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MORBIDITY AND MORTALITY WEEKLY REPORT

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SEP 30 1976

Epidemiologic Notes and Reports

Turkey-associated Psittacosis — Nebraska

An outbreak of psittacosis occurred in employees of a Nebraska poultry processing plant in June 1976. Twenty-eight of the plant's 98 employees were affected; 9 were hospitalized. The outbreak was associated with processing turkeys that had been raised in Texas.

All the patients had varying combinations of fever (up to 107 F), chills, diaphoresis, headache, body aches, anorexia, and a feeling of weakness. Less frequently reported were cough (usually dry and nonproductive), photophobia, and epistaxis. Of 19 patients who had chest X-rays, 13 had evidence of pulmonary infiltrates consistent with psittacosis. The mean duration of illness was 9 days, and the mean hospital stay for 7 of the 9 hospitalized patients was 8 days.

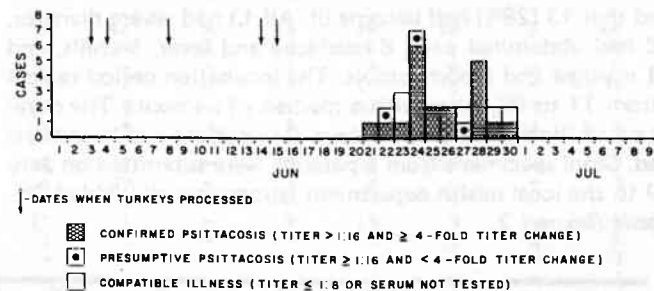
Acute and convalescent serum specimens, obtained 2 to 3 weeks apart from 27 of the patients, were tested for complement fixing antibody to chlamydia group antigens. Twenty had 4-fold or greater titer rises; 3 had titers $\geq 1:16$ which were stable or had less than a 4-fold change, and 4 had titers $\leq 1:8$.

The cases occurred June 21-30, suggesting exposure over a short period of time. Both turkeys and chickens are slaughtered at the plant. Turkeys were slaughtered on 5 days in June before the outbreak (Figure 1). Since the incubation period for psittacosis is generally 4-15 days, those turkeys processed June 14 and 15 were suspected as the source.

All 28 patients had worked the week of June 14, and all but 1 had worked on June 14 or 15. Four patients were new employees who first started working that week. None of 15 employees who worked the week before or the week after June 14 reported illness. The attack rate in employees who worked the week of June 14 was significantly greater than in employees who did not. (Fisher's exact test, 1-tailed $p < 0.01$).

All the turkeys processed on these dates were retired breeder birds from a single Texas flock. Before shipment, the implicated flock had been inspected for clinical signs of psittacosis; 15 of 6,000 hens and 5 of 500 toms were tested by direct complement fixation of chlamydial antibodies. No evidence of psittacosis infection was found. Serologic testing on July 9 of 38 birds used to replace the breeder stock also failed to detect infection. However, 2 hens which had not been shipped with the group of breeders processed on June 14-15 were seropositive (1:32 titers), and chlamydia were isolated from their tissues by mouse inoculation.

FIGURE 1. Confirmed and suspected psittacosis cases in employees of a poultry processing plant, Nebraska, June 1976



The attack rate by work department was not significantly different in the group of 95 employees who worked on the 2 days June 14-15. There was no correlation with degree or duration of direct exposure to turkey tissue, suggesting that the infections were the result of aerosol transmission. Since the evisceration department was under positive air-pressure in relation to other plant areas, an out-flow of air to all other departments resulted.

Reported by WH Northwall, MD, Good Samaritan Hospital, Kearney, Nebraska; G Hosek, PA Stoesz, MD, State Epidemiologist, Nebraska Dept of Health; JE Grimes, PhD, Texas A&M University, College Station, Texas; CR Webb, Jr, MD, Acting State Epidemiologist, Texas Dept of Health Resources; and Bacterial Zoonoses Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: This is the second turkey-associated psittacosis outbreak at this plant. In June 1974, 20 of 117 employees had illnesses clinically compatible with psittacosis; 12 of these cases were serologically confirmed (1). The 1974 outbreak also was associated with processing of retired breeder turkeys from Texas.

Following outbreaks in 1974 of psittacosis in employees of 5 turkey processing plants, including that in Nebraska, the U.S. Department of Agriculture and state and local agriculture and health personnel implemented a pre-slaughter screening and control program for turkeys in Texas (2). No further human cases associated with birds from Texas occurred in 1974, and the program was discontinued in August of that year. The program was reimplemented in the period May-December 1975 following the diagnosis of psittacosis in a Texas veterinary diagnostician and in 5 Texas turkey flocks.

Psittacosis — Continued

Although the control program was not officially operative in 1976, the turkey flock implicated as the source of infection in the current outbreak was inspected and serologically screened on a voluntary basis. Whether the failure to detect infection in the flock was due to the small number

of birds serologically screened or some other factor is uncertain.

References:

1. Durfee PT, Pullen MM, Currier RW, Parker RL: Human psittacosis associated with commercial processing of turkeys. *J Am Vet Med Assoc* 167:804-808, 1975
2. Report of the Committee on Transmissible Diseases of Poultry, in *Proceedings of the U.S. Animal Health Association*, 2-7 Nov 1975. Portland, 1976, pp 226-234

***Shigella flexneri* Type 2 Foodborne Outbreak — Washington**

An epidemiologic investigation was initiated in Seattle when a woman reported that she and her sister had been ill for a week with diarrhea and related symptoms; the sister had been hospitalized for several days. Investigation revealed a total of 13 cases of shigellosis, all traced to food eaten 11 days earlier at a Polynesian luau, prepared for a social club by an unlicensed caterer at his home.

Histories from 46 persons who attended the luau revealed that 13 (28%) had become ill. All 13 had severe diarrhea, 6 had abdominal pain, 6 headache and fever, 5 chills, and 1 myalgia and bloody stools. The incubation period ranged from 11 to 96 hours with a median of 64 hours. The duration of illness was 3 to 10 days. One patient was hospitalized. Stool specimens from 5 patients were submitted on July 9 to the local health department laboratory; all yielded *Shigella flexneri* 2.

The caterer, who had prepared approximately 20 types of meats, salads, fruits, and vegetable dishes in his home, denied any gastrointestinal illness and was not cultured. A stool specimen taken from an 11-year-old child in the caterer's home, however, grew *Shigella flexneri* 2.

The majority of the club members eating at the luau indicated either that they had eaten some of every type of food available or that they could not recall what they had eaten. No food was available for culture. The water supply was from the municipal system.

The caterer was ordered by the health department to discontinue preparation of food for public consumption. Reported by HW Anderson, BS, RS, M Bader, MD, MPH, Epidemiologist, Seattle-King County Dept of Public Health, Seattle, Washington; S Paine, RS, and TL Nghiem, MD, DrPh, Washington State Dept of Social and Health Services; Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

(Continued on page 307)

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

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

DISEASE	38th WEEK ENDING		MEDIAN 1971-1975	CUMULATIVE, FIRST 38 WEEKS		
	September 25, 1976	September 20, 1975		September 25, 1976	September 20, 1975	MEDIAN 1971-1975
Asptic meningitis	137	192	189	2,097	2,556	2,650
Brucellosis	7	5	5	188	173	139
Chickenpox	347	285	---	147,418	117,319	---
Diphtheria	-	1	1	124	216	127
Encephalitis	44	212	38	771	1,163	1,032
{ Primary	3	4	4	206	242	221
{ Post-infectious	334	238	197	10,703	8,410	6,652
Hepatitis, Viral	637	688	1,040	24,593	25,458	37,013
{ Type B	156	166	---	6,298	5,846	---
{ Type A	15	13	13	339	306	306
{ Type unspecified	79	77	89	34,464	21,313	24,296
Malaria	28	14	15	1,175	1,097	1,072
Measles (rubeola)	28	14	15	1,165	1,072	1,047
Meningococcal infections, total	-	-	-	9	25	26
Civilian	167	315	403	32,699	47,293	55,857
Military	21	42	---	708	1,127	---
Mumps	53	76	135	10,685	14,902	21,019
Pertussis	1	3	4	42	66	68
Rubella (German measles)	729	631	---	24,501	24,159	---
Tetanus	4	1	4	102	89	113
Tuberculosis	12	8	13	291	237	261
Typhoid fever	20	19	17	742	712	562
Typhus, tick-borne (Rky. Mt. spotted fever)						
Veneral Diseases:						
Gonorrhea	22,246	21,564	---	732,915	717,375	---
{ Civilian	651	515	---	21,941	21,841	---
{ Military	564	533	---	17,536	18,646	---
Syphilis, primary and secondary	9	2	---	259	253	---
{ Civilian	84	45	53	2,112	1,824	2,647
{ Military						
Rabies in animals						

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	2	Poliomyelitis, total:	8
Botulism:	24	Paralytic:	7
Congenital rubella syndrome:	17	Psittacosis: Calif. 2:	55
Leprosy: NYC 1:	100	Rabies in man:	2
Leptospirosis*:	35	Trichinosis:	70
Plague**:	14	Typhus, murine:	41

Delayed reports: *Leptospirosis: Va. add 1
**Plague: New Max. add 1

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending September 25, 1976 and September 20, 1975 - 38th 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		
						1976	1975	1976	1976	1976	1976		
UNITED STATES	137	7	347	-	124	44	212	3	334	637	156	15	339
NEW ENGLAND	4	-	41	-	-	3	-	-	7	25	9	-	13
Maine	-	-	5	-	-	-	-	-	-	-	-	-	-
New Hampshire	-	-	-	-	-	-	-	-	-	4	-	-	-
Vermont	-	-	6	-	-	-	-	-	-	-	1	-	-
Massachusetts	1	-	25	-	-	3	-	-	1	4	7	-	6
Rhode Island	3	-	1	-	-	-	-	-	4	7	-	-	3
Connecticut	-	-	4	-	-	-	-	-	2	10	1	-	4
MIDDLE ATLANTIC	12	1	29	-	-	4	18	2	83	107	23	1	74
Upstate New York	-	-	14	-	-	-	-	-	-	16	-	-	15
New York City	-	-	15	-	-	-	-	-	17	22	-	1	32
New Jersey	10	1	NN	-	-	-	11	-	24	31	20	-	14
Pennsylvania	2	-	-	-	-	4	7	2	42	38	3	-	13
EAST NORTH CENTRAL ..	15	-	93	-	-	5	46	-	43	76	16	2	18
Ohio	4	-	1	-	-	2	34	-	15	14	-	-	7
Indiana	2	-	14	-	-	-	-	-	2	5	6	-	-
Illinois	-	-	19	-	-	-	-	-	2	17	1	-	2
Michigan	9	-	25	-	-	3	8	-	19	32	9	1	7
Wisconsin	-	-	34	-	-	-	4	-	5	8	-	1	2
WEST NORTH CENTRAL ..	8	1	53	-	4	12	47	-	15	33	19	4	23
Minnesota	-	1	-	-	-	-	27	-	3	8	-	-	3
Iowa	-	-	37	-	-	-	6	-	-	-	3	-	-
Missouri*	8	-	1	-	1	11	1	-	9	14	5	-	9
North Dakota	-	-	-	-	-	1	1	-	-	6	1	1	1
South Dakota	-	-	-	-	3	-	2	-	-	1	-	-	3
Nebraska	-	-	-	-	-	-	1	-	-	-	-	-	2
Kansas	-	-	15	-	-	-	9	-	3	4	10	3	5
SOUTH ATLANTIC	12	-	51	-	-	1	18	1	39	74	23	1	59
Delaware	-	-	1	-	-	-	-	-	-	-	-	-	-
Maryland	-	-	3	-	-	-	1	-	13	8	4	-	11
District of Columbia ..	-	-	4	-	-	-	5	-	1	2	-	-	9
Virginia	4	-	5	-	-	-	-	-	5	10	3	-	8
West Virginia	1	-	28	-	-	-	5	-	3	7	-	-	3
North Carolina*	1	-	NN	-	-	-	2	-	12	7	6	-	6
South Carolina	1	-	-	-	-	3	1	-	-	2	4	-	1
Georgia	-	-	-	-	-	1	-	-	-	14	-	-	5
Florida	5	-	10	-	-	-	2	-	5	24	6	1	16
EAST SOUTH CENTRAL ..	22	1	4	-	-	9	51	-	13	53	4	-	2
Kentucky	8	-	1	-	-	-	1	-	-	8	4	-	-
Tennessee	10	1	NN	-	-	5	33	-	9	17	-	-	-
Alabama	4	-	1	-	-	4	5	-	4	12	-	-	1
Mississippi	-	-	2	-	-	-	12	-	-	16	-	-	1
WEST SOUTH CENTRAL ..	14	2	18	-	1	9	22	-	8	35	16	1	16
Arkansas	4	-	-	-	-	1	2	-	-	14	4	-	-
Louisiana	1	-	NN	-	-	2	-	-	6	7	4	-	1
Oklahoma	-	-	6	-	-	-	1	-	2	14	8	-	2
Texas	9	2	12	-	1	6	19	-	-	-	-	1	13
MOUNTAIN	-	-	17	-	4	-	3	-	9	36	15	-	13
Montana	-	-	5	-	-	-	1	-	2	-	2	-	-
Idaho	-	-	7	-	-	-	-	-	2	5	2	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	-	-	5	-	3	-	2	-	2	5	6	-	9
New Mexico	-	-	-	-	1	-	-	-	-	12	2	-	1
Arizona	-	-	NN	-	-	-	-	-	2	11	1	-	2
Utah	-	-	-	-	-	-	-	-	-	1	2	-	-
Nevada	-	-	-	-	-	-	-	-	1	2	-	-	1
PACIFIC	50	2	41	-	115	1	7	-	117	198	31	6	121
Washington	2	-	33	-	110	-	1	-	8	3	3	-	2
Oregon	2	-	-	-	-	-	2	-	3	15	-	-	5
California	45	2	-	-	1	-	4	-	106	172	28	6	113
Alaska	-	-	-	-	3	1	-	-	-	-	-	-	-
Hawaii	1	-	8	-	1	-	-	-	-	8	-	-	1
Guam*	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	27	-	1	-	-	-	1	11	-	-	1
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-	-	-

NN: Not Notifiable

*Delayed Reports: Hep. B: N. Car. add 1; Hep. A: N. Hamp. add 1, Mo. add 1, Guam add 3; Hep. Unsp.: N. Car. delete 1

Table III-Continued
 Cases of Specified Notifiable Diseases: United States
 Weeks Ending September 25, 1976 and September 20, 1975 - 38th Week

REPORTING AREA	MEASLES (Rubella)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1976	CUMULATIVE		1976	CUMULATIVE		1976	CUM. 1976	1976	1976	CUM. 1976	CUM. 1976
		1975	1976		1975	1976						
UNITED STATES	79	34,464	21,313	28	1,175	1,097	167	32,699	21	53	10,685	42
NEW ENGLAND	2	388	312	1	51	61	8	1,286	1	-	278	1
Maine	1	8	14	-	1	6	3	117	-	-	7	-
New Hampshire	-	9	22	-	4	2	-	25	-	-	11	-
Vermont	-	41	49	-	3	-	-	7	-	-	1	-
Massachusetts	-	36	111	-	14	21	-	157	-	-	135	1
Rhode Island	1	15	3	1	6	3	1	448	-	-	5	-
Connecticut	-	279	113	-	23	29	4	532	1	-	119	-
MIDDLE ATLANTIC	9	7,004	1,778	4	172	112	29	3,064	2	2	2,288	4
Upstate New York	3	2,937	590	-	63	34	2	386	1	1	603	2
New York City	3	457	146	-	45	29	5	1,611	-	1	145	1
New Jersey	-	600	461	2	25	18	20	517	-	-	1,339	-
Pennsylvania	3	3,010	581	2	39	31	2	550	1	-	201	1
EAST NORTH CENTRAL	38	14,664	6,364	2	147	155	47	13,461	10	18	3,973	2
Ohio	-	572	106	-	61	45	1	1,923	3	6	284	1
Indiana	16	3,288	394	1	7	8	12	1,457	-	4	730	-
Illinois	7	1,581	1,819	-	17	20	7	1,765	-	1	1,169	-
Michigan	4	5,846	3,015	1	51	62	6	4,840	4	6	1,376	1
Wisconsin	11	3,377	1,030	-	11	20	21	3,476	3	1	414	-
WEST NORTH CENTRAL	9	1,141	4,972	2	70	66	29	3,322	-	4	397	6
Minnesota	2	422	182	-	12	15	-	546	-	-	27	1
Iowa*	1	35	574	-	9	6	13	1,198	-	-	84	-
Missouri*	-	18	269	2	27	33	10	333	-	3	42	2
North Dakota	-	3	1,051	-	3	-	-	123	-	-	3	1
South Dakota	-	4	356	-	1	1	-	7	-	-	19	1
Nebraska	-	55	395	-	5	2	2	101	-	-	3	-
Kansas	6	604	2,145	-	13	9	4	1,014	-	1	219	1
SOUTH ATLANTIC	4	2,158	342	6	220	227	8	2,509	1	2	1,285	8
Delaware	-	128	35	1	8	6	-	59	-	-	34	-
Maryland	-	715	48	-	18	26	1	685	-	-	3	3
District of Columbia	1	13	1	-	2	5	-	105	-	-	45	-
Virginia	2	766	37	1	29	18	3	200	-	-	234	1
West Virginia	1	191	154	-	7	5	4	759	-	2	300	-
North Carolina	-	17	2	3	43	42	-	376	1	-	17	-
South Carolina	-	4	-	-	36	34	-	45	-	-	590	-
Georgia	-	2	40	-	20	14	-	-	-	-	2	-
Florida	-	322	25	1	57	77	-	280	-	-	60	4
EAST SOUTH CENTRAL	3	837	277	3	109	158	8	2,778	4	9	367	7
Kentucky	1	750	85	-	19	66	1	960	2	7	166	2
Tennessee	2	70	178	-	46	50	3	1,489	2	2	189	4
Alabama	-	-	5	1	31	29	4	272	-	-	1	1
Mississippi	-	17	9	2	13	13	-	57	-	-	11	-
WEST SOUTH CENTRAL	2	708	317	2	184	172	15	2,327	1	6	529	8
Arkansas	-	-	-	-	11	9	-	77	-	-	190	-
Louisiana	-	202	1	-	36	30	-	22	-	-	86	2
Oklahoma*	-	293	125	-	21	9	8	657	-	3	71	-
Texas	2	213	191	2	116	124	7	1,571	1	3	182	6
MOUNTAIN	2	5,075	1,406	2	42	34	3	1,121	-	-	476	1
Montana	-	204	50	-	4	7	-	21	-	-	235	-
Idaho	-	2,020	12	1	6	5	1	443	-	-	18	-
Wyoming	-	4	1	-	-	-	-	1	-	-	2	-
Colorado	-	307	1,158	-	11	9	-	223	-	-	23	-
New Mexico	-	15	13	-	4	4	-	127	-	-	31	-
Arizona	-	226	79	-	10	1	-	-	-	-	-	1
Utah	-	2,234	66	1	5	7	-	190	-	-	148	-
Nevada	2	65	27	-	2	1	2	116	-	-	19	-
PACIFIC	10	2,489	5,545	6	180	112	20	2,831	2	12	1,092	5
Washington	1	341	289	2	31	17	3	854	-	4	167	1
Oregon	2	165	196	-	17	5	4	358	-	1	135	1
California	7	1,976	4,996	3	110	84	13	1,563	2	7	769	3
Alaska	-	4	-	1	19	5	-	23	-	-	1	-
Hawaii	-	3	64	-	3	1	-	33	-	-	20	-
Guam	-	13	31	-	1	2	-	14	-	-	5	-
Puerto Rico	40	404	624	-	3	1	42	701	-	-	9	5
Virgin Islands	2	13	8	-	-	-	1	27	-	-	8	1

*Delayed Reports: Measles: Okla. delete 1; Pertussis: Iowa add 2, Mo. add 1

Table III-Continued
 Cases of Specified Notifiable Diseases: United States
 Weeks Ending September 25, 1976 and September 20, 1975 - 38th Week

REPORTING AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RHSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
	1976	CUM. 1976	CUM. 1976	1976	CUM. 1976	1976	CUM. 1976	GONORRHEA		SYPHILIS (Pri. & Sec.)		CUM. 1976		
								1976	CUMULATIVE		1976		CUMULATIVE	
									1976	1975			1976	1975
UNITED STATES	729	24,501	102	12	291	20	742	22,246	732,915	717,375	564	17,536	18,646	2,112
NEW ENGLAND	17	868	1	3	23	-	7	757	20,670	19,551	22	587	675	61
Maine	1	61	-	-	-	-	-	63	1,716	1,541	-	17	21	29
New Hampshire	1	35	-	-	2	-	-	26	600	534	-	7	13	1
Vermont	-	24	-	-	-	-	-	20	507	484	1	9	6	-
Massachusetts	8	514	1	1	14	-	4	396	9,868	9,029	17	423	445	21
Rhode Island	1	63	-	-	-	-	2	26	1,378	1,608	-	17	16	4
Connecticut	6	171	-	2	7	-	1	226	6,601	6,355	4	114	174	6
MIDDLE ATLANTIC	145	4,653	3	-	44	2	47	2,359	85,591	84,490	74	2,930	3,433	35
Upstate New York	17	722	2	-	8	-	19	547	13,653	14,809	3	174	326	11
New York City	60	1,889	1	-	22	-	5	864	38,536	36,467	53	1,827	1,976	-
New Jersey*	24	906	-	-	9	1	10	354	13,069	11,938	15	437	538	6
Pennsylvania	44	1,136	-	-	5	1	13	594	20,333	21,276	3	492	593	18
EAST SOUTH CENTRAL ..	126	3,467	1	1	27	-	17	3,463	115,663	117,319	41	1,534	1,519	124
Ohio	24	663	-	-	11	-	14	687	28,477	32,325	9	359	368	12
Indiana	14	396	-	-	-	-	-	511	11,523	10,228	9	87	123	21
Illinois	36	1,207	1	1	7	-	-	1,181	39,998	40,233	20	841	725	22
Michigan*	52	1,013	-	-	8	-	3	791	24,701	23,040	1	168	241	6
Wisconsin	-	188	-	-	1	-	-	293	10,964	11,493	2	79	62	63
WEST NORTH CENTRAL ..	40	898	25	2	17	1	23	1,512	38,682	35,932	15	324	459	501
Minnesota	7	163	3	1	8	-	-	326	6,824	7,411	4	74	91	114
Iowa	6	84	1	-	1	-	3	219	4,896	5,057	1	35	24	105
Missouri*	18	440	17	1	5	1	11	556	15,635	13,038	6	131	213	50
North Dakota	1	25	-	-	-	-	-	18	589	551	-	-	5	105
South Dakota	1	38	1	-	1	-	3	47	1,105	1,398	-	4	5	55
Nebraska*	2	41	-	-	1	-	-	140	3,300	3,187	-	26	15	12
Kansas	5	107	3	-	1	-	6	206	6,333	5,290	4	54	106	60
SOUTH ATLANTIC	129	5,182	7	2	40	5	372	5,169	177,394	176,851	125	5,063	5,830	341
Delaware	-	59	-	-	-	-	1	63	2,506	2,584	-	53	69	17
Maryland	17	721	1	-	4	1	21	699	23,738	21,355	12	417	417	11
District of Columbia ..	13	223	-	-	-	-	-	275	10,327	10,324	14	446	509	-
Virginia	13	796	2	-	4	3	87	479	18,535	17,274	9	491	447	54
West Virginia	3	209	-	-	4	-	8	69	2,268	2,225	-	19	45	12
North Carolina*	35	958	3	1	2	1	160	759	25,943	24,788	11	917	729	12
South Carolina*	5	392	-	-	4	-	47	492	16,545	16,545	4	287	408	3
Georgia	14	632	1	1	3	-	46	903	34,070	33,187	20	575	782	160
Florida	29	1,192	-	-	19	-	2	1,430	43,255	48,569	55	1,858	2,424	72
EAST SOUTH CENTRAL ..	77	2,095	14	2	14	8	143	1,835	64,949	60,996	18	700	826	103
Kentucky*	11	436	1	-	6	-	30	213	8,423	8,055	2	97	126	49
Tennessee	38	660	13	1	7	4	87	712	26,003	24,066	6	242	312	34
Alabama	18	619	-	1	1	1	10	623	18,267	16,850	3	144	192	20
Mississippi*	10	380	-	-	-	-	3	16	12,256	12,025	7	217	196	-
WEST SOUTH CENTRAL ..	77	2,907	37	-	13	4	124	3,081	93,853	87,900	90	2,101	1,577	474
Arkansas	6	353	20	-	4	-	19	201	8,749	9,408	2	70	48	113
Louisiana*	14	489	2	-	2	-	-	575	13,573	16,041	16	428	359	5
Oklahoma*	1	269	7	-	1	2	90	262	9,042	8,513	1	77	62	113
Texas	56	1,796	8	-	6	2	15	2,043	62,489	53,938	71	1,526	1,108	243
MOUNTAIN	7	668	4	1	20	-	4	812	28,451	28,304	8	582	429	161
Montana	-	39	2	-	2	-	1	56	1,517	1,540	-	8	4	64
Idaho	-	18	-	-	1	-	1	37	1,581	1,415	-	29	10	-
Wyoming	-	16	1	-	-	-	-	11	576	657	-	8	10	1
Colorado	-	111	-	-	5	-	1	177	7,499	7,084	2	119	72	51
New Mexico*	4	122	-	1	2	-	1	190	5,543	5,154	4	207	115	3
Arizona	2	302	-	-	9	-	-	273	8,380	7,670	2	167	162	25
Utah	-	35	1	-	1	-	-	38	1,512	1,753	-	18	12	17
Nevada	1	25	-	-	-	-	-	30	1,843	3,031	-	26	44	-
PACIFIC	111	3,763	10	1	93	-	5	3,258	107,662	106,032	171	3,715	3,898	312
Washington	-	281	2	1	5	-	3	297	9,052	9,705	-	92	142	6
Oregon	5	144	1	-	-	-	-	234	7,685	8,077	3	83	100	10
California	91	2,802	7	-	86	-	2	2,599	85,406	83,875	165	3,445	3,608	256
Alaska	-	71	-	-	-	-	-	73	3,022	2,589	1	17	5	40
Hawaii	15	465	-	-	2	-	-	55	2,497	1,786	2	78	43	-
Guam*	-	34	-	-	1	-	-	-	228	306	-	2	16	-
Puerto Rico	-	304	-	-	1	-	-	27	2,044	2,148	5	437	534	36
Virgin Islands	-	5	-	-	-	-	-	2	190	141	-	47	28	-

*Delayed reports: T.B.: Mich. delete 2, Mo. delete 1, N. Car. delete 1, Ky. delete 1, Miss. delete 1, La. delete 2, Okla. delete 1, New Mex. add 8; Tularemia: Mo. add 1; G.C.: Neb. delete 1, La. delete 1, Guam add 4; An. Rabies: New Jers. add 22, S.C. add 2

Table IV
Deaths in 121 United States Cities
Week Ending September 25, 1976 - 38th 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	
NEW ENGLAND	619	370	158	34	29	37	SOUTH ATLANTIC ...	1,200	647	349	107	58	41
Boston, Mass.	196	110	45	16	15	9	Atlanta, Ga.	120	63	34	16	5	3
Bridgeport, Conn.	27	13	9	1	1	2	Baltimore, Md.	248	125	76	28	13	4
Cambridge, Mass.	27	15	7	2	2	3	Charlotte, N. C.	51	27	18	4	1	2
Fall River, Mass.	23	17	3	3	-	-	Jacksonville, Fla.	81	47	21	4	5	3
Hartford, Conn.	54	29	16	5	1	7	Miami, Fla.	102	55	36	7	3	2
Lowell, Mass.	24	14	8	-	2	-	Norfolk, Va.	58	26	25	5	1	5
Lynn, Mass.	24	18	6	-	-	1	Richmond, Va.	82	41	27	1	10	8
New Bedford, Mass.	22	15	7	-	-	1	Savannah, Ga.	25	17	6	2	-	2
New Haven, Conn.	34	21	8	1	2	-	St. Petersburg, Fla.	69	60	5	1	1	2
Providence, R.I.	67	39	18	1	4	6	Tampa, Fla.	56	39	11	2	1	7
Somerville, Mass.	11	7	4	-	-	-	Washington, D. C.	241	110	70	33	13	3
Springfield, Mass.	37	24	8	2	1	-	Wilmington, Del.	67	37	20	4	5	-
Waterbury, Conn.	26	21	4	1	-	3	EAST SOUTH CENTRAL	603	344	180	28	29	16
Worcester, Mass.	47	27	15	2	1	5	Birmingham, Ala.	85	44	33	3	3	3
MIDDLE ATLANTIC ...	2,795	1,684	723	177	114	125	Chattanooga, Tenn.	42	23	12	3	2	2
Albany, N. Y.	47	28	8	3	5	-	Knoxville, Tenn.	48	35	7	3	-	-
Allentown, Pa.	17	11	3	1	2	-	Louisville, Ky.	101	57	32	3	6	2
Buffalo, N. Y.	112	63	32	4	8	8	Memphis, Tenn.	162	97	40	8	11	4
Camden, N. J.	30	19	8	1	-	1	Mobile, Ala.	41	19	17	1	3	1
Elizabeth, N. J.	32	21	8	1	1	2	Montgomery, Ala.	36	23	9	1	2	2
Erie, Pa.	42	29	9	2	2	4	Nashville, Tenn.	88	46	30	6	2	2
Jersey City, N. J.	46	28	11	5	1	2	WEST SOUTH CENTRAL	1,104	602	322	50	38	27
Newark, N. J.	54	22	17	6	4	3	Austin, Tex.	53	35	12	3	1	3
New York City, N. Y.	1,431	896	349	92	48	48	Baton Rouge, La.	40	21	14	4	-	4
Paterson, N. J.	41	23	11	3	2	6	Corpus Christi, Tex.	33	17	12	2	1	-
Philadelphia, Pa.	400	215	122	35	16	26	Dallas, Tex.	147	74	49	8	7	1
Pittsburgh, Pa.	176	93	55	7	13	10	El Paso, Tex.	43	24	6	9	2	2
Reading, Pa.	28	22	6	-	-	1	Fort Worth, Tex.	64	39	9	12	2	1
Rochester, N. Y.	104	61	23	7	6	2	Houston, Tex.	255	117	94	26	5	4
Schenectady, N. Y.	27	21	4	1	-	3	Little Rock, Ark.	69	44	14	2	6	6
Scranton, Pa.	45	26	17	1	-	2	New Orleans, La.	159	96	48	6	5	-
Syracuse, N. Y.	80	52	16	4	5	3	San Antonio, Tex.	131	77	29	9	7	4
Trenton, N. J.	30	19	8	3	-	-	Shreveport, La.	40	25	12	3	-	1
Utica, N. Y.	25	17	6	1	1	3	Tulsa, Okla.	70	33	23	6	2	1
Yonkers, N. Y.	28	18	10	-	-	1	MOUNTAIN	471	274	103	44	28	18
EAST NORTH CENTRAL	2,168	1,206	634	167	76	56	Albuquerque, N. Mex.	47	23	13	7	-	3
Akron, Ohio	69	42	18	4	4	-	Colorado Springs, Colo.	40	27	3	6	-	3
Canton, Ohio	34	22	8	1	-	-	Denver, Colo.	124	63	30	13	11	6
Chicago, Ill.	545	278	169	48	24	20	Las Vegas, Nev.	27	18	6	3	-	-
Cincinnati, Ohio	138	87	34	12	5	2	Ogden, Utah	18	14	2	1	1	-
Cleveland, Ohio	167	87	58	14	5	-	Phoenix, Ariz.	87	50	21	5	7	-
Columbus, Ohio	135	86	33	11	1	9	Pueblo, Colo.	26	17	6	2	-	5
Dayton, Ohio	79	42	25	5	-	-	Salt Lake City, Utah	56	32	11	6	7	-
Detroit, Mich.	279	154	76	28	7	5	Tucson, Ariz.	46	30	11	1	2	1
Evansville, Ind.	41	26	8	2	3	-	PACIFIC	1,711	1,088	388	140	46	42
Fort Wayne, Ind.	49	28	15	2	4	-	Berkeley, Calif.	27	21	2	2	2	-
Gary, Ind.	12	5	3	2	1	1	Fresno, Calif.	76	50	14	9	-	-
Grand Rapids, Mich.	58	35	15	4	1	7	Glendale, Calif.	32	23	7	2	-	-
Indianapolis, Ind.	142	67	50	10	8	5	Honolulu, Hawaii	55	29	18	5	1	1
Madison, Wis.	32	10	17	1	2	-	Long Beach, Calif.	109	72	24	9	4	1
Milwaukee, Wis.	127	72	40	7	3	1	Los Angeles, Calif.	585	377	127	45	18	15
Peoria, Ill.	32	19	11	1	1	1	Oakland, Calif.	65	31	18	10	4	2
Rockford, Ill.	39	25	8	2	3	2	Pasadena, Calif.	26	17	8	1	-	-
South Bend, Ind.	32	25	5	2	-	-	Portland, Oreg.	92	57	25	5	4	-
Toledo, Ohio	102	63	28	6	2	2	Sacramento, Calif.	72	45	19	6	1	5
Youngstown, Ohio	56	33	13	5	2	1	San Diego, Calif.	130	78	29	10	2	2
WEST NORTH CENTRAL	657	397	159	38	33	15	San Francisco, Calif.	157	101	35	14	3	-
Des Moines, Iowa	40	29	7	1	2	-	San Jose, Calif.	51	31	9	6	1	1
Duluth, Minn.	14	8	6	-	-	-	Seattle, Wash.	141	89	37	8	5	5
Kansas City, Kans.	37	22	8	3	-	-	Spokane, Wash.	54	42	8	3	1	7
Kansas City, Mo.	93	56	19	9	6	1	Tacoma, Wash.	39	25	8	5	-	3
Lincoln, Nebr.	35	25	9	1	-	4	TOTAL	11,328	6,612	3,016	825	451	377
Minneapolis, Minn.	89	55	18	9	4	2	Expected Number	11,609	6,859	3,071	790	410	367
Omaha, Nebr.	71	37	22	4	5	1							
St. Louis, Mo.	177	101	46	9	9	3							
St. Paul, Minn.	70	46	14	1	5	1							
Wichita, Kans.	31	18	10	1	2	3							

The Morbidity and Mortality Weekly Report, circulation 52,000, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Center for Disease Control, Attn.: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

Send mailing list additions, deletions, and address changes to: Center for Disease Control, Attn.: Distribution Services, GSO, 1-SB-36, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Foodborne Outbreak — Continued

Editorial Note: Evidence suggests that the food for the luau was probably the vehicle of transmission. How and where the food responsible for transmission was contaminated could not be determined, but demonstration of the same strain of shigella in the caterer's child suggests the source may have been a food handler at the caterer's home.

Follow-up on Penicillinase-producing *Neisseria gonorrhoeae*

The Center for Disease Control has now confirmed 12 cases of gonorrhea caused by penicillinase-producing *Neisseria gonorrhoeae* in the United States. These cases were detected in California, Maryland, Rhode Island, Arkansas, Iowa, New York, and Virginia in the period February-September 1976 in patients who were not cured after penicillin treatment. Eleven of the cases have been epidemiologically linked to individuals who recently traveled from the Far East. Assessment of the prevalence of these strains in selected populations in the Far East continues.

Forty cases of gonococcal infection with penicillinase-producing *N. gonorrhoeae* have been detected in Liverpool, England, since February 1976. Currently, these isolates comprise approximately 9% of routine isolates obtained from residents of that port city. No definite foreign source of these cases has been found. One additional case has been reported from London, with a possible source in West Africa (1).

Reported by Dept of Health and Social Security, England, and Bur of Laboratories, Bur of State Services, CDC.

Editorial Note: A worldwide search for penicillinase-producing strains of *N. gonorrhoeae* has been initiated. CDC considers it likely that other countries will soon confirm the presence of such strains, and that continuing occasional importation into the United States will occur. The potential

The annual foodborne outbreak reports for the years 1972-1974 list a total of only 14 documented foodborne outbreaks of shigellosis in the United States. Of these, 3 were caused by *S. flexneri* 2a and the rest by *Shigella sonnei*. This probably reflects the preponderance of *S. sonnei* infections in the United States.

for spread within the United States is unknown, but may be influenced by the adequacy of treatment and follow-up provided to infected patients. State health departments and military installations have been informed of this problem and are screening for these strains among infected persons, especially those returning to the United States from the Far East.

The CDC recommended treatment of choice for uncomplicated gonorrhea remains 4.8 million units of aqueous procaine penicillin G intramuscularly, administered together with 1 gram of probenecid orally (MMWR 23[40]). All patients with a positive follow-up culture after initial treatment with recommended doses of penicillin, ampicillin, or tetracycline should receive 2 grams spectinomycin intramuscularly. If the infection is related to the Far East, follow-up cultures 3-7 days rather than 7-14 days after the completion of treatment are preferred. All cases of gonorrhea should be reported to health departments. Physicians should identify cases related to the Far East so that, if feasible, special health department assistance can be offered for screening for penicillinase-producing strains, case follow-up, and contact referral.

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Endemic Giardiasis — Northern Canada

Because of the current increased interest in parasitic infections in general and protozoan infections in particular a stool survey of a community on Baffin Island in the Canadian Arctic was undertaken in May 1976. Twelve of 30 (40%) in the age group 0-4 and 26 (17%) of the total were found to be infected with *Giardia lamblia*.

These findings are considered indicative of many northern native settlements. When all native admissions from 1969 to 1973 to the Charles Camsell Hospital in Edmonton, Alberta, were screened, almost 30% of the 0-4 age group were positive for *Giardia lamblia*. None of the Arctic Bay samples came from individuals with diarrhea, and only in a small proportion of those found in the Charles Camsell Hospital was the giardial infection felt to be the cause of diarrhea. Finally, it is interesting to note the rather restricted spectrum of protozoal infections and the total absence of helminth ova from this sample population.

Editorial Note: Although the diarrheas and dysenteries of man have been little explored in the Arctic, the prevalence of intestinal parasites has been reported as high as 72% in Greenland (1). Earlier investigations suggested that the most common intestinal protozoa in the Canadian Arctic is *Giardia lamblia* (2). This has been further confirmed by the current investigation in which an overall prevalence rate of 17% was observed in the small community of Arctic Bay.

Since only 1 stool sample was collected from each donor, the rates calculated may have underestimated the pre-

valence. The known intermittency of cyst excretion in giardial infections suggests that such infections in this community are very common. There also is obviously spontaneous loss of the parasite in view of the facts that giardiasis is rarely treated other than in patients where it appears to be causing a diarrheal or malabsorptive illness, and that the incidence becomes progressively less as age increases.

Of particular note in these investigations is the observation that endemic giardiasis is generally asymptomatic. This contrasts with the experience of giardiasis in Canadian travelers overseas who have a relatively high rate of symptomatology—59% in a recent outbreak among tourists to Leningrad (3). The reasons for this are not clear but may relate to the absence of prior exposure in the majority of Canadian travelers. Additional aspects which deserve further study are the variation in virulence and dose of the microorganisms as well as other factors of host resistance.

Reported by RDP Eaton, MD, Northern Medical Research Unit, Medical Services, Dept of National Health and Welfare, Edmonton, and F White, MD, Bur of Epidemiology, Laboratory Centre for Disease Control, Ottawa, in *Canada Diseases Weekly Report* 2(32): 125-126, 1976.

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1. Babbott FL, Jr, Frye WW, Gordon JE: Intestinal parasites of man in Arctic Greenland. *Am J Trop Med Hyg* 10(2):185-190, 1961
2. Transactions of the Royal Society of Canada. Vol. L1, Series III, Section 5, 1967, pp. 1-10
3. *Canada Diseases Weekly Report* 2(25), 1976

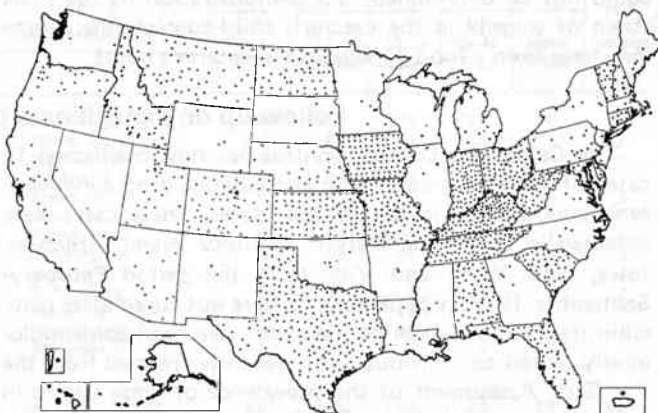
Current Trends**Influenza — Worldwide**

United States: There have been no isolations of influenza viruses reported to CDC's influenza surveillance system in the past 2 weeks.

From mid-summer through spring the CDC surveillance system weekly receives the results of cultures of more than 400 specimens from patients with an influenza-like illness. Virus surveillance programs are being conducted by World Health Organization (WHO) collaborating laboratories in addition to 10 National Institute of Allergy and Infectious Diseases (NIAID) sponsored laboratories. Specimens are being submitted to these laboratories by approximately 35 sentinel physicians and by 58 hospitals and clinics across the country. Twenty-five other laboratories which are not conducting formal virus surveillance programs will report virus isolations to CDC.

Other influenza surveillance activities include the individual state surveillance programs, which report data weekly by telephone to CDC. Data on influenza morbidity is also received from various sources, including 203 sentinel physicians, 284 industries, 727 schools, 380 hospitals or clinics, and 1,408 counties (Figure 2). Pneumonia and influenza mortality data is currently being reported weekly for 121

FIGURE 2. Locations of morbidity data sources for influenza surveillance, by county, United States 1976.



cities and will be used, as in past years, to monitor elevations above a previously calculated epidemic threshold.

Worldwide: There have been no reports of influenza activity in the past 2 weeks.

Reported by the National Influenza Immunization Program, CDC.

Epidemiologic Notes and Reports**Follow-up on Respiratory Infection — Pennsylvania**

Since the last report concerning the epidemic of respiratory illness in Philadelphia among attendees of an American Legion Convention (MMWR 25 [34]), 1 additional case and 1 more death have been added to the case list bringing the total to 180 cases and 29 deaths. The latest case is that of an American Legion delegate who became ill on July 27; his chart was found in a survey of hospitals for records of ill legionnaires.

A pathology panel that reviewed microscopic sections from 10 cases concluded that a characteristic histologic lesion of acute diffuse alveolar damage was identifiable in 5 of 8 cases where adequate lung sections were available. The histopathologic changes included presence of hyaline membranes, regenerating alveolar epithelium, sparse interstitial round cell infiltrate, and intra-alveolar proteinaceous debris. Focal bacterial pneumonia which may have been superim-

posed was frequently present. This pattern of injury is non-specific and may be caused by many infectious and toxic agents.

The cause of the outbreak is still unknown. Continuing laboratory work includes attempts to demonstrate interference of viral growth in tissue cultures by inoculation with case material, search by fluorescent antibody and radioimmunoassay for antigens in lungs, using late convalescent sera, and further analysis for heavy metals and toxic organic compounds. Postmortem material has been collected from 22 of 25 cases where autopsies were performed, and a bank of these tissues has been established.

Reported by RG Sharrar, MD, City of Philadelphia Dept of Public Health; E Streiff, RN, MPH, Allegheny County Dept of Health; WE Parkin, DVM, Acting State Epidemiologist, Pennsylvania State Dept of Health; Bur of Epidemiology and Bur of Laboratories, CDC.

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