	13	1	4	18	–
Conn.	–	–	240	2	20	12	14	124	–	17	107	–
MID. ATLANTIC	70	531	770	10	148	124	35	573	–	122	738	2
Upstate N.Y.	25	309	525	3	51	42	4	72	–	90	313	1
N.Y. City	45	167	96	5	43	28	5	59	–	22	91	1
N.J.	–	24	10	1	36	25	23	296	–	–	182	–
Pa.	–	11	139	1	18	29	3	146	–	10	152	–
E.N. CENTRAL	149	1,192	3,695	4	93	90	119	2,643	4	65	1,116	1
Ohio	9	13	203	–	28	20	6	891	–	–	24	–
Ind.	6	94	61	3	24	15	10	157	–	29	365	–
Ill.	103	467	443	–	3	16	15	401	–	3	77	–
Mich.	19	389	2,327	1	29	31	66	568	4	26	536	1
Wis.	12	229	661	–	9	8	22	626	–	7	114	–
W.N. CENTRAL	44	560	142	–	35	31	29	442	–	7	201	–
Minn.	19	257	14	–	6	4	–	5	–	4	21	–
Iowa	2	7	8	–	5	6	12	159	–	–	42	–
Mo.	22	279	6	–	17	14	1	120	–	1	19	–
N. Dak.	–	6	75	–	–	–	–	1	–	–	8	–
S. Dak.	–	1	–	–	2	2	–	3	–	–	–	–
Nebr. †	–	–	3	–	–	–	–	4	–	–	59	–
Kans.	1	10	36	–	5	5	16	150	–	2	52	–
S. ATLANTIC	38	689	2,505	8	236	236	4	229	–	39	446	2
Del.	–	–	5	–	2	–	–	8	–	–	1	–
Md.	–	5	1	1	19	11	1	30	–	3	15	–
D.C.	–	–	47	1	1	1	–	1	–	–	–	–
Va.	5	72	1,707	1	38	32	3	53	–	6	47	–
W. Va.	NA	38	436	–	3	5	NA	55	NA	NA	64	–
N.C. †	3	94	49	3	40	48	–	33	–	17	145	2
S.C.	4	38	148	2	35	17	–	2	–	1	42	–
Ga.	–	90	5	–	40	30	–	3	–	–	2	–
Fla.	26	352	107	–	58	92	–	44	–	12	130	–
E.S. CENTRAL	5	73	690	5	85	73	37	631	1	12	143	2
Ky.	–	15	58	–	13	14	33	542	–	2	41	–
Tenn.	3	15	497	2	27	21	3	59	–	9	67	–
Ala.	1	35	25	1	21	21	–	9	1	1	18	2
Miss.	1	8	110	2	24	17	1	21	–	–	17	–
W.S. CENTRAL	37	565	594	10	194	129	50	1,122	3	7	127	3
Ark.	–	7	9	1	15	13	6	574	1	–	–	2
La.	–	143	243	3	86	43	7	30	–	1	16	–
Okla.	–	3	8	–	16	11	–	–	1	1	17	–
Tex.†	37	412	334	6	77	62	37	518	1	5	94	1
MOUNTAIN	11	120	107	3	46	16	3	170	1	34	207	–
Mont.	2	45	76	–	2	1	–	5	–	4	35	–
Idaho	–	2	1	1	4	1	–	3	–	25	124	–
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–
Colo.	–	8	12	1	2	2	–	51	–	–	17	–
N. Mex.†	4	24	–	–	2	2	3	7	1	–	–	–
Ariz.	5	26	8	1	29	5	–	20	–	5	26	–
Utah	–	13	4	–	3	4	–	76	–	–	5	–
Nev.	–	2	6	–	4	1	–	8	–	–	–	–
PACIFIC	70	1,305	372	5	154	143	21	397	5	104	1,180	–
Wash. †	36	584	37	1	23	22	7	144	–	10	108	–
Oreg.	–	52	106	–	9	4	1	36	–	4	46	–
Calif.	32	600	228	3	114	111	6	166	2	89	1,018	–
Alaska	1	15	–	1	3	5	–	5	3	–	1	–
Hawaii	1	54	1	–	5	1	7	46	–	1	7	–
Guam	NA	–	2	–	–	–	NA	–	NA	NA	3	–
P.R.	7	147	83	–	–	1	10	295	–	1	18	3
V.I. †	–	1	6	–	–	–	–	1	–	–	–	–
Pac. Trust Terr.	NA	5	315	–	1	2	NA	11	NA	NA	–	–

NA: Not available.

*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Measles: Maine –2, Wash. –4, V.I. +1; Men. inf.: N.C. –1, Tex. –1, Wash. +1, V.I. +1; Mumps: V.I. +1; Pertussis: Tex. –1; Rubella: Maine +2, N.H. +5, Nebr. +3, N.Mex. +1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending April 21, 1979, and April 22, 1978 (16th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1979	CUM. 1979	CUM. 1979	1979	CUM. 1979	1979	CUM. 1979	1979	CUM. 1979	CUM. 1978*	1979	CUM. 1979	CUM. 1978*	CUM. 1979
UNITED STATES	521	6,395	33	4	112	7	34	17,215	290,195	281,594	364	7,245	6,273	1,212
NEW ENGLAND	12	241	1	–	8	–	–	376	7,760	7,039	7	128	195	15
Maine	1	17	–	–	1	–	–	40	515	538	1	2	3	14
N.H.	–	4	–	–	–	–	–	20	261	334	–	2	1	1
Vt.	–	6	–	–	–	–	–	13	143	176	–	–	–	–
Mass.†	2	150	1	–	4	–	–	167	3,201	3,078	2	82	135	–
R.I.	5	18	–	–	1	–	–	29	632	492	1	4	6	–
Conn.	4	46	–	–	2	–	–	107	3,008	2,421	3	38	54	–
MID. ATLANTIC	70	1,377	1	1	17	–	5	1,751	32,038	31,211	61	1,186	864	7
Upstate N.Y.†	8	245	1	–	3	–	4	256	5,855	4,851	6	109	57	6
N.Y. City	42	523	–	1	7	–	1	923	12,137	12,341	34	784	612	–
N.J.	12	230	–	–	5	–	–	185	5,817	5,965	11	161	95	1
Pa.	8	379	–	–	2	–	–	387	8,229	8,054	10	132	100	–
E.N. CENTRAL	66	1,161	–	–	9	–	2	3,139	45,239	39,894	47	946	602	103
Ohio	7	217	–	–	1	–	2	653	12,469	10,665	12	201	134	6
Ind.	7	162	–	–	–	–	–	175	3,628	4,436	5	54	38	33
Ill.	29	421	–	–	4	–	–	1,417	14,642	11,769	25	547	355	48
Mich.†	16	306	–	–	4	–	–	636	10,450	9,363	5	111	55	–
Wis.	7	55	–	–	–	–	–	258	4,050	3,659	–	33	20	16
W.N. CENTRAL	19	277	9	–	3	–	1	792	13,937	13,797	7	107	149	234
Minn.	5	32	–	–	2	–	–	153	2,435	2,495	2	31	69	53
Iowa	–	28	–	–	–	–	–	73	1,805	1,657	1	14	13	55
Mo.	7	152	7	–	1	–	–	362	5,883	5,476	4	45	31	71
N. Dak.	–	10	–	–	–	–	–	17	234	297	–	–	2	11
S. Dak.†	5	18	1	–	–	–	–	36	473	520	–	–	1	13
Nebr.	–	3	1	–	–	–	–	64	934	1,041	–	1	4	–
Kans.†	2	34	–	–	–	–	1	87	2,173	2,311	–	16	29	31
S. ATLANTIC	108	1,923	2	3	17	1	11	3,281	67,725	68,268	78	1,761	1,689	149
Del.	4	20	–	–	–	–	–	53	1,064	1,059	–	11	3	–
Md.	13	268	–	1	6	–	4	483	8,399	8,996	6	126	131	–
D.C.	8	94	–	–	1	–	–	227	4,313	4,483	3	130	131	–
Va.	12	235	–	1	2	1	1	363	6,653	6,236	7	178	154	3
W. Va.	NA	63	–	NA	1	NA	–	NA	943	1,068	NA	25	5	–
N.C.	11	310	–	–	–	–	4	556	10,534	9,561	5	159	144	–
S.C.	4	86	1	1	2	–	1	326	6,035	6,397	5	92	79	51
Ga.	25	280	1	–	–	–	1	890	13,425	12,909	37	488	410	93
Fla.†	31	567	–	–	5	–	–	383	16,359	17,559	15	552	632	2
E.S. CENTRAL	61	758	5	–	6	1	7	1,123	24,472	23,980	34	494	300	63
Ky.	14	176	2	–	2	–	–	111	3,238	2,726	1	50	36	28
Tenn.	16	217	3	–	1	1	3	282	8,424	8,791	14	199	111	16
Ala.	16	168	–	–	3	–	4	356	7,389	7,188	6	102	44	19
Miss.	15	197	–	–	–	–	–	374	5,421	5,275	13	143	109	–
W.S. CENTRAL	71	1,011	5	–	7	5	7	2,590	38,475	39,531	76	1,265	942	517
Ark.	3	67	3	–	–	5	6	168	3,019	3,012	1	39	32	123
La.	8	244	1	–	–	–	–	507	6,729	6,455	1	269	175	3
Okla.	10	125	–	–	–	–	–	258	3,455	3,548	3	25	34	77
Tex.	50	575	1	–	7	–	1	1,657	25,272	26,516	71	932	701	314
MOUNTAIN	16	256	7	–	6	–	1	689	11,149	10,353	1	105	122	14
Mont.	–	10	1	–	–	–	–	30	542	661	–	6	6	–
Idaho	–	4	–	–	1	–	–	18	491	358	–	7	1	–
Wyo.	–	3	–	–	–	–	–	9	282	246	–	3	3	–
Colo.	4	37	1	–	1	–	–	216	3,090	2,842	–	34	39	–
N. Mex.	3	44	1	–	1	–	–	80	1,413	1,437	1	17	35	10
Ariz.	6	126	–	–	2	–	–	186	3,132	2,581	–	19	24	4
Utah	–	6	4	–	–	–	–	56	565	623	–	2	3	–
Nev.	3	26	–	–	1	–	1	94	1,634	1,605	–	17	11	–
PACIFIC	98	1,391	3	–	39	–	–	3,474	49,400	47,521	53	1,253	1,406	110
Wash.	8	53	2	–	1	–	–	193	4,467	3,432	NA	64	57	–
Oreg.	1	67	–	–	–	–	–	250	3,186	3,280	5	64	46	–
Calif.	86	1,155	1	–	31	–	–	2,872	39,312	38,357	42	1,090	1,283	108
Alaska	–	24	–	–	–	–	–	103	1,628	1,511	2	7	5	2
Hawaii	3	92	–	–	7	–	–	56	807	941	4	28	15	–
Guam	NA	14	–	NA	–	NA	–	NA	20	38	NA	–	–	–
P.R.	1	97	–	1	2	–	–	14	566	804	2	159	135	7
V.I.	–	2	–	–	–	–	–	5	51	63	–	–	5	–
Pac. Trust Terr.	NA	8	–	NA	–	NA	–	NA	47	153	NA	–	–	–

NA: Not available.

*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: TB: Mich. –1, Kans. –1; T. fever: Mass. +1; GC: S.Dak. –1, Fla. +1292; Syphilis: Ups. N.Y. –13, Fla. +49; An rabies: Ups. N.Y. +1.

TABLE IV. Deaths in 121 U.S. cities,* week ending April 21, 1979 (16th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	663	471	148	20	12	37
Boston, Mass.	175	119	38	7	4	9
Bridgeport, Conn.	36	24	9	–	1	1
Cambridge, Mass.	22	19	2	1	–	2
Fall River, Mass.	23	17	6	–	–	–
Hartford, Conn.	57	40	13	3	1	1
Lowell, Mass.	33	26	3	1	1	3
Lynn, Mass.	21	15	6	–	–	1
New Bedford, Mass.	30	22	8	–	–	2
New Haven, Conn.	54	35	13	3	2	1
Providence, R.I.	66	48	16	–	2	6
Somerville, Mass.	11	9	2	–	–	–
Springfield, Mass.	42	32	9	1	–	4
Waterbury, Conn.	40	27	8	4	1	5
Worcester, Mass.	53	38	15	–	–	2
MID. ATLANTIC	2,068	1,351	503	119	58	90
Albany, N.Y.	59	42	12	2	2	3
Allentown, Pa.	22	17	5	–	–	–
Buffalo, N.Y.	88	63	21	3	–	5
Camden, N.J.	31	16	11	1	3	–
Elizabeth, N.J.	24	18	5	–	1	–
Erie, Pa.†	30	18	9	2	1	2
Jersey City, N.J.	40	21	15	1	2	1
Newark, N.J.	70	26	24	7	8	8
N.Y. City, N.Y.	1,380	857	339	90	35	43
Paterson, N.J.	28	20	4	2	2	1
Philadelphia, Pa.†	286	168	79	27	6	12
Pittsburgh, Pa.†	74	48	20	3	1	2
Reading, Pa.	36	29	6	1	–	6
Rochester, N.Y.	114	81	21	4	2	11
Schenectady, N.Y.	30	21	7	1	–	1
Scranton, Pa.†	30	23	6	1	–	2
Syracuse, N.Y.	71	43	19	4	2	4
Trenton, N.J.	24	15	5	3	1	2
Utica, N.Y.	24	17	7	–	–	1
Yonkers, N.Y.	27	25	2	–	–	4
E.N. CENTRAL	2,271	1,368	593	141	86	59
Akron, Ohio	65	39	16	5	5	–
Canton, Ohio	55	35	11	5	3	–
Chicago, Ill.	516	289	146	39	15	9
Cincinnati, Ohio	109	63	28	9	4	2
Cleveland, Ohio	179	106	52	7	8	4
Columbus, Ohio	136	74	45	8	5	6
Dayton, Ohio	107	68	28	3	2	5
Detroit, Mich.	279	152	75	20	17	5
Evansville, Ind.	39	33	4	1	–	4
Fort Wayne, Ind.	58	35	18	2	2	5
Gary, Ind.	22	11	7	3	–	–
Grand Rapids, Mich.	58	40	12	2	3	5
Indianapolis, Ind.	138	86	32	6	9	3
Madison, Wis.	27	15	9	2	1	–
Milwaukee, Wis.	148	98	36	8	3	–
Peoria, Ill.	51	36	6	6	2	5
Rockford, Ill.	49	37	6	5	–	3
South Bend, Ind.	58	38	13	2	1	2
Toledo, Ohio	105	60	34	6	4	1
Youngstown, Ohio	72	53	15	2	2	–
W.N. CENTRAL	777	501	163	37	51	35
Des Moines, Iowa	52	42	5	3	1	2
Duluth, Minn.	40	31	7	1	–	8
Kansas City, Kans.	28	21	4	1	2	2
Kansas City, Mo.	142	95	30	6	5	7
Lincoln, Nebr.	23	14	7	–	1	5
Minneapolis, Minn.	133	74	36	6	9	1
Omaha, Nebr.	82	53	21	4	2	2
St. Louis, Mo.	165	94	29	9	28	2
St. Paul, Minn.	65	45	14	4	1	5
Wichita, Kans.	47	32	10	3	2	1

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	953	555	266	61	38	46
Atlanta, Ga.	113	63	33	8	5	2
Baltimore, Md.	76	43	20	5	5	2
Charlotte, N.C.	54	25	17	6	3	5
Jacksonville, Fla.	77	43	22	5	3	7
Miami, Fla.	111	61	32	7	6	7
Norfolk, Va.	45	22	19	1	1	3
Richmond, Va.	64	35	19	5	4	7
Savannah, Ga.	40	23	11	1	2	2
St. Petersburg, Fla.	90	78	11	1	–	2
Tampa, Fla.	82	43	25	6	3	6
Washington, D.C.	162	95	45	13	6	2
Wilmington, Del.	39	24	12	3	–	1
E.S. CENTRAL	769	450	228	47	14	28
Birmingham, Ala.	108	59	29	9	6	–
Chattanooga, Tenn.	78	45	26	4	–	8
Knoxville, Tenn.	56	38	11	5	–	1
Louisville, Ky.	97	66	23	3	4	8
Memphis, Tenn.	220	133	64	14	1	2
Mobile, Ala.	56	29	20	3	1	–
Montgomery, Ala.	43	30	12	–	–	4
Nashville, Tenn.	111	50	43	9	2	5
W.S. CENTRAL	1,282	683	356	110	55	39
Austin, Tex.	52	32	14	3	–	3
Baton Rouge, La.	34	13	16	3	–	1
Corpus Christi, Tex.	35	21	12	1	–	–
Dallas, Tex.	180	92	47	23	7	3
El Paso, Tex.	48	26	14	4	2	4
Fort Worth, Tex.	67	42	13	6	4	4
Houston, Tex.	342	154	102	40	19	4
Little Rock, Ark.	54	26	17	5	3	4
New Orleans, La.	150	74	51	4	6	–
San Antonio, Tex.	159	100	31	10	11	5
Shreveport, La.	74	41	23	4	2	4
Tulsa, Okla.	87	62	16	7	1	7
MOUNTAIN	597	348	154	47	19	11
Albuquerque, N.Mex.	64	32	15	12	3	2
Colo. Springs, Colo.	34	17	11	3	–	2
Denver, Colo.	102	63	26	8	2	1
Las Vegas, Nev.	74	29	30	5	2	2
Ogden, Utah	21	11	6	3	1	1
Phoenix, Ariz.	133	83	30	7	6	–
Pueblo, Colo.	24	16	3	2	–	1
Salt Lake City, Utah	50	31	10	3	4	–
Tucson, Ariz.	95	66	23	4	1	2
PACIFIC	1,971	1,216	438	161	46	71
Berkeley, Calif.	15	7	6	1	1	–
Fresno, Calif.	83	50	15	3	2	4
Glendale, Calif.	31	20	6	3	–	1
Honolulu, Hawaii	65	36	17	6	–	1
Long Beach, Calif.	100	63	23	5	3	5
Los Angeles, Calif.	700	395	157	90	12	25
Oakland, Calif.	75	54	15	5	1	3
Pasadena, Calif.	35	25	7	2	1	3
Portland, Oreg.	126	83	29	4	7	1
Sacramento, Calif.	73	50	16	3	3	4
San Diego, Calif.	97	66	19	4	5	1
San Francisco, Calif.	167	109	39	10	5	4
San Jose, Calif.	150	93	36	13	3	7
Seattle, Wash.	153	97	33	7	2	3
Spokane, Wash.	70	45	16	3	1	7
Tacoma, Wash.	31	23	4	2	–	2
TOTAL	11,351	6,943	2,849	743	379	416
Expected Number	10,675	6,662	2,684	645	397	398

*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, there will now be 117 cities involved in the generation of the expected values used to monitor pneumonia and influenza activity in the United States. Data from these 4 cities will appear in the tables but will not be included in the totals for the United States and the Middle Atlantic Region.

Endotoxic Reactions Associated with the Reuse of Cardiac Catheters — Michigan

Two outbreaks of endotoxic reactions (fever, chills, and occasionally hypotension) have recently been reported in Michigan hospitals; at least 42 patients undergoing cardiac catheterization were involved. As in a similar outbreak in Massachusetts (*1*), reusable intravascular catheters were implicated.

In 1 hospital, 32 patients in 1977 experienced pyrogenic reactions during catheterization. The catheters, although microbiologically sterile when used, were found, upon investigation, to be contaminated with endotoxin. Before the outbreak, cardiac catheters had been washed, rinsed with distilled water, wrapped, and, within 4 days, sterilized with ethylene dioxide.

In April 1977, during an investigation of the outbreak, a washed, wrapped cardiac catheter, stored at 28 C for 72 hours, was opened, flushed with sterile, distilled water, and cultured. An aliquot of the water, after flushing, contained 700,000 colony-forming units (CFU)/ml of *Acinetobacter calcoaceticus* var. *anitratus.* The distilled water had been obtained from a holding tank in the central supply room, from which samples yielded 3,500 CFU/ml *A. calcoaceticus* of the same variety and biotype.

When the sterilized catheters were cultured, they were found to be negative for bacteria, by Limulus Amebocyte Lysate (LAL) assay. The eluates induced fever and hypotension when infused intravenously into rabbits.

Following this investigation, reusable cardiac catheters were immediately washed, rinsed, and sterilized in a single, daily operation. No subsequent endotoxic reactions have occurred.

In the second outbreak, pyrogenic reactions had been observed periodically during cardiac catheterization since the unit opened in 1974. But in July and August 1978, 10 of 135 patients experienced a reaction. Investigation then revealed that a combination of disposable and used, nondisposable catheters was employed for catheterizing most patients. *Pseudomonas* species, *Escherichia coli,* and *Enterobacter* species were cultured from the soap in which the catheters soaked after use. Despite sterilization with ethylene oxide, catheters yielded endotoxin when flushed with pyrogen-free saline. As in the previous investigation, the eluate produced pyrogenic reactions in rabbits.

For 2 months after the outbreak, this hospital employed the additional step of ultrasonically cleaning catheters after they had been used. Nevertheless, at least 2 more reactions occurred. Of 17 nondisposable catheters tested, 5 revealed endotoxin by LAL testing. Since November, only disposable catheters have been used, and no reactions have occurred among more than 380 patients.

Reported by WJ Brown, PhD, M Fowler, MD, C Friedman, MPH, S Ganguly, MD, B Gatmaitan, MD, AM Lerner, MD, MP Reyes, MD, Hutzel Hospital, Detroit; LR Davis, LF Herrera, MD, J Kloepfer, MD, I Leader, P Tusnell, Ingham Medical Center, Lansing; DO Huggett, PhD, NS Hayner, MD, State Epidemiologist, JA Weber, MPH, Michigan State Department of Public Health; Hospital Infections Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Reference

1. MMWR 28:25, 1979

Penicillinase-Producing *Neisseria gonorrhoeae* — Alaska

Alaska's second and third cases of penicillinase-producing *Neisseria gonorrhoeae* (PPNG) were identified in December 1978.

On December 14, a 60-year-old man presented to an Anchorage Health Department venereal disease clinic, giving a history of a recent urethral discharge. Examination re-

Neisseria gonorrhoeae — Continued

vealed no urethral discharge so a urethral culture for gonorrhea was obtained, and he was asked to return to the clinic for the results. When he was examined on December 17, a urethral discharge was evident. At this time the patient stated he had recently traveled in the Philippines. Gram strain of the urethral discharge was positive. He was treated with 4.8 million units aqueous procaine penicillin G (APPG) intramuscularly (IM) and 1 g of probenecid orally. He named no contacts in an interview.

On December 22, still complaining of a slight urethral discharge, the patient returned to the clinic for a test-of-cure (TOC) culture. On December 26, he returned to the clinic, saying the discharge was worse. The results of penicillin-sensitivity tests were still pending on the TOC isolate of December 22. Because he had recently been in the Philippines and his infection had not responded to penicillin therapy, PPNG infection was suspected. The patient was treated with 2 g of spectinomycin, IM.

On January 2, the state laboratory confirmed that the isolate was PPNG. The patient returned to the clinic for a TOC culture, as scheduled, and he was reinterviewed. At this time, the patient indicated that he had had 2 sexual contacts: 1 on December 5 in the Philippines, the other on December 15—1 day after the urethral discharge had developed—in Anchorage.

Investigation revealed that the patient's Anchorage contact had already presented to the outpatient department of the Alaska Native Medical Center (ANMC) on December 29 with a copious vaginal and rectal discharge. She was cultured and received 4.8 million units IM of APPG plus 1 g of probenecid. She returned to the ANMC on January 2. When it was learned that she was a contact of a patient with PPNG, she was treated with spectinomycin and interviewed for contacts. Both cultures taken from her on December 29 were subsequently found positive and confirmed as PPNG.

This woman's 1 contact was her estranged husband, who lived in the remote Iliamna Lake region. He was contacted and found to be asymptomatic. However, a culture specimen was taken from his anterior urethra, and he and his 2 contacts were treated epidemiologically with spectinomycin. There was no incubator in the area, and heavy snows delayed the investigator's return to Anchorage for 3 days. No gonococci were isolated by the state laboratory. However, because of these conditions, the culture was judged unsatisfactory.

Reported by DLO Bourne, TR Kelly, TL Woodard, MD, Acting State Epidemiologist, Alaska State Dept of Health and Social Services; Program Services Br, Veneral Disease Control Div, Bur of State Services, CDC.

Editorial Note: State and local health departments reported 220 cases of PPNG during 1978 and 554 total cases during the 3-year period ending February 1979. Many cases have been identified through the nationwide PPNG surveillance network, established after the initial case was reported in March 1976. High priority contact-tracing has uncovered numerous other PPNG cases and has helped contain several potential outbreaks. The prevention of PPNG cases requires that health providers strongly encourage all gonorrhea patients to have a TOC culture 3 to 5 days following therapy. PPNG infection should be suspected in patients who are still infected or who have recently traveled in the Far East. Patients with PPNG infections as well as their sexual partners should receive 2 g of spectinomycin IM; but the drugs of choice for uncomplicated gonorrhea remain APPG, ampicillin, and amoxicillin, all with 1 g of probenecid or the oral regimen of tetracycline hydrochloride (*1*).

Reference

1. MMWR 28:13-16, 21, 1979

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