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Epidemiologic Notes and Reports

Plague — South Carolina

On August 5, 1983, plague was diagnosed in a 13-year-old girl in South Carolina. She became ill while en route to Maryland from her previous residence in Santa Fe, New Mexico, and subsequently died. The area in which she had lived had been recognized as a locality where sylvatic plague was enzootic.

On July 25, the girl, a horsewoman who spent considerable time outdoors, handled and then released a wild chipmunk. On July 27, she flew to Atlanta, Georgia, and spent the night with friends; the following day she was driven to Seneca, South Carolina. That evening, she complained of a sore throat and tenderness in her right groin and reportedly had a temperature of 40.0 C (104 F). On July 29, she saw a physician, who noted an oral temperature of 38.3 C (101 F), pharyngeal erythema, tender cervical lymph nodes, and a 1-x-2-centimeter tender right inguinal lymph node. Laboratory tests, including complete blood count, urinalysis, and throat culture, and tests for mononucleosis, were done, and oral penicillin was prescribed. Three days later she was seen again, still febrile and with expanding right inguinal nodes. Her white blood cell count was 20,500, and a chest x-ray was normal. Because of her history of residence in a plague-enzootic state, a diagnosis of plague was considered. She was hospitalized and given parenteral therapy, including streptomycin. By the following morning, she was tachypneic, with productive bloody sputum, and appeared moribund. She was transferred to a large, regional medical center where, despite intensive supportive care and therapy with intravenous chloramphenicol, she developed overwhelming sepsis and died on August 2. A chest radiograph taken before death revealed extensive pulmonary infiltrates.

Ante-mortem aspiration of the right inguinal lymph node demonstrated gram-negative bipolar staining bacilli on Giemsa stain. Both this aspirate and multiple cultures of blood yielded *Yersinia pestis*. In addition, fluorescent antibody (FA) stains for *Y. pestis* were positive for specimens consisting of blood smears, culture material, and pulmonary secretions.

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Editorial Note: This is the fifth documented case of plague east of the hundredth meridian (south central Texas to north central North Dakota), excluding laboratory accidents, since 1920. All five patients were exposed in enzootic areas (four in the western United States, one in Vietnam). Considering this patient's outdoor activities and area of residence, exposure possibilities are numerous; her exact exposure will probably never be known, since the chipmunk was not captured. That she was able to handle the animal suggests it was not healthy.

Because the patient had no evidence of pneumonia before hospitalization, no chemo-

Plague – Continued

prophylaxis was recommended for the friends with whom she stayed in Georgia; there were no secondary cases. Based on the clinical picture and the positive FA results from sputum, it appears that pneumonic plague and the potential for human-to-human transmission existed terminally. Local health-care providers had placed her in complete isolation before this development. Hospital staff directly in contact with her at this point were placed on prophylactic tetracycline and followed up for evidence of illness. No secondary cases appeared during the expected incubation period.

Primary pneumonic plague in the United States has been described as rare, with only three cases between 1926 and 1977—all in laboratory workers (*1*). However, since 1975, five persons have developed primary pneumonic plague, presumably from exposure to household pets with secondary plague pneumonia (*2,3*). Recent investigations suggest that plague pneumonia (i.e., secondary to bubonic plague) is more common (*4*). Thus far in 1983, 24 cases of human plague have originated in New Mexico, and three (13%) of them have had pneumonic involvement (*5*). No transmission to contacts of patients with pneumonic plague has been documented in the United States since 1925.

Delay in diagnosing and treating plague increases the potential for pulmonary involvement and person-to-person transmission. In the past 8 years, 32 (20%) of 164 plague patients reported to CDC have developed pulmonary disease. Three (33%) of the nine plague patients who had been interstate travelers developed pneumonia, including the girl reported here (Table 1) (*3*). In addition to plague cases among persons traveling between states (*3,6*), one case was documented in a serviceman returning to Texas from Vietnam in 1966 (*7*). This case emphasizes the need for physicians in all parts of the country to consider plague in the differential diagnosis of patients with fever and/or lymphadenopathy who have histories of recent travel or residence in areas where plague is enzootic/endemic.

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TABLE 1. Human plague in interstate travelers – United States, 1957-1983

Location			Patient		
Exposed	Diagnosed	Year	Age	Sex	Outcome
Colorado	Texas	1957	4	F	Fatal
New Mexico	Massachusetts	1961	38	M	2°P,* fatal
New Mexico	Texas	1973	64	M	Recovered
New Mexico	California	1975	14	M	2°P, fatal
Wyoming	Oregon	1978	38	M	Recovered
New Mexico	Nebraska	1980	16	F	Recovered
New Mexico	Montana	1980	12	M	Recovered
Oregon	California	1981	38	M	Fatal
New Mexico	South Carolina	1983	13	F	2°P, fatal

*Secondary plague pneumonia.

Beryllium Disease among Workers in a Spacecraft-Manufacturing Plant — California

From 1977 to 1981, three cases of beryllium disease (berylliosis) among workers in a large spacecraft-manufacturing plant in California, were reported to the Beryllium Case Registry (BCR) of the National Institute for Occupational Safety and Health (NIOSH). All three patients were machinists who had worked with beryllium metal from the late 1950s to the mid-1970s, fabricating special parts for missile guidance systems.

A case history: Beginning in the mid-1970s, a machinist (born in 1936) noted progressive shortness of breath, cough, and slight sputum production; by 1978, he was unable to work. Despite previous athletic ability, by 1980, he could not perform routine household chores without shortness of breath. He had never smoked. Physical examination revealed a well-developed, well-nourished male with rapid pulse rate; his diaphragm moved poorly, and breath sounds were decreased at the bases of both lungs. Occasional rhonchi were heard at the base of the right lung. He experienced shortness of breath on minimal exertion and had "clubbing" of the fingers and toes. Chest x-rays taken in 1966, 1967, and 1976 were reported to have been negative. However, films taken in June 1978 showed extensive confluent basilar infiltrates in both lung fields. The junctional areas in the mid-zones showed some granularity. The heart and costophrenic angles were normal. A chest x-ray taken in January 1980 showed irregular opacities involving the lower halves of both lungs, with bilateral areas of subsegmental atelectasis.

Laboratory tests in January 1980 showed a hemoglobin level of 16.1 g. White blood cell count was 6,100, with a normal differential. Sputum tests were negative for fungi and acid-fast bacilli. Measurements of arterial blood gases showed a pH of 7.42, PCO_2 of 36 mm Hg, PO_2 of 69, and oxygen saturation of 93%. Pulmonary function tests showed moderate reduction of vital capacity and total lung capacity and marked reduction of forced expiratory volume and diffusing capacity. Pathologic examination of biopsied mediastinal lymph nodes revealed non-caseating granuloma and chronic interstitial pneumonitis. A lymphoblast transformation test (LTT) conducted in 1981 was positive.

The patient was first employed in 1956 as a milling machinist. He worked with beryllium metal and alloys from 1960 through the mid-1970s at three different plants of this company, two of which have been closed. According to the industrial protocol, such machining was to be done wet or under high-efficiency, local-exhaust ventilation. However, the patient stated that at times there was sufficient spillage of dusts to require vacuuming. He did not use a respirator.

Other cases: The two other patients had similar case histories. The second patient (born in 1914) was employed in 1958, had worked in all three facilities, and became symptomatic in 1976. His LTT was negative while he was on steroid therapy. The third patient (born in 1936) was employed in 1956, had worked at two of the three facilities, and became symptomatic in 1980. His LTT was positive in 1981.

In 1981, NIOSH personnel evaluated both employee health records and present and past levels of employee exposure to beryllium. Records of the company's air sampling for beryllium indicated that, from 1963 to 1973, 14%-44% of samples* taken at the machine shops exceeded the present standard for exposure to beryllium.† From 1973 through 1981, the stand-

*Short-term, breathing-zone samples collected with high-volume pumps.

†2 μg Be/m^3 of air as an 8-hour time-weighted average promulgated by the Occupational Safety and Health Administration.

Beryllium Disease — Continued

ard was exceeded only once; a sample in 1977 was 4.6 $\mu g/m^3$. Review of the company's medical records showed no additional cases among current employees in the same job category.

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Editorial Note: Chronic berylliosis is a pulmonary and systemic granulomatous disease caused by exposure to beryllium. Acute beryllium disease in the form of chemical pneumonitis was first reported in Europe in 1933 (*1*) and in the United States in 1943 (*2*). Cases of chronic berylliosis were first described in 1946 among workers in plants manufacturing fluorescent lamps in Massachusetts (*3*). The BCR, established at the Massachusetts Institute of Technology in 1952 to collect data and to study the clinical course, treatment, and complications of beryllium disease (*4*), was maintained by the Pulmonary Unit of the Massachusetts General Hospital through 1977. A total of 887 cases were registered during those 25 years (*5*). Since 1978, the BCR has been maintained by NIOSH, and 10 additional cases have been identified.

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

Disease	32nd Week Ending			Cumulative, 32nd Week Ending		
	August 13, 1983	August 14, 1982	Median 1978-1982	August 13, 1983	August 14, 1982	Median 1978-1982
Aseptic meningitis	440	366	328	4,268	3,873	2,896
Encephalitis: Primary (arthropod-borne & unspec.)	50	35	36	694	677	520
Post-infectious	2	3	4	55	57	137
Gonorrhea: Civilian	18,299	19,424	21,892	540,399	580,314	595,812
Military	733	706	618	14,798	16,809	16,752
Hepatitis: Type A	379	426	554	13,060	13,567	16,872
Type B	409	504	363	13,718	12,993	10,509
Non A, Non B	66	46	N	2,070	1,404	N
Unspecified	126	197	217	4,736	5,234	6,144
Legionellosis	18	23	N	447	313	N
Leprosy	3	-	3	155	126	116
Malaria	20	28	31	464	637	637
Measles: Total	11	29	105	1,163	1,153	11,592
Indigenous	9	N	N	967	N	N
Imported*	2	N	N	196	N	N
Meningococcal infections: Total	29	45	45	1,899	2,057	1,837
Civilian	29	45	45	1,884	2,045	1,824
Military	-	-	-	15	12	13
Mumps	30	24	54	2,311	4,108	6,859
Pertussis	57	65	51	1,265	813	830
Rubella (German measles)	11	10	33	739	1,873	3,118
Syphilis (Primary & Secondary): Civilian	685	712	662	19,694	20,159	15,922
Military	8	10	5	255	258	196
Toxic-shock syndrome	3	N	N	264	N	N
Tuberculosis	429	448	617	14,177	15,452	16,536
Tularemia	10	7	6	187	138	122
Typhoid fever	10	3	9	228	229	282
Typhus fever, tick-borne (RMSF)	61	50	50	797	683	691
Rabies, animal	97	139	139	3,749	3,898	3,898

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1983		Cum. 1983
Anthrax	-	Plague	27
Botulism: Foodborne	12	Poliomyelitis: Total	3
Infant (Calif. 1)	38	Paralytic (La. 1)	3
Other	-	Psittacosis	74
Brucellosis (Miss. 1, Ark. 1, Tex. 2)	116	Rabies, human	2
Cholera	1	Tetanus	45
Congenital rubella syndrome	16	Trichinosis	24
Diphtheria	-	Typhus fever, flea-borne (endemic, murine) (Tex. 2)	30
Leptospirosis	28		

*Two of the 11 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 13, 1983 and August 14, 1982 (32nd week)

Reporting Area	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy	Malaria
		Primary	Post-infectious			A	B	NA,NB	Unspecified			
	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1982	1983	1983	1983	1983	1983	Cum. 1983	Cum. 1983
UNITED STATES	440	694	55	540,399	580,314	379	409	66	126	18	155	464
NEW ENGLAND	16	26	-	13,675	13,785	6	11	4	8	5	3	23
Maine	3	-	-	691	658	-	1	-	-	-	-	1
N.H.	-	4	-	432	473	-	1	-	-	-	2	-
Vt.	-	1	-	253	259	-	-	3	-	-	-	1
Mass.	3	10	-	5,802	6,391	3	1	-	8	-	-	10
R.I.	1	-	-	758	917	-	-	-	-	4	-	3
Conn.	9	11	-	5,739	5,087	3	8	1	-	1	1	8
MID ATLANTIC	46	71	4	69,068	71,231	24	46	3	11	2	20	64
Upstate N.Y.	13	19	-	10,604	11,247	10	16	-	3	-	-	19
N.Y. City	5	8	-	27,922	30,011	-	-	-	-	1	19	17
N.J.	21	15	-	12,967	12,963	14	30	3	8	1	-	22
Pa.	7	29	4	17,575	17,010	-	-	-	-	-	1	6
E.N. CENTRAL	79	181	16	74,960	83,145	31	51	2	13	4	5	31
Ohio	13	63	7	20,213	22,913	7	13	2	-	3	1	5
Ind.	33	37	1	7,591	9,451	10	11	-	6	-	-	-
Ill.	1	15	5	19,450	23,713	1	7	-	-	-	2	12
Mich.	32	50	-	20,929	19,610	13	20	-	7	1	2	12
Wis.	-	16	3	6,777	7,458	-	-	-	-	-	-	2
W.N. CENTRAL	27	59	7	24,614	27,370	21	10	1	6	-	5	20
Minn.	-	19	1	3,583	4,092	3	1	-	-	-	4	6
Iowa	7	30	-	2,790	2,874	1	-	-	-	-	-	3
Mo.	7	6	-	11,681	12,862	3	6	-	3	-	-	2
N. Dak.	-	-	-	259	367	-	-	-	-	-	-	2
S. Dak.	4	-	2	696	740	5	-	-	-	-	-	1
Nebr.	1	3	-	1,531	1,659	1	-	-	2	-	-	1
Kans.	8	1	4	4,074	4,776	8	3	1	1	-	1	5
S. ATLANTIC	61	109	15	140,477	151,690	39	114	11	12	5	8	63
Del.	-	-	-	2,516	2,403	1	1	-	-	-	-	-
Md.	11	16	-	17,955	18,808	2	11	5	-	-	1	12
D.C.	-	-	-	9,561	8,366	-	2	-	-	-	-	8
Va.	9	23	2	12,407	12,372	1	12	-	2	1	1	10
W. Va.	2	11	-	1,446	1,675	-	2	-	-	-	-	1
N.C.	21	25	-	21,096	24,084	3	6	-	2	-	-	3
S.C.	1	2	-	13,357	14,694	-	13	-	5	-	-	5
Ga.	8	6	1	28,380	28,978	8	33	2	1	-	1	5
Fla.	9	26	12	33,759	40,310	24	34	4	2	4	5	19
E.S. CENTRAL	63	24	1	45,465	49,657	39	30	4	1	-	-	7
Ky.	-	-	-	5,315	6,675	28	1	-	-	-	-	-
Tenn.	5	4	-	18,681	19,337	2	13	3	1	-	-	-
Ala.	56	18	-	14,140	14,920	3	4	1	-	-	-	5
Miss.	2	2	1	7,329	8,725	6	12	-	-	-	-	2
W.S. CENTRAL	75	95	2	77,613	79,508	68	38	3	42	-	14	46
Ark.	-	6	-	5,898	6,496	1	4	2	1	-	-	1
La.	-	8	-	14,942	14,365	11	5	-	-	-	1	4
Okla.	30	23	1	9,012	8,843	14	7	1	7	-	-	9
Tex.	45	58	1	47,761	49,804	42	22	-	34	-	13	32
MOUNTAIN	23	34	4	17,199	19,689	26	15	4	4	2	12	23
Mont.	-	-	-	731	806	-	1	-	-	-	-	-
Idaho	-	-	-	735	911	-	1	1	1	-	-	2
Wyo.	1	2	-	451	575	-	-	-	-	-	-	1
Colo.	18	18	-	4,844	5,236	8	9	1	-	-	2	8
N. Mex.	-	1	-	2,089	2,564	-	-	-	-	-	-	5
Ariz.	4	5	4	4,932	5,309	16	4	2	3	1	9	4
Utah	-	8	-	825	935	2	-	-	-	1	1	3
Nev.	-	-	-	2,592	3,353	-	-	-	-	-	-	-
PACIFIC	50	95	6	77,328	84,239	125	94	34	29	-	88	187
Wash.	6	7	1	5,842	7,019	1	5	1	-	-	11	5
Oreg.	-	-	2	4,142	4,796	22	8	1	1	-	1	6
Calif.	42	81	3	63,775	68,847	100	78	32	28	-	52	176
Alaska	1	-	-	1,982	2,053	1	1	-	-	-	-	-
Hawaii	1	7	-	1,587	1,524	1	2	-	-	-	24	-
Guam	U	-	-	74	93	U	U	U	U	U	-	2
P.R.	9	1	1	1,663	1,789	4	20	-	11	-	-	2
V.I.	U	-	-	160	170	U	U	U	U	U	-	-
Pac. Trust Terr.	U	-	-	-	271	U	U	U	U	U	-	-

N: Not notifiable U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 13, 1983 and August 14, 1982 (32nd week)

Reporting Area	Measles (Rubeola)					Menin-gococcal Infections	Mumps			Pertussis			Rubella		
	Indigenous		Imported*		Total										
	1983	Cum. 1983	1983	Cum. 1983	Cum. 1982	Cum. 1983	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982
UNITED STATES	9	967	2	196	1,153	1,899	30	2,311	4,108	57	1,265	813	11	739	1,873
NEW ENGLAND	-	2	-	13	13	97	2	93	156	2	42	36	-	10	14
Maine	-	-	-	-	-	8	-	15	36	-	4	3	-	-	-
N.H.	-	-	-	3	2	3	-	17	13	1	6	4	-	2	8
Vt.	-	-	-	-	2	7	1	15	7	-	7	2	-	3	-
Mass.	-	2	-	2	3	31	1	22	70	1	21	15	-	5	2
R.I.	-	-	-	-	-	8	-	12	14	-	4	10	-	-	1
Conn.	-	-	-	8	6	40	-	12	16	-	-	2	-	-	3
MID ATLANTIC	2	64	1	24	154	320	6	182	255	6	267	137	7	133	91
Upstate N.Y.	-	-	1 †	8	109	101	-	68	58	-	86	70	1	24	44
N.Y. City	2	38	-	12	37	56	5	29	42	1	41	20	-	86	31
N.J.	-	26	-	1	4	54	-	33	36	1	16	13	-	3	16
Pa.	-	-	-	3	4	109	1	52	119	4	124	34	6	20	-
E.N. CENTRAL	-	556	-	56	71	350	11	1,169	2,226	4	267	195	-	105	172
Ohio	-	72	-	13	1	106	7	536	1,554	2	86	50	-	2	-
Ind.	-	384	-	4	2	42	3	31	37	1	32	12	-	23	26
Ill.	-	98	-	33	23	101	1	120	243	1	98	86	-	43	64
Mich.	-	2	-	5	45	66	-	417	294	-	17	15	-	15	48
Wis.	-	-	-	1	-	35	-	65	98	-	34	32	-	22	34
W.N. CENTRAL	-	-	-	-	49	106	-	134	536	10	81	42	-	30	55
Minn.	-	-	-	-	-	16	-	25	416	2	32	16	-	6	5
Iowa	-	-	-	-	-	12	-	35	30	-	5	5	-	-	-
Mo.	-	-	-	-	2	53	-	21	8	3	12	10	-	-	38
N. Dak.	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-
S. Dak.	-	-	-	-	-	4	-	-	1	1	4	4	-	-	1
Nebr.	-	-	-	-	3	1	-	2	-	-	-	1	-	-	-
Kans.	-	-	-	-	44	18	-	51	81	4	27	6	-	24	11
S. ATLANTIC	2	156	-	26	36	386	1	151	232	8	169	145	1	89	67
Del.	-	-	-	-	-	-	-	8	10	1	3	4	-	-	1
Md.	-	2	-	4	2	40	-	23	24	-	14	29	-	1	33
D.C.	-	-	-	-	1	4	-	-	-	-	-	1	-	-	-
Va.	-	10	-	13	14	57	1	29	32	-	45	18	-	1	12
W. Va.	-	-	-	-	2	2	-	34	86	-	5	4	-	-	1
N.C.	-	-	-	1	-	79	-	7	11	-	18	19	-	10	1
S.C.	-	-	-	4	-	41	-	8	13	-	13	14	-	1	1
Ga.	-	8	-	-	-	66	-	42	12	7	49	28	-	11	6
Fla.	2	136	-	4	17	97	-	-	44	-	22	28	1	65	12
E.S. CENTRAL	-	1	-	5	7	122	4	46	39	-	17	27	1	11	43
Ky.	-	-	-	1	1	26	3	21	12	-	5	4	1	10	25
Tenn.	-	-	-	-	6	42	1	20	15	-	5	13	-	-	2
Ala.	-	1	-	4	-	37	-	2	6	-	3	1	-	1	-
Miss.	-	-	-	-	-	17	-	3	6	-	4	9	-	-	16
W.S. CENTRAL	-	39	-	34	32	209	1	150	158	22	233	57	-	101	87
Ark.	-	5	-	7	-	17	-	2	6	-	14	3	-	-	1
La.	-	-	-	25	2	43	-	-	5	-	5	9	-	9	1
Okla.	-	1	-	-	16	25	-	-	-	11	163	3	-	-	3
Tex.	-	33	-	2	14	124	1	148	147	11	51	42	-	92	82
MOUNTAIN	-	1	-	3	10	69	1	96	75	2	128	52	-	29	75
Mont.	-	-	-	-	-	7	-	2	3	-	1	1	-	5	5
Idaho	-	-	-	-	-	6	-	6	3	1	5	10	-	8	6
Wyo.	-	-	-	-	1	2	-	-	2	-	5	2	-	2	7
Colo.	-	-	-	2	7	25	-	10	14	-	84	14	-	-	6
N. Mex.	-	-	-	-	-	6	-	-	-	-	9	4	-	-	6
Ariz.	-	-	-	1	2	14	1	68	33	-	14	20	-	6	14
Utah	-	-	-	-	-	8	-	6	15	1	10	1	-	7	20
Nev.	-	1	-	-	-	1	-	4	5	-	-	-	-	1	11
PACIFIC	5	148	1	35	781	240	4	290	431	3	61	122	2	231	1,269
Wash.	-	1	1 †	4	37	32	-	38	61	-	10	19	-	9	37
Oreg.	-	7	-	2	6	37	-	-	-	-	6	23	-	13	6
Calif.	5	139	-	27	733	164	4	225	356	3	44	66	2	208	1,214
Alaska	-	-	-	2	1	-	-	12	6	-	-	-	-	1	5
Hawaii	-	1	-	-	4	7	-	15	8	-	1	14	-	-	7
Guam	U	1	U	1	6	1	U	-	3	U	-	-	U	-	2
P.R.	-	81	-	-	85	11	-	103	50	1	9	17	-	3	8
V.I.	U	-	U	5	-	-	U	-	1	U	-	-	U	2	-
Pac. Trust Terr.	U	-	U	-	-	-	U	-	4	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations. U: Unavailable †International §Out-of-state

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 13, 1983 and August 14, 1982 (32nd week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	19,694	20,159	3	429	14,177	187	228	797	3,749
NEW ENGLAND	421	342	-	14	408	2	10	5	19
Maine	12	1	-	-	27	-	-	-	5
N.H.	16	3	-	-	28	-	-	1	2
Vt.	2	1	-	-	9	-	-	-	1
Mass.	262	231	-	10	208	1	8	2	7
R.I.	14	18	-	1	28	1	-	-	-
Conn.	115	88	-	3	108	-	2	2	4
MID ATLANTIC	2,436	2,782	-	87	2,555	-	40	16	147
Upstate N.Y.	140	293	-	9	415	-	6	-	49
N.Y. City	1,482	1,663	-	29	1,031	-	16	1	-
N.J.	474	373	-	14	538	-	13	8	14
Pa.	340	453	-	35	571	-	5	7	84
E.N. CENTRAL	1,003	1,234	-	71	1,898	2	37	57	327
Ohio	280	195	-	20	297	-	11	38	39
Ind.	74	117	-	-	182	-	1	4	26
Ill.	461	682	-	30	835	1	16	11	174
Mich.	139	179	-	16	490	1	9	4	6
Wis.	49	61	-	5	94	-	-	-	82
W.N. CENTRAL	228	352	2	14	455	58	13	40	578
Minn.	94	67	-	4	92	-	2	-	99
Iowa	11	18	-	1	39	-	-	-	150
Mo.	82	212	-	3	229	46	6	19	82
N. Dak.	2	7	-	-	5	-	-	1	56
S. Dak.	9	1	1	1	31	3	-	4	81
Nebr.	11	11	-	1	17	5	-	2	51
Kans.	19	36	1	4	42	4	5	14	59
S. ATLANTIC	5,219	5,438	1	74	2,862	13	29	331	1,281
Del.	20	9	-	-	27	-	-	2	2
Md.	334	294	-	4	237	5	5	31	530
D.C.	234	306	-	5	115	-	1	-	1
Va.	363	377	1	8	285	1	5	45	466
W. Va.	17	20	-	1	87	-	2	11	92
N.C.	482	405	-	9	400	6	1	134	15
S.C.	321	317	-	6	257	-	1	55	18
Ga.	960	1,115	-	13	542	1	2	50	138
Fla.	2,488	2,595	-	28	912	-	12	3	19
E.S. CENTRAL	1,348	1,390	-	34	1,278	14	4	53	263
Ky.	85	76	-	8	317	-	1	3	61
Tenn.	387	371	-	12	383	9	1	31	159
Ala.	545	514	-	7	332	-	1	16	43
Miss.	331	429	-	7	246	5	1	3	-
W.S. CENTRAL	5,272	5,181	-	51	1,654	84	29	289	747
Ark.	128	130	-	7	195	55	2	22	123
La.	1,159	1,164	-	-	242	2	3	-	20
Okla.	133	114	-	-	126	21	2	189	80
Tex.	3,852	3,773	-	44	1,091	6	22	78	524
MOUNTAIN	418	508	-	7	373	10	7	4	136
Mont.	5	3	-	-	34	2	1	1	66
Idaho	6	22	-	-	20	2	-	1	5
Wyo.	9	14	-	-	10	2	-	2	6
Colo.	99	143	-	1	49	1	1	-	14
N. Mex.	125	114	-	6	82	1	-	-	6
Ariz.	101	115	-	-	142	1	3	-	29
Utah	13	15	-	-	24	1	1	-	3
Nev.	60	82	-	-	12	-	1	-	7
PACIFIC	3,349	2,932	-	77	2,694	4	59	2	251
Wash.	113	100	-	6	140	2	3	-	2
Oreg.	81	70	-	-	114	1	3	-	-
Calif.	3,104	2,678	-	67	2,254	1	51	2	234
Alaska	7	8	-	-	36	-	-	-	15
Hawaii	44	76	-	4	150	-	2	-	-
Guam	-	1	U	U	3	-	-	-	-
P.R.	499	392	-	11	300	-	-	-	32
V.I.	12	21	U	U	1	-	-	-	-
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending August 13, 1983 (32nd week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	626	425	114	32	16	39	40
Boston, Mass.	157	94	32	10	9	12	13
Bridgeport, Conn.	35	24	6	4	1	-	2
Cambridge, Mass.	26	22	4	-	-	-	2
Fall River, Mass.	26	22	3	1	-	-	-
Hartford, Conn.	57	40	8	6	2	1	1
Lowell, Mass.	21	16	3	2	-	-	-
Lynn, Mass.	18	13	4	-	1	-	2
New Bedford, Mass.	24	17	5	1	-	1	-
New Haven, Conn.	54	27	7	1	-	19	1
Providence, R.I.	84	63	16	1	1	3	11
Somerville, Mass.	6	5	-	1	-	-	1
Springfield, Mass.	40	25	12	1	-	2	2
Waterbury, Conn.	24	20	3	1	-	-	1
Worcester, Mass.	54	37	11	3	2	1	4
MID. ATLANTIC	2,663	1,711	601	204	77	70	99
Albany, N.Y.	53	36	11	1	3	2	-
Allentown, Pa.	23	18	5	-	-	-	-
Buffalo, N.Y.	108	61	32	6	4	5	8
Camden, N.J.	40	23	11	4	2	-	-
Elizabeth, N.J.	28	21	7	-	-	-	-
Erie, Pa.†	34	23	6	1	2	2	-
Jersey City, N.J.	43	28	6	6	1	2	-
N.Y. City, N.Y.	1,370	876	290	121	48	35	47
Newark, N.J.	54	28	16	8	2	-	-
Paterson, N.J.	24	11	6	5	1	1	1
Philadelphia, Pa.†	392	233	110	24	7	18	18
Pittsburgh, Pa.†	78	50	21	7	-	-	4
Reading, Pa.	19	12	5	2	-	-	2
Rochester, N.Y.	137	98	28	7	3	1	9
Schenectady, N.Y.	23	16	5	1	-	1	-
Scranton, Pa.†	24	20	3	-	-	1	2
Syracuse, N.Y.	112	81	22	5	3	1	2
Trenton, N.J.	43	29	9	5	-	-	-
Utica, N.Y.	24	20	4	-	-	-	2
Yonkers, N.Y.	34	27	4	1	1	1	4
E.N. CENTRAL	2,167	1,354	489	155	72	96	64
Akron, Ohio	49	29	12	3	1	4	-
Canton, Ohio	32	16	10	4	1	1	-
Chicago, Ill	527	293	137	47	19	31	13
Cincinnati, Ohio	153	104	33	8	3	5	8
Cleveland, Ohio	172	99	41	17	5	10	1
Columbus, Ohio	133	73	40	10	3	7	4
Dayton, Ohio	106	73	20	3	6	4	2
Detroit, Mich.	222	136	50	16	11	9	5
Evansville, Ind.	47	31	13	1	-	2	1
Fort Wayne, Ind.	70	51	11	4	2	2	6
Gary, Ind.	31	12	11	3	5	-	1
Grand Rapids, Mich.	51	35	10	4	-	2	3
Indianapolis, Ind.	144	87	39	8	4	6	3
Madison, Wis.	38	21	8	6	1	2	2
Milwaukee, Wis.	108	69	21	10	2	6	6
Peoria, Ill.	41	26	9	4	2	-	2
Rockford, Ill.	35	23	7	1	3	1	2
South Bend, Ind.	39	24	9	3	1	2	1
Toledo, Ohio §	117	111	-	1	3	1	4
Youngstown, Ohio	52	41	8	2	-	1	-
W.N. CENTRAL	652	430	136	45	13	28	40
Des Moines, Iowa	90	61	16	7	5	1	9
Duluth, Minn.	19	18	-	1	-	-	-
Kansas City, Kans.	24	13	10	1	-	-	1
Kansas City, Mo.	104	65	20	10	2	7	6
Lincoln, Nebr.	19	13	5	-	-	1	2
Minneapolis, Minn.	68	46	13	4	1	4	3
Omaha, Nebr.	75	43	25	5	1	1	4
St. Louis, Mo.	132	89	28	8	3	4	11
St. Paul, Minn.	58	46	8	1	-	3	1
Wichita, Kans.	63	36	11	8	1	7	3

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,125	651	283	92	40	59	35
Atlanta, Ga.	119	72	29	12	4	2	4
Baltimore, Md.	119	67	20	12	9	11	1
Charlotte, N.C.	71	40	21	7	2	1	5
Jacksonville, Fla.	107	48	38	10	5	6	4
Miami, Fla.	108	68	20	13	2	5	1
Norfolk, Va.	43	20	15	4	2	2	3
Richmond, Va.	86	60	17	2	4	3	6
Savannah, Ga.	39	25	5	6	3	-	1
St. Petersburg, Fla.	89	70	15	2	1	1	1
Tampa, Fla.	63	37	14	2	1	9	5
Washington, D.C.	221	117	72	17	6	9	3
Wilmington, Del.	60	27	17	5	1	10	1
E.S. CENTRAL	783	491	184	47	37	24	31
Birmingham, Ala.	114	69	35	2	6	2	2
Chattanooga, Tenn.	47	30	11	3	-	3	1
Knoxville, Tenn.	44	26	14	2	1	1	-
Louisville, Ky.	127	86	30	4	4	3	8
Memphis, Tenn.	209	139	40	15	12	3	12
Mobile, Ala.	65	33	13	11	6	2	3
Montgomery, Ala.	54	32	13	2	4	3	2
Nashville, Tenn.	123	76	28	8	4	7	3
W.S. CENTRAL	1,172	643	292	120	66	51	37
Austin, Tex.	40	27	5	1	3	4	4
Baton Rouge, La.	45	31	8	3	2	1	2
Corpus Christi, Tex.	30	19	7	3	1	-	-
Dallas, Tex.	197	109	49	16	11	12	2
El Paso, Tex.	50	24	19	3	4	-	1
Fort Worth, Tex.	113	60	25	13	9	6	8
Houston, Tex.	257	123	78	35	14	7	3
Little Rock, Ark.	42	21	12	2	1	6	4
New Orleans, La.	106	60	26	11	4	5	-
San Antonio, Tex.	129	69	29	18	5	8	7
Shreveport, La.	50	27	14	5	3	1	-
Tulsa, Okla.	113	73	20	10	9	1	6
MOUNTAIN	579	337	132	54	28	27	22
Albuquerque, N.Mex.	72	47	14	8	2	-	3
Colo. Springs, Colo.	35	17	11	3	-	4	3
Denver, Colo.	107	57	25	10	7	8	4
Las Vegas, Nev.	68	33	19	9	6	1	1
Ogden, Utah	24	16	6	1	1	-	2
Phoenix, Ariz.	134	70	37	14	6	7	1
Pueblo, Colo.	15	14	1	-	-	-	1
Salt Lake City, Utah	46	25	7	6	3	5	-
Tucson, Ariz.	78	58	12	3	3	2	7
PACIFIC	1,729	1,096	387	124	68	53	88
Berkeley, Calif.	18	13	5	-	-	-	1
Fresno, Calif.	71	48	10	5	5	3	5
Glendale, Calif.	30	22	6	-	-	2	2
Honolulu, Hawaii	62	44	12	1	2	3	6
Long Beach, Calif.	96	68	18	7	-	3	5
Los Angeles, Calif.	456	280	100	38	24	14	17
Oakland, Calif.	66	42	12	7	1	4	3
Pasadena, Calif.	38	27	5	3	2	1	1
Portland, Oreg.	119	74	29	8	6	2	7
Sacramento, Calif.	66	43	12	6	4	1	7
San Diego, Calif.	116	70	33	6	2	4	9
San Francisco, Calif.	138	92	32	9	4	1	3
San Jose, Calif.	127	68	36	11	7	5	8
Seattle, Wash.	186	123	37	11	9	6	7
Spokane, Wash.	81	49	22	8	2	-	3
Tacoma, Wash.	59	33	18	4	-	4	4
TOTAL	11,496††	7,138	2,618	873	417	447	456

* 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.

Beryllium Disease — Continued

Chronic berylliosis resembles sarcoidosis in many respects, and the differential diagnosis is often difficult (*6*). Recently, four cases of berylliosis, initially considered to be sarcoidosis, were reported among workers who smelted scraps of beryllium-copper alloy in a plant in Connecticut (*7*). Some investigators advocate the use of the LTT as a diagnostic tool based on the theory that berylliosis is a manifestation of immunologic reaction (*8,9*).

Although the use of beryllium compounds in fluorescent lighting tubes was discontinued in 1949, potential for exposure to beryllium exists in the nuclear and aerospace industries and in the refining of beryllium metal and melting of beryllium-containing alloys, the manufacturing of electronic devices, and the handling of other beryllium-containing material. The present cases indicate that an exposure hazard exists, even in industries with modern technology. By the time a case is diagnosed and reported to the BCR, many years may have passed, and the patient may already suffer considerable pulmonary disability.

It is important that management recognize the health hazards of beryllium, properly inform workers of these hazards, and establish programs to control exposure. When a physician sees a patient with suspected sarcoidosis, the occupational history should be thoroughly elicited to rule out possible berylliosis. Suspected cases of berylliosis should be reported to local and state health departments and to the Surveillance Branch, Division of Surveillance, Hazard Evaluations, and Field Studies, NIOSH, Robert A. Taft Laboratories, 4676 Columbia Parkway, Cincinnati, Ohio 45226, telephone (513) 684-3268. An evaluation for admission into the BCR will be made by NIOSH consultants at no cost to the patient or referring physician.

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An Outbreak of *Pseudomonas* Folliculitis Associated with a Waterslide — Utah

On May 3, 1983, the Salt Lake City-County Health Department notified the Office of Epidemiology and Surveillance, Utah Department of Health, of complaints from individuals who had developed rash illnesses or earaches after swimming at a local waterslide* on April 30, 1983. By May 7, 265 cases were identified among 650 persons who visited the waterslide on April 30 (Figure 1).

*An elevated, curved tube that carries water into a plunge pool.

Pseudomonas Folliculitis – Continued

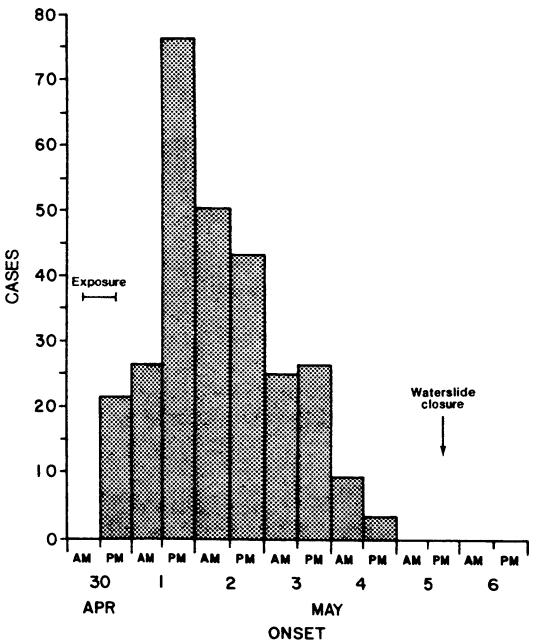
A case was defined as a person who developed rash or earache after swimming at the waterslide between April 23 and May 7, 1983 (*1*). Approximately 91% of patients had rashes, while the remainder reported earaches and no rashes; half of those 9% were diagnosed as having otitis externa. Other symptoms included headache (42%), fatigue (30%), muscle aches (34%), red or burning eyes (31%), and fever (26%). The incubation period ranged from 8 hours to 5.5 days (mean 48 hours).

Samples taken from papulovesicular lesions of seven individuals were submitted to various laboratories for culture and antibiotic sensitivity testing; four of these were positive for *P. aeruginosa*. Drainage from the ears of two exposed children also grew *P. aeruginosa*, as did multiple environmental samples from the water and pool surroundings. Antibiotic sensitivity patterns of clinical and environmental samples were identical. Isolates were identified as *P. aeruginosa* serogroup 0:4.

Although cases generally resolved spontaneously without serious complications, persistent purulent otitis externa was seen. One patient was hospitalized with a temperature of 40 C (104 F), severe dermatitis, and axillary lymphadenopathy, but blood cultures were negative. His illness resolved rapidly following intravenous gentamycin.

Two church groups, consisting of 218 members, that had visited the waterslide on April 30 completed questionnaires concerning clinical and exposure histories. Of 152 persons exposed to the waterslide, 116 (76%) were ill, while none of 66 unexposed persons were ill ($p < 0.0001$). Showering within 30 minutes after last exposure did not reduce the risk of developing a rash (26% vs. 23%). The mean age of patients was 14.5 years; that of exposed well persons was 17.5 years, suggesting younger children were more likely to become ill (possibly because they tended to spend more time in the water).

FIGURE 1. Distribution of *Pseudomonas* folliculitis cases associated with a waterslide, by date of onset – Utah, 1983



Pseudomonas Folliculitis — Continued

An inflatable, plastic bubble covered the entire pool and deck areas and produced water and ambient air temperatures of 35 C (95 F) and a relative humidity of 95%. The water was treated by a hypochlorite feeder containing chlorine stabilized with cyanuric acid. The waterslide has a circulation system that uses two pumps and four diatomaceous earth filters. One pump had failed several days before April 30, and the second pump failed early that morning. The pool remained open while repairs were under way, although many individuals reported the water was turbid and foamy that day. On May 1, the pool was closed by the operator to allow for testing of the pumps and for hyperchlorination.

The pool was subsequently reopened for 3 weekday afternoons; intensive surveillance found no cases resulting from exposures on those days alone or from exposure before April 30. The waterslide was closed on May 5 and was drained, cleaned, and retested for compliance with free-chlorine and pH standards (*2*). After reopening for 2 days, pool water and environmental samples indicated a continuing problem with achieving adequate disinfection, and the slide was again closed. Since that time, the plastic bubble and poolside indoor-outdoor carpeting have been removed, and a continuous gas chlorinator has replaced the hypochlorite feeder. Daily environmental samples have been satisfactory, and the waterslide has now been reopened. Continuing physician-based surveillance has not identified any new or recurrent cases.

Reported by DM Perrotta, PhD, RE Johns, Jr, MD, State Epidemiologist, Utah Dept of Health; R Bradley, MD, Salt Lake City, J Jacobson, MD, University of Utah Medical Center, K Miner, T Sadler, HL Gibbons, MD, Salt Lake City-County Health Dept; Special Pathogens Br, Div of Bacterial Diseases, Hospital Infections Program, Center for Infectious Diseases, CDC.

Editorial Note: This is the largest reported outbreak of *P.* folliculitis and the first outbreak associated with a waterslide. *P. aeruginosa* serotype 0:4 has not previously been reported to be linked with *P.* folliculitis (*3*). Most of the reported outbreaks associated with hot tubs or whirlpools have shown *P. aeruginosa* serotypes 0:9 or 0:11 to be the responsible pathogen. In this outbreak, the source of contamination could not be determined, but small numbers of pseudomonads are commonly found in and around swimming pools (*4*). Warm and humid conditions, combined with ineffective chlorination, probably led to overgrowth of *P. aeruginosa* in the pool and deck area.

The frequency of systemic complaints (headache, fever, nausea, muscle ache) in this outbreak was higher than in other *Pseudomonas* folliculitis outbreaks. Whether serotype 0:4 is more pathogenic than other *P. aeruginosa* serotypes or whether other personal or environmental risk factors contributed to the development of these complaints is unknown. Although water samples were not examined for other etiologic agents—such as *Legionella pneumophila*, the cause of Pontiac fever—serologic studies are currently under way in an attempt to explain the high rate of systemic complaints.

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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report,* Centers for Disease Control, Atlanta, Georgia 30333.

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