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**Surveillance Summary**  
 21 Leptospirosis — United States

**Epidemiologic Notes and Reports**  
 22 Staphylococcal Food Poisoning — Colorado  
 27 Follow-up on Serogroup A Meningococcal Disease — Alaska, Oregon

**Current Trends**  
 28 Influenza — Worldwide

## MORBIDITY AND MORTALITY WEEKLY REPORT

### Surveillance Summary

#### Leptospirosis — United States

**1975:** One hundred nineteen cases of human leptospirosis with onset in 1975 have been reported to CDC — the largest number of reported cases since 1964 (Figure 1). Cases were reported from 28 states and Puerto Rico, although 6 states — Alabama, California, Florida, Louisiana, Tennessee, and Texas — accounted for 49% of the reports.

Occupation was reported for 80 of the cases; only 8 of these patients had apparent job-related illness. The most commonly reported occupations were student (32), homemaker (10), indoor laborer (10), and outdoor laborer (5), and in 9 cases the patient was unemployed or retired. All are indications that many patients acquire their infections while engaged in avocational activities.

The most probable sources of infection were surface water (ponds, creeks, or sewage systems, which accounted for 29%), dogs (22%), rodents (11%), and cattle or swine (8%).

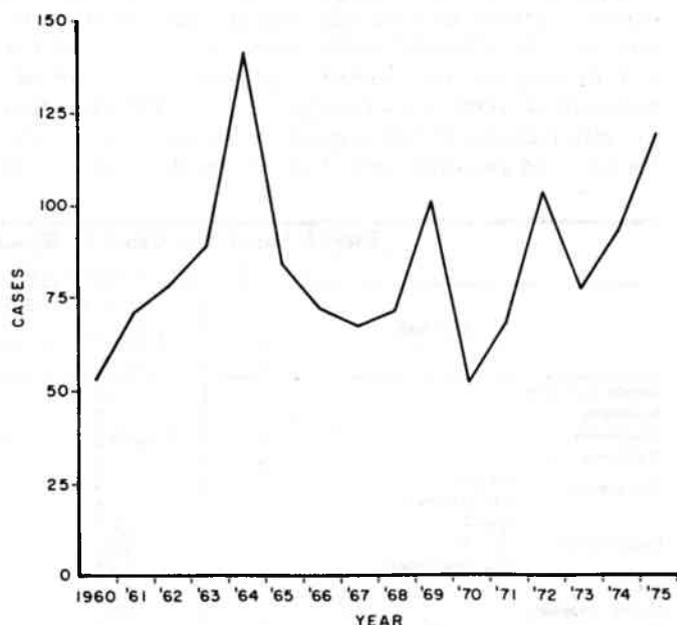
The age distribution of patients was not significantly different from the age distribution in the general population (1970 census). Seventy-one percent of cases occurred in males. In females, 60% of cases occurred in patients 10 to 29 years old; in males, 41% of cases occurred in patients 10 to 29 years old.

Sixty-four percent of patients had onset in the months of July-October, a seasonal pattern that has been observed for the last 10 years. In 93% of the cases, the patients were hospitalized, with an average stay of 12 days. Thirty-five patients were icteric, 53 were anicteric, and in 31 patients the presence or absence of jaundice was not reported. Eighty-five percent of 61 patients tested had 1 or more abnormal hepatic function tests, and 60% (24 of 40 tested) had elevated serum creatinine levels. Abnormalities of urinary sediments were not uncommon in icteric patients. The case-fatality ratio was 3% (4/119).

**Secular Trends of Leptospirosis:** In contrast to many infectious diseases, leptospirosis has been reported with increasing frequency over the past 5 decades. Sixteen cases were reported in the period 1925-1934, 230 in 1935-1944, 267 in 1945-1954, 705 in 1955-1964, and 791 in 1965-1974.

With the increasing frequency of reported infections, the epidemiology of leptospirosis in the United States has be-

FIGURE 1. Reported human leptospirosis cases, United States, 1960-1975



come better defined. Before 1948, leptospiral infections were considered to be primarily the result of occupational exposure to rat-infested environments, only infections by *Leptospira interrogans* serovar *icterohaemorrhagiae* and to a much lesser extent *canicola* were recognized, and the clinical disease was almost always severe with a high case-fatality ratio.

After 1948, the complex epidemiology of leptospirosis in this country became apparent. The majority of cases are no longer related to occupational exposure. Rats, although still an important reservoir, are no longer the primary source of human infections. Infections by 15 different serogroups have been confirmed by culture or suspected on serologic grounds. And the mild anicteric forms of the disease are now being recognized as being more common than the clinically severe icteric forms.

With few exceptions, the epidemiology of human leptospirosis basically involves direct or indirect contact with the

urine of leptospiruric animals. Direct exposure appears to be a mode of transmission for pet owners and certain occupational groups such as farm workers and veterinarians.

However, indirect exposure through vehicles such as contaminated water and soil appears to be more common, over-

all. Man is considered to be a dead-end host, and person-to-person transmission is rare.

*Reported by the Bacterial Zoonoses Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.*

▲ A copy of the report from which these data were derived is available on request from the Center for Disease Control, Attn: Chief, Bacterial Zoonoses Br, Bacterial Diseases Div, Bur of Epidemiology, Atlanta, Georgia 30333.

Epidemiologic Notes and Reports

**Staphylococcal Food Poisoning – Colorado**

The Tri-County District Health Department (Denver) notified the Colorado Department of Health July 28, 1976, of a staphylococcal food poisoning outbreak among employees of a Denver business related to a food vending machine. Eleven workers had become violently ill in the mid- and late afternoon with nausea and vomiting. A few had diarrhea, but none had chills or fever. One patient was hospitalized. There was a statistically significant association between purchase of Greek spaghetti and illness ( $p < .001$ ). Persons who ate other foods from the vending machines as

well as some additional purchasers of Greek spaghetti did not become sick.

Because the catering firm supplying the hot food vending machines also serviced 15 other businesses at 29 locations in the greater Denver area, further inquiries were made to identify other affected persons. Three sick employees from 2 other businesses were found. They had typical symptoms of staphylococcal food poisoning. All 3 had also eaten Greek spaghetti from hot food vending  
*(Continued on page 27)*

**Table I. Summary—Cases of Specified Notifiable Diseases: United States**

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

DISEASE	3rd WEEK ENDING		MEDIAN 1972-1976	CUMULATIVE, FIRST 3 WEEKS		
	January 22, 1977	January 24, 1976		January 22, 1977	January 24, 1976	MEDIAN 1972-1976
Aseptic meningitis	30	36	41	120	124	124
Brucellosis	3	5	3	9	9	5
Chickenpox	6,062	4,791	—	13,328	12,728	—
Diphtheria	—	5	3	—	30	5
Encephalitis	9	10	13	38	55	39
{ Primary	1	1	4	3	12	8
{ Post-Infectious	262	278	211	746	727	532
Hepatitis, Viral	602	781	944	1,656	1,979	2,242
{ Type A	175	184	—	456	495	—
{ Type unspecified	5	7	3	11	20	10
Malaria	772	540	540	2,562	1,171	1,171
Measles (rubeola)	32	27	33	107	84	84
Meningococcal infections, total	32	26	32	107	83	83
Civilian	—	1	1	—	1	3
Military	578	1,134	1,735	1,410	3,109	4,152
Mumps	14	29	—	44	85	—
Pertussis	171	228	228	510	499	499
Rubella (German measles)	1	2	1	2	3	3
Tetanus	518	538	—	1,123	1,488	—
Tuberculosis	4	2	2	7	8	8
Tularemia	4	14	3	15	22	10
Typhoid fever	—	1	1	5	1	5
Typhus, tick-borne (Rky. Mt. spotted fever)						
Veneral Diseases:						
Gonorrhea	18,806	19,618	—	55,488	58,489	—
{ Civilian	375	963	—	1,415	1,989	—
{ Military	489	486	—	1,293	1,522	—
Syphilis, primary and secondary	8	8	—	19	21	—
{ Civilian	48	33	46	130	80	120
{ Military						
Rabies in animals						

**Table II. Notifiable Diseases of Low Frequency: United States**

	CUM.		CUM.
Anthrax:	—	Poliomyelitis, total:	1
Botulism:	—	Paralytic:	1
Congenital rubella syndrome:	—	Psittacosis:	2
Leprosy:	5	Rabies in man:	—
Leptospirosis: Ohio 1, Mo. 1, Hawaii 1	4	Trichinosis: Conn. 1	5
Plague:	—	Typhus, murine: *Tex. 1	1

\*Delayed report: Typhus, murine Tex. 1(1976)

**Table III**  
**Cases of Specified Notifiable Diseases: United States**  
**Weeks Ending January 22, 1977 and January 24, 1976 - 3rd Week**

AREA REPORTING	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1977	1976	1977	1977	1977	1977		
UNITED STATES .....	30	3	6,062	-	-	9	10	1	262	602	175	5	11
NEW ENGLAND .....	-	-	561	-	-	-	1	-	14	19	14	-	-
Maine .....	-	-	2	-	-	-	-	-	2	-	-	-	-
New Hampshire* .....	-	-	4	-	-	-	-	-	-	1	2	-	-
Vermont .....	-	-	10	-	-	-	-	-	-	1	-	-	-
Massachusetts .....	-	-	247	-	-	-	1	-	3	2	12	-	-
Rhode Island .....	-	-	136	-	-	-	-	-	3	5	-	-	-
Connecticut* .....	-	-	162	-	-	-	-	-	6	10	-	-	-
MIDDLE ATLANTIC .....	4	-	421	-	-	4	-	-	20	30	25	1	5
Upstate New York .....	-	-	262	-	-	-	-	-	1	4	-	-	2
New York City .....	-	-	48	-	-	1	-	-	4	7	6	1	3
New Jersey* .....	4	-	NN	-	-	3	-	-	14	18	19	-	-
Pennsylvania* .....	-	-	111	-	-	-	-	-	1	1	-	-	-
EAST NORTH CENTRAL .....	2	-	2,792	-	-	1	2	1	55	82	17	-	-
Ohio .....	-	-	254	-	-	-	1	1	16	37	-	-	-
Indiana .....	-	-	240	-	-	-	-	-	2	3	5	-	-
Illinois .....	-	-	468	-	-	-	-	-	10	8	-	-	-
Michigan .....	2	-	1,333	-	-	1	1	-	25	26	12	-	-
Wisconsin .....	-	-	497	-	-	-	-	-	2	8	-	-	-
WEST NORTH CENTRAL .....	5	1	1,036	-	-	-	2	-	30	52	3	-	-
Minnesota .....	-	-	-	-	-	-	1	-	16	11	-	-	-
Iowa* .....	-	-	349	-	-	-	-	-	-	3	-	-	-
Missouri .....	5	1	31	-	-	-	1	-	5	6	3	-	-
North Dakota* .....	-	-	18	-	-	-	-	-	-	1	-	-	-
South Dakota .....	-	-	27	-	-	-	-	-	-	-	-	-	-
Nebraska .....	-	-	31	-	-	-	-	-	3	4	-	-	-
Kansas .....	-	-	580	-	-	-	-	-	6	27	-	-	-
SOUTH ATLANTIC .....	8	-	247	-	-	1	2	-	41	104	13	1	2
Delaware .....	-	-	7	-	-	-	-	-	-	-	-	-	-
Maryland .....	-	-	24	-	-	-	1	-	6	11	5	1	1
District of Columbia .....	-	-	4	-	-	-	-	-	-	-	-	-	-
Virginia .....	2	-	22	-	-	-	-	-	12	8	4	-	1
West Virginia .....	-	-	147	-	-	-	-	-	1	13	-	-	-
North Carolina* .....	1	-	NN	-	-	1	1	-	4	8	1	-	-
South Carolina .....	-	-	25	-	-	-	-	-	-	2	1	-	-
Georgia* .....	-	-	-	-	-	-	-	-	-	27	-	-	-
Florida .....	5	-	18	-	-	-	-	-	18	35	2	-	-
EAST SOUTH CENTRAL .....	-	1	78	-	-	2	-	-	7	26	1	-	-
Kentucky* .....	-	1	44	-	-	1	-	-	-	-	-	-	-
Tennessee .....	-	-	NN	-	-	-	-	-	7	21	-	-	-
Alabama* .....	-	-	11	-	-	-	-	-	-	2	1	-	-
Mississippi .....	-	-	23	-	-	1	-	-	-	3	-	-	-
WEST SOUTH CENTRAL .....	4	1	370	-	-	-	-	-	22	114	53	1	1
Arkansas* .....	-	-	1	-	-	-	-	-	1	8	2	-	-
Louisiana .....	-	-	NN	-	-	-	-	-	1	18	5	-	-
Oklahoma* .....	1	-	55	-	-	-	-	-	2	7	3	-	-
Texas* .....	3	1	314	-	-	-	-	-	18	81	43	1	1
MOUNTAIN .....	1	-	176	-	-	-	-	-	6	46	10	-	1
Montana .....	-	-	32	-	-	-	-	-	-	9	2	-	-
Idaho .....	-	-	10	-	-	-	-	-	1	6	1	-	-
Wyoming .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado* .....	1	-	109	-	-	-	-	-	5	6	1	-	-
New Mexico .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Arizona .....	-	-	NN	-	-	-	-	-	-	24	1	-	1
Utah .....	-	-	11	-	-	-	-	-	-	1	5	-	-
Nevada .....	-	-	14	-	-	-	-	-	-	-	-	-	-
PACIFIC .....	6	-	381	-	-	1	3	-	67	129	39	2	2
Washington .....	1	-	371	-	-	-	-	-	-	6	3	-	-
Oregon .....	-	-	-	-	-	-	-	-	3	16	6	-	-
California* .....	5	-	-	-	-	1	3	-	64	106	30	2	2
Alaska .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Hawaii .....	-	-	10	-	-	-	-	-	-	1	-	-	-
Guam* .....	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-
Puerto Rico .....	-	-	14	-	-	-	-	-	1	14	-	-	-
Virgin Islands .....	-	-	-	-	-	-	-	-	-	-	-	-	-

NA: Not available  
 NN: Not notifiable  
 \*Delayed report:  
 Aseptic meningitis: Pa. add 2, Ky. delete 2 (1976), Pa. add 1, (1977); Brucellosis: Iowa add 1, (1976); Chickenpox: Pa. add 4, Guam add 3 (1976), N. Hamp. add 21, Pa. add 78, Ala. add 57, Calif. add 6 (1977); Encephalitis: Conn. add 1, Pa. add 1 (1978); Hep. B: Pa. add 29, N. Car. add 1, Ark. add 3, Okla. add 1, Colo. add 4 (1976), N.J. add 17 (1977); Hep. A: Pa. add 49, N. Dak. add 1, N. Car. delete 1, Ga. add 7, Ark. add 6, Colo. add 2 (1976) N.J. add 12, Tex. delete 1 (1977); Hep. unsp.: Pa. add 11, Colo. add 2 (1976), N.J. add 19 (1977)

Table III-Continued  
 Cases of Specified Notifiable Diseases: United States  
 Weeks Ending January 22, 1977 and January 24, 1976 - 3rd Week

REPORTING AREA	MEASLES (Rubella)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1977	CUMULATIVE		1977	CUMULATIVE		1977	CUM. 1977	1977	1977	CUM. 1977	CUM. 1977
		1977	1976		1977	1976						
UNITED STATES .....	772	2,562	1,171	32	107	84	578	1,410	14	171	510	2
NEW ENGLAND .....	5	27	3	2	4	7	32	76	-	7	26	-
Maine .....	1	1	-	-	-	-	-	-	-	1	1	-
New Hampshire .....	-	-	-	1	1	-	-	1	-	-	-	-
Vermont .....	3	24	-	-	-	-	-	-	-	-	-	-
Massachusetts .....	-	-	-	-	-	3	7	8	-	2	11	-
Rhode Island .....	-	-	2	-	-	1	-	7	-	-	6	-
Connecticut .....	1	2	1	1	3	3	25	60	-	4	8	-
MIDDLE ATLANTIC .....	99	448	120	2	17	9	29	93	4	13	70	-
Upstate New York .....	13	30	65	1	6	4	6	21	2	2	4	-
New York City .....	3	7	10	1	4	3	14	40	1	5	8	-
New Jersey .....	-	7	8	-	6	1	7	22	-	-	44	-
Pennsylvania .....	83	404	37	-	1	1	2	10	1	6	14	-
EAST NORTH CENTRAL .....	355	933	331	1	11	10	187	418	1	83	224	-
Ohio .....	1	28	2	-	7	1	46	107	-	5	41	-
Indiana .....	199	505	65	-	-	-	10	27	-	38	104	-
Illinois .....	37	69	11	-	1	-	19	35	1	4	9	-
Michigan .....	18	66	48	-	2	5	45	101	-	22	43	-
Wisconsin .....	100	265	203	1	1	4	67	148	-	14	27	-
WEST NORTH CENTRAL .....	149	667	25	-	4	4	181	408	-	13	36	1
Minnesota .....	34	41	1	-	-	2	-	-	-	-	1	-
Iowa .....	75	458	2	-	-	-	66	254	-	10	18	-
Missouri .....	-	2	-	-	3	1	11	31	-	1	4	1
North Dakota .....	-	2	1	-	-	-	-	2	-	-	-	-
South Dakota .....	-	-	-	-	-	-	-	-	-	-	-	-
Nebraska .....	1	1	16	-	-	-	1	1	-	-	-	-
Kansas .....	39	163	5	-	1	1	103	120	-	2	13	-
SOUTH ATLANTIC .....	11	27	171	7	21	17	18	57	-	2	6	-
Delaware .....	-	1	3	-	1	-	2	10	-	-	-	-
Maryland .....	-	-	57	1	2	1	2	4	-	-	-	-
District of Columbia .....	-	-	-	-	-	-	-	2	-	-	-	-
Virginia .....	7	15	1	1	1	-	8	14	-	-	-	-
West Virginia .....	4	11	28	2	4	-	4	15	-	1	3	-
North Carolina .....	-	-	-	1	3	5	-	3	-	-	1	-
South Carolina .....	-	-	-	-	3	1	2	2	-	1	2	-
Georgia .....	-	-	-	2	2	-	-	1	-	-	-	-
Florida .....	-	-	82	-	5	10	-	6	-	-	-	-
EAST SOUTH CENTRAL .....	7	44	66	7	12	6	26	91	1	9	54	-
Kentucky .....	2	8	66	2	5	1	6	7	-	-	3	-
Tennessee .....	5	36	-	5	6	3	17	77	-	9	50	-
Alabama .....	-	-	-	-	1	2	3	7	-	-	1	-
Mississippi .....	-	-	-	-	-	-	-	-	1	-	-	-
WEST SOUTH CENTRAL .....	44	76	116	7	22	11	65	140	3	8	14	1
Arkansas .....	-	1	-	-	-	-	-	-	-	-	-	-
Louisiana .....	-	-	1	4	14	1	4	11	-	-	-	-
Oklahoma .....	3	5	106	-	-	2	24	62	-	1	2	-
Texas .....	41	70	9	3	8	8	37	67	3	7	12	1
MOUNTAIN .....	16	110	274	-	1	4	15	40	1	5	13	-
Montana .....	9	95	-	-	-	1	-	-	-	3	3	-
Idaho .....	4	11	34	-	1	-	11	20	-	-	-	-
Wyoming .....	-	-	-	-	-	-	-	-	-	1	1	-
Colorado .....	1	1	2	-	-	-	3	7	-	-	3	-
New Mexico .....	-	-	-	-	-	-	-	-	-	-	-	-
Arizona .....	-	-	2	-	-	2	-	-	-	-	-	-
Utah .....	-	1	236	-	-	1	-	12	1	1	6	-
Nevada .....	2	2	-	-	-	-	1	1	-	-	-	-
PACIFIC .....	86	230	65	6	15	16	25	87	4	31	67	-
Washington .....	5	9	2	2	2	4	9	20	1	9	20	-
Oregon .....	1	6	-	-	-	1	2	10	-	-	2	-
California .....	80	215	61	4	8	11	14	52	3	22	45	-
Alaska .....	-	-	-	-	4	-	-	4	-	-	-	-
Hawaii .....	-	-	2	-	1	-	-	1	-	-	-	-
Guam .....	NA	-	4	-	-	1	NA	-	NA	NA	-	-
Puerto Rico .....	10	31	5	-	-	1	6	36	-	-	2	-
Virgin Islands .....	-	-	-	-	-	-	-	-	-	-	-	-

NA: Not available

\*Delayed reports: Measles: N. Car. delete 1, Colo. add 20 (1976); Men. Inf.: Pa. add 1 (1976), Pa. add 1 (1977); Mumps: Ala. add 10 (1977); Rubella: Tex. delete 3 (1976)

Table III-Continued  
 Cases of Specified Notifiable Diseases: United States  
 Weeks Ending January 22, 1977 and January 24, 1976 - 3rd Week

REPORTING AREA	TUBERCULOSIS		TULA-REMI A	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
	1977	CUM. 1977	CUM. 1977	1977	CUM. 1977	1977	CUM. 1977	GONORRHEA		SYPHILIS (Pri. & Sec.)		CUM. 1977		
								1977	CUMULATIVE		1977		CUMULATIVE	
									1977	1976			1977	1976
UNITED STATES .....	518	1,123	7	4	15	-	5	18,806	55,488	58,489	489	1,293	1,522	130
NEW ENGLAND .....	18	25	-	-	-	-	-	595	1,402	1,775	15	41	38	-
Maine .....	-	2	-	-	-	-	-	32	110	139	-	-	-	-
New Hampshire .....	1	1	-	-	-	-	-	20	56	32	1	1	-	-
Vermont .....	1	1	-	-	-	-	-	10	28	38	-	1	1	-
Massachusetts .....	6	6	-	-	-	-	-	339	585	834	8	27	23	-
Rhode Island .....	2	5	-	-	-	-	-	24	68	121	-	-	2	-
Connecticut .....	8	10	-	-	-	-	-	170	555	611	6	12	12	-
MIDDLE ATLANTIC .....	20	89	-	-	6	-	-	1,851	7,443	5,210	85	190	274	-
Upstate New York .....	3	5	-	-	-	-	-	270	491	635	12	12	10	-
New York City* .....	NA	27	-	-	6	-	-	848	4,536	2,920	53	121	199	-
New Jersey .....	17	57	-	-	-	-	-	256	810	680	13	31	35	-
Pennsylvania .....	NA	-	-	-	-	-	-	477	1,606	1,375	7	26	30	-
EAST NORTH CENTRAL .....	109	169	2	2	2	-	-	2,795	7,889	9,050	50	158	138	5
Ohio* .....	NA	-	1	1	1	-	-	962	2,578	2,441	11	39	27	-
Indiana* .....	4	17	-	-	-	-	-	170	376	480	2	5	5	-
Illinois .....	50	92	-	-	-	-	-	735	2,594	3,367	30	94	81	-
Michigan .....	51	51	-	1	1	-	-	677	1,708	1,859	3	14	17	-
Wisconsin .....	4	9	1	-	-	-	-	251	633	903	4	6	8	5
WEST NORTH CENTRAL .....	28	50	1	1	2	-	2	935	3,162	3,074	5	25	39	22
Minnesota .....	-	9	-	1	1	-	-	196	507	670	-	7	10	13
Iowa .....	4	8	-	-	-	-	-	74	360	453	1	2	2	5
Missouri .....	19	23	1	-	1	-	2	349	1,489	1,134	2	10	22	-
North Dakota .....	1	1	-	-	-	-	-	17	41	48	-	-	-	4
South Dakota .....	-	1	-	-	-	-	-	36	88	97	-	-	-	-
Nebraska .....	1	1	-	-	-	-	-	94	221	243	-	1	3	-
Kansas .....	3	7	-	-	-	-	-	169	456	429	2	5	2	-
SOUTH ATLANTIC .....	136	380	2	1	1	-	-	4,343	12,521	13,404	143	391	457	18
Delaware* .....	-	-	-	-	-	-	-	57	222	247	1	1	7	-
Maryland* .....	23	56	-	-	-	-	-	419	1,379	1,849	6	15	38	-
District of Columbia .....	5	11	-	-	-	-	-	249	697	823	19	44	36	-
Virginia .....	18	65	-	-	-	-	-	95	1,110	1,632	13	32	48	1
West Virginia .....	7	16	-	-	-	-	-	72	167	181	-	-	1	-
North Carolina* .....	25	62	-	-	-	-	-	750	2,020	1,888	23	63	73	-
South Carolina .....	7	33	-	-	-	-	-	514	1,281	1,239	5	22	27	-
Georgia* .....	7	47	2	-	-	-	-	829	2,654	2,488	21	72	52	17
Florida .....	44	90	-	1	1	-	-	1,358	2,991	3,057	55	142	175	-
EAST SOUTH CENTRAL .....	45	81	-	-	-	-	2	1,266	3,774	5,065	20	38	53	1
Kentucky* .....	21	21	-	-	-	-	-	189	540	783	4	7	5	-
Tennessee .....	12	37	-	-	-	-	2	689	2,052	1,954	5	15	25	1
Alabama* .....	7	18	-	-	-	-	-	216	664	1,289	2	5	12	-
Mississippi .....	5	5	-	-	-	-	-	172	518	1,039	9	11	11	-
WEST SOUTH CENTRAL .....	56	98	1	-	-	-	1	2,947	8,279	10,390	63	168	193	57
Arkansas* .....	3	10	-	-	-	-	-	96	528	552	-	3	1	-
Louisiana .....	22	42	-	-	-	-	-	351	1,057	1,299	13	40	45	-
Oklahoma* .....	4	4	-	-	-	-	-	201	582	845	3	6	9	17
Texas* .....	27	42	1	-	-	-	1	2,299	6,112	7,694	47	119	138	40
MOUNTAIN .....	15	21	1	-	-	-	-	753	2,215	2,304	8	21	25	3
Montana .....	-	-	1	-	-	-	-	24	135	95	-	-	-	3
Idaho .....	3	3	-	-	-	-	-	33	113	103	1	2	-	-
Wyoming .....	2	2	-	-	-	-	-	1	59	48	1	3	-	-
Colorado .....	5	5	-	-	-	-	-	207	521	546	3	7	12	-
New Mexico .....	-	-	-	-	-	-	-	86	253	561	-	-	-	-
Arizona .....	4	10	-	-	-	-	-	247	695	594	3	8	8	-
Utah .....	-	-	-	-	-	-	-	39	112	167	-	-	-	-
Nevada .....	1	1	-	-	-	-	-	116	327	190	-	1	5	-
PACIFIC .....	91	210	-	-	4	-	-	3,321	8,803	8,217	100	261	305	24
Washington .....	-	-	-	-	-	-	-	178	681	750	-	-	-	-
Oregon .....	5	7	-	-	-	-	-	329	626	633	5	11	11	-
California .....	73	165	-	-	4	-	-	2,681	7,096	6,357	95	247	290	22
Alaska .....	-	-	-	-	-	-	-	55	221	280	-	-	-	2
Hawaii .....	13	38	-	-	-	-	-	78	179	197	-	3	4	-
Guam* .....	NA	-	-	NA	-	NA	-	NA	-	31	NA	-	-	-
Puerto Rico .....	7	27	-	-	-	-	-	59	165	143	10	32	13	1
Virgin Islands .....	-	-	-	-	-	-	-	4	12	22	-	-	12	-

NA: Not available  
 \*Delayed reports: TB: Ohio add 4, Dela. add 3, Md. add 21, N. Car. delete 3, Ga. add 2, Ky. delete 1, Guam add 1 (1978), NYC add 27, N. Car. delete 1, Ala. add 18, Okla add 3 (1977); Typhoid fever: Tex. add 1 (1978); RMSF: N. Car. delete 1, Texas add 1 (1978); GC: Indiana add 592, Guam add 7 (1978); Md. add 16, civ. add 20 mil., Ala. add 288 civ., add 5 mil (1977); Syphilis: Ind. add 13 (1978), Md. add 5, Ky. delete 1, Ala. add 2 civ., add 1 mil. (1977); An. rabies: Ark. add 4 (1976)

Table IV  
Deaths in 121 United States Cities\*  
Week Ending January 22, 1977 - 3rd Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES	REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year			ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	
<b>NEW ENGLAND</b> .....	755	505	191	24	19	37	<b>SOUTH ATLANTIC</b> ...	1,196	716	325	69	54	52
Boston, Mass. ....	217	134	57	7	8	7	Atlanta, Ga. ....	155	91	45	10	5	11
Bridgeport, Conn. ....	45	33	11	1	—	—	Baltimore, Md. ....	145	87	39	7	6	5
Cambridge, Mass. ....	32	21	8	3	—	4	Charlotte, N. C. ....	60	30	17	7	3	4
Fall River, Mass. ....	29	23	6	—	—	—	Jacksonville, Fla. ....	82	43	24	5	7	5
Hartford, Conn. ....	47	32	12	2	1	2	Miami, Fla. ....	112	63	35	5	7	2
Lowell, Mass. ....	23	21	1	1	—	—	Norfolk, Va. ....	64	41	14	2	5	2
Lynn, Mass. ....	18	13	4	1	—	1	Richmond, Va. ....	81	41	28	8	2	6
New Bedford, Mass. ....	34	27	7	—	—	—	Savannah, Ga. ....	64	44	12	3	4	6
New Haven, Conn. ....	57	28	23	3	3	—	St. Petersburg, Fla. ....	96	80	11	1	2	2
Providence, R.I. ....	71	41	23	1	4	9	Tampa, Fla. ....	84	58	17	3	3	3
Somerville, Mass. ....	17	14	3	—	—	1	Washington, D. C. ....	217	113	74	17	10	6
Springfield, Mass. ....	53	34	15	2	1	5	Wilmington, Del. ....	36	25	9	1	—	—
Waterbury, Conn. ....	41	29	10	—	1	2	<b>EAST SOUTH CENTRAL</b>	838	500	221	45	40	45
Worcester, Mass. ....	71	55	11	3	1	6	Birmingham, Ala. ....	75	39	22	4	8	1
<b>MIDDLE ATLANTIC</b> ...	3,225	2,071	802	185	98	143	Chattanooga, Tenn. ....	69	46	19	1	1	5
Albany, N. Y. ....	53	32	11	2	2	1	Knoxville, Tenn. ....	47	33	11	2	—	—
Allentown, Pa. ....	19	12	6	—	—	—	Louisville, Ky. ....	140	80	41	7	10	18
Buffalo, N. Y. ....	110	75	29	3	—	6	Memphis, Tenn. ....	238	140	63	15	4	5
Camden, N. J. ....	34	19	11	2	—	—	Mobile, Ala. ....	68	33	21	5	6	2
Elizabeth, N. J. ....	35	27	8	—	—	—	Montgomery, Ala. ....	48	36	6	3	2	5
Erie, Pa. ....	38	31	3	1	3	8	Nashville, Tenn. ....	153	93	38	8	9	9
Jersey City, N. J. ....	60	41	12	3	2	2	<b>WEST SOUTH CENTRAL</b>	1,479	840	404	103	62	67
Newark, N. J. ....	94	55	20	12	6	6	Austin, Tex. ....	50	34	8	2	2	4
New York City, N. Y. ....	1,625	1,036	397	110	50	67	Baton Rouge, La. ....	75	38	29	4	2	6
Paterson, N. J. ....	39	26	9	2	1	1	Corpus Christi, Tex. ....	46	28	10	2	4	3
Philadelphia, Pa. ....	499	299	141	31	18	24	Dallas, Tex. ....	221	141	49	12	12	16
Pittsburgh, Pa. ....	187	121	51	4	7	10	El Paso, Tex. ....	56	29	19	3	2	8
Reading, Pa. ....	35	31	3	1	—	1	Fort Worth, Tex. ....	118	74	25	5	4	—
Rochester, N. Y. ....	140	105	22	6	5	8	Houston, Tex. ....	382	172	122	46	18	9
Schenectady, N. Y. ....	22	11	10	1	—	1	Little Rock, Ark. ....	68	35	23	3	3	4
Scranton, Pa. ....	36	25	10	1	—	—	New Orleans, La. ....	173	106	49	6	8	1
Syracuse, N. Y. ....	111	66	32	5	4	5	San Antonio, Tex. ....	145	86	38	12	4	5
Trenton, N. J. ....	38	25	13	—	—	2	Shreveport, La. ....	55	35	11	5	—	4
Utica, N. Y. ....	17	8	8	—	—	—	Tulsa, Okla. ....	90	62	21	3	3	7
Yonkers, N. Y. ....	33	26	6	1	—	1	<b>MOUNTAIN</b> .....	555	346	142	38	12	22
<b>EAST NORTH CENTRAL</b>	2,539	1,555	683	130	89	90	Albuquerque, N. Mex. ....	54	37	8	6	3	6
Akron, Ohio ....	47	33	10	2	—	—	Colorado Springs, Colo. ....	42	26	11	3	—	5
Canton, Ohio ....	44	30	9	—	2	2	Denver, Colo. ....	127	74	39	7	—	3
Chicago, Ill. ....	607	372	146	36	33	20	Las Vegas, Nev. ....	23	10	10	2	—	3
Cincinnati, Ohio ....	208	123	57	9	9	5	Ogden, Utah ....	14	7	4	3	—	1
Cleveland, Ohio ....	204	117	68	12	1	2	Phoenix, Ariz. ....	144	94	34	8	4	1
Columbus, Ohio ....	138	77	46	6	6	16	Pueblo, Colo. ....	28	23	5	—	—	2
Dayton, Ohio ....	120	71	41	4	1	5	Salt Lake City, Utah ....	45	29	9	4	3	—
Detroit, Mich. ....	384	231	103	22	14	7	Tucson, Ariz. ....	78	46	22	5	2	1
Evansville, Ind. ....	60	43	11	3	3	7	<b>PACIFIC</b> .....	1,694	1,073	396	114	47	73
Fort Wayne, Ind. ....	51	28	18	1	—	4	Berkeley, Calif. ....	27	18	3	4	1	1
Gary, Ind. ....	15	3	10	1	1	—	Fresno, Calif. ....	60	32	17	2	4	1
Grand Rapids, Mich. ....	59	42	11	3	3	1	Glendale, Calif. ....	41	30	7	3	—	4
Indianapolis, Ind. ....	150	91	44	7	2	4	Honolulu, Hawaii ....	62	32	20	5	2	2
Madison, Wis. ....	30	19	7	1	3	4	Long Beach, Calif. ....	101	61	31	4	1	3
Milwaukee, Wis. ....	135	90	32	8	—	3	Los Angeles, Calif. ....	490	322	99	37	13	24
Peoria, Ill. ....	43	31	5	1	5	4	Oakland, Calif. ....	78	48	22	5	2	4
Rockford, Ill. ....	47	30	11	4	2	2	Pasadena, Calif. ....	39	32	6	—	1	—
South Bend, Ind. ....	35	18	15	1	1	3	Portland, Oreg. ....	143	90	32	12	1	2
Toledo, Ohio ....	93	59	22	6	2	—	Sacramento, Calif. ....	83	51	19	5	5	2
Youngstown, Ohio ....	69	47	17	3	1	1	San Diego, Calif. ....	124	67	32	13	6	4
<b>WEST NORTH CENTRAL</b>	800	523	173	33	43	25	San Francisco, Calif. ....	163	97	47	11	4	1
Des Moines, Iowa ....	71	50	15	2	2	2	San Jose, Calif. ....	57	37	15	4	1	8
Duluth, Minn. ....	27	22	3	1	—	1	Seattle, Wash. ....	146	96	33	7	3	9
Kansas City, Kans. ....	30	19	8	1	1	1	Spokane, Wash. ....	44	34	5	1	3	5
Kansas City, Mo. ....	147	106	28	2	7	5	Tacoma, Wash. ....	36	26	8	1	—	3
Lincoln, Nebr. ....	36	20	12	3	—	3	<b>TOTAL</b> .....	13,081	8,129	3,337	741	464	554
Minneapolis, Minn. ....	99	73	17	1	5	1	Expected Number	12,687	7,812	3,265	778	413	522
Omaha, Nebr. ....	85	49	25	1	7	—							
St. Louis, Mo. ....	160	91	42	9	12	2							
St. Paul, Minn. ....	68	48	9	6	4	—							
Wichita, Kans. ....	77	45	14	7	5	10							

\*By place of occurrence and week of filing certificate. Excludes fetal deaths.

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*Staphylococcal Food Poisoning — Continued*

machines on July 28. One of the 3 also was hospitalized.

Because the vending machine company routinely prepared hot food items the day before sale, a questionnaire was given to food preparation employees about illness and food consumption at work on July 27. Two out of 10 evening employees reported illnesses characterized by abrupt onset of nausea and vomiting at 10:30 PM and lasting a few hours. They had eaten Greek spaghetti that evening at 6 PM. Six of 8 other evening employees also ate Greek spaghetti but did not become ill with typical symptomatology. On the regular day shift, only 3 of 15 individuals had eaten Greek spaghetti; none of them had become ill.

Coagulase-positive *Staphylococcus aureus*, phage type 85, was cultured from the stool of the 2 hospitalized patients, the hands of 1 of the 5 foodhandlers preparing Greek spaghetti, the Greek spaghetti from 2 vending machines, and from the same brand of raw meat used in the Greek spaghetti.

*S. aureus* counts on Greek spaghetti recovered on July 28 at a temperature of 60 F from a vending machine at a Denver business were greater than a million organisms per gram. Greek spaghetti taken the same day from other vending machines at 160 F was culture-negative. Other hot food items prepared on the same day taken from several machines on July 28 were also found to be contaminated with *S. aureus*, phage type 85, in smaller numbers. This same organism was also isolated from chili made the following day. Enterotoxin studies by the Food and Drug Administration laboratories found type D enterotoxin in samples of the implicated spaghetti taken the day of the outbreak from the machine at 160 F and in samples taken from another unheated machine with a temperature of 60 F.

However, all samples of staphylococcus type 85 were found to produce enterotoxin type A. Type D enterotoxin was also recovered from the chili samples taken the day of outbreak at the food preparation area of the vending machine company.

The infected foodhandler had several blisters and a bandage on his hand when the cultures were taken. He handled the raw meat before cooking and, later in the day, helped portion cooked meat onto the spaghetti. In this food operation, bare hands were routinely used for preparing cooked meat. An evaluation by Tri-County District Health Department sanitarians revealed that the central commissary refrigerator was inadequate to cool foods quickly. Many hot food items were found to be at a temperature favorable for growth of *S. aureus* as long as 8 hours.

**Note:** This investigation shows that documentation of a small number of cases may well reveal an extensive problem from a commercial product requiring public health control measures. The widespread finding of *S. aureus*, phage type 85, in this outbreak indicates that there was extensive cross-contamination because of poor foodhandling practices. The presence of type D enterotoxin suggests that the original toxin-producing organism was no longer recoverable at the time of the outbreak because other staphylococcal strains had overgrown the unidentified toxin-producing strain.

*Reported by S Johnson, MD, J Martyny, BS, Tri-County Health Dept, Denver; J Humphreys, BA, P Mayfarth, BA, J Stambaugh, BS, TM Vernon, MD, State Epidemiologist, Colorado Dept of Health, in Colorado Disease Bulletin 4(41), 1976; Div of Microbiology, Food and Drug Administration, Washington, DC; Bacteriology Div, Bur of Laboratories, and Field Services Div, Bur of Epidemiology, CDC.*

**Follow-up on Serogroup A Meningococcal Disease — Alaska, Oregon**

**Alaska:** Since February 1976, 7 confirmed cases and 1 suspect case of serogroup A meningococcal meningitis or septicemia have been reported to the Alaska State Department of Health and Social Services. Five confirmed cases and the suspect case have been previously described (1). Since then, 2 confirmed cases occurred in Anchorage adults in November who were heavy users of alcohol and who frequented a downtown section of Anchorage with many characteristics of a skid row area. These additional reports bring the total number of cases in this section of Anchorage to 4 confirmed and 1 suspect. Because of the high attack rate (5 cases in an estimated 500 persons) and the continuing occurrence of cases, the municipal and state health departments initiated an immunization program. By the end of December over 300 doses of group A meningococcal vaccine had been administered. No new cases have been reported since November.

**Oregon:** Since January 1976, 5 confirmed cases of serogroup A meningococcal meningitis or septicemia have been

reported in Portland. Four cases have been previously described (2). Since then, a case occurred in June in a man who lived a short distance from skid row and frequently drank in bars in the area. Because of the high attack rate (4 cases in an estimated 4,500 persons) and the continuing occurrence of cases, the Multnomah County Health Department initiated an immunization program. By the end of December, 1,600 doses of group A meningococcal vaccine had been administered. No new cases have been reported since June.

*Reported by A Beltz, D Pfanner, Anchorage Municipal Health Dept; JP Middaugh, MD, Acting State Epidemiologist, F Pauls, PhD, RI Fraser, MD, Alaska State Dept of Health and Social Services; J Berg, PHN, J Furlong, PHN, D Rucke, PHN, H Tilson, MD, Multnomah County Health Dept; JA Googins, MD, State Epidemiologist, E Press, MD, Oregon State Health Division; Field Services Div, Special Pathogens Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.*

**References**

1. *MMWR* 25(43):341-342, 1976
2. *MMWR* 25(15):123, 1976

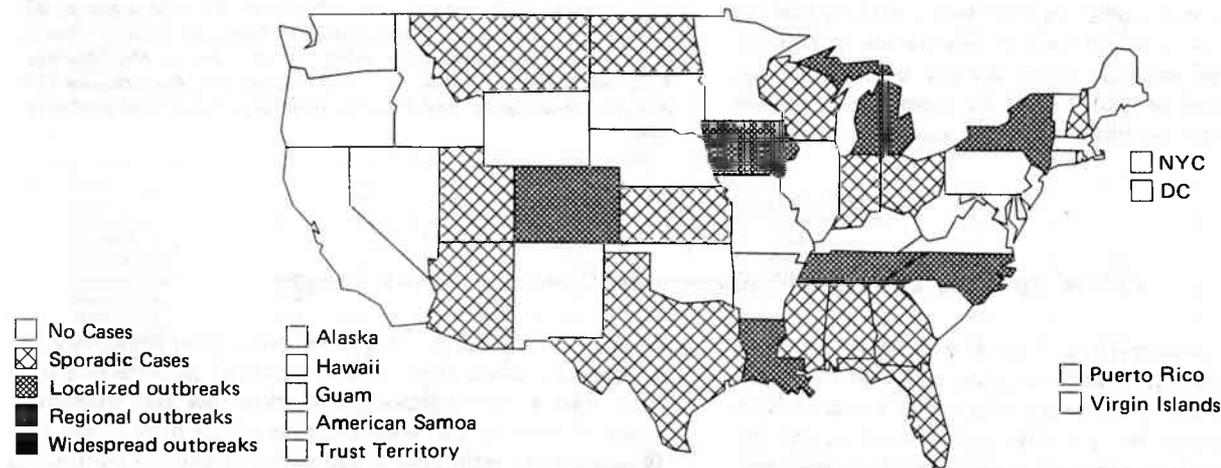
## Current Trends

### Influenza – Worldwide

**United States:** This season's first confirmed outbreak of influenza was reported the week ending January 20 from Vanderbilt University in Nashville, Tennessee. Over the past 2 weeks patient visits to the student health center have greatly increased because of influenza-like illness, and physician reports of cases of influenza-like illness in the Nashville area have doubled. Influenza-B virus was isolated from 22 of 27 cultures obtained from ill patients the week ending January 14. Confirmed influenza-B outbreaks also were reported at 2 elementary schools in northern Louisiana, where absenteeism reached over 30%. Influenza-B virus was isolated from 2 specimens obtained on January 17. Additional outbreaks of influenza-like illness associated with school absenteeism of 30% to 50% were reported from New York, North Carolina, Colorado, Michigan, and Iowa, and laboratory tests are pending.

Figure 2 reflects the extent of influenza-like illness in the United States. In this map a localized outbreak is defined as an outbreak at 1 institution, with no evidence of communitywide involvement; a regional outbreak is defined as influenza outbreaks recognized in counties that represent less than 50% of the state's population; a widespread outbreak is defined as influenza outbreaks recognized in counties that represent more than 50% of the state's population.

FIGURE 2. Extent of Influenza-like activity in the United States, January 15, 1977



Pneumonia and influenza mortality rates have remained in the expected range for all regions. Two close contacts of a Wisconsin boy who had confirmed A/New Jersey/76 influenza had serologic evidence of infection with the same strain (MMWR 26[3]) and are the first documented cases of probable person-to-person spread of the A/New Jersey/76 virus since February 1976. No additional isolates of A/New Jersey/76 have been reported. One influenza A/Victoria/75 isolate was made in North Carolina from a 41-year-old man with clinical illness on January 10.

Reported by F Henderson, MD, Dept of Pediatrics, School of Medicine, J Huang, Virology Laboratory, University of North Carolina; MP Hines, DVM, State Epidemiologist, North Carolina Div of Health Services; NS Hayner, MD, State Epidemiologist, Michigan Dept of Public Health; D Lyman, MD, State Epidemiologist, New York Dept of Health; TM Vernon, MD, State Epidemiologist, Colorado Dept of Health; LA Wintermeyer, MD, State Epidemiologist, Iowa Dept of Health; National Influenza Immunization Program; and Virology Div, Bur of Laboratories, CDC.

**Worldwide:** Since mid-December, sporadic cases and outbreaks of influenza-like illness have been reported in Tokyo, Japan, with no substantial increase in school absenteeism. Several isolates of B/Hong Kong/5/72-like virus have been made.

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