



# Morbidity and Mortality

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE / PUBLIC HEALTH SERVICE HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

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**EPIDEMIOLOGIC NOTES AND REPORTS**  
**INTERSTATE OUTBREAK OF NON-ABATTOIR**  
**ASSOCIATED BRUCELLOSIS - Colorado, Texas**

Between February and March 1973, 2 outbreaks of brucellosis associated with exposure to Mexican cheese were reported in Colorado and Texas; each is summarized below:

**Outbreak 1:** On February 19, 1973, a 24-year-old woman was hospitalized in Denver, Colorado, with a 3-week history of fever, chills, night sweats, and generalized abdominal and low back pain. One week prior to admission, she had had bitemporal headache, dark urine, and watery diarrhea. On February 16, she had been examined in the emergency room of the hospital; her hematocrit was 32, and her white blood cell count (WBC) was 4,900 with atypical lymphocytes.

On admission, she had tachycardia and a rectal temperature of 40.9°C; other physical findings included a soft systolic murmur at the cardiac base, mild lower quadrant abdominal

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tenderness, hepatosplenomegaly, and bilateral costovertebral angle tenderness. Her hematocrit was 28 and hemoglobin 8.4 gm%, and she had evidence of disseminated intravascular coagulation without bleeding. Liver function tests and electrolytes were normal; her WBC was 2,700.

A serum specimen taken on February 20 showed a Brucella agglutination titer of 1:3,200, and a blood culture was positive for *Brucella melitensis*. Following treatment with

**TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES**  
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	23rd WEEK ENDING		MEDIAN 1968-1972	CUMULATIVE, FIRST 23 WEEKS		
	June 9, 1973	June 10, 1972		1973	1972	MEDIAN 1968-1972
Aseptic meningitis . . . . .	55	52	48	886	841	544
Brucellosis . . . . .	3	4	4	58	62	69
Chickenpox . . . . .	4,565	4,145	--	129,419	98,205	--
Diphtheria . . . . .	2	2	2	88	49	79
Encephalitis, primary:						
Arthropod-borne and unspecified . . . . .	28	17	21	470	360	437
Encephalitis, post-infectious . . . . .	13	10	9	133	126	153
Hepatitis, serum (Hepatitis B) . . . . .	185	205	143	3,444	4,220	3,090
Hepatitis, infectious (Hepatitis A) . . . . .	1,017	1,115	1,076	22,776	25,242	24,881
Malaria . . . . .	7	7	50	104	560	1,161
Measles (rubeola) . . . . .	811	1,216	1,216	20,451	22,681	22,681
Meningococcal infections, total . . . . .	25	21	33	769	744	1,429
Civilian . . . . .	25	18	33	751	711	1,283
Military . . . . .	--	3	3	18	33	146
Mumps . . . . .	1,809	1,660	2,530	46,179	48,196	62,703
Rubella (German measles) . . . . .	754	651	1,535	22,957	17,849	36,112
Tetanus . . . . .	1	--	2	36	39	46
Tuberculosis, new active . . . . .	584	595	--	14,147	14,577	--
Tularemia . . . . .	7	2	2	33	45	45
Typhoid fever . . . . .	12	5	5	347	128	116
Typhus, tick-borne (Rky. Mt. spotted fever) . . . . .	45	15	16	136	89	75
Veneral Diseases:						
Gonorrhea . . . . .	15,892	13,957	--	339,824	301,263	--
Syphilis, primary and secondary . . . . .	452	536	--	11,700	10,599	--
Rabies in animals . . . . .	82	101	68	1,642	2,018	1,726

**TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY**

	Cum.		Cum.
Anthrax: . . . . .	1	Poliomyelitis, total: . . . . .	2
Botulism: Wash. - 2 . . . . .	11	Paralytic: . . . . .	2
Congenital rubella syndrome: Minn. - 1 . . . . .	12	Psittacosis: Md. - 1 . . . . .	8
Leprosy: Colo. - 1, Hawaii - 1 . . . . .	49	Rabies in man: . . . . .	--
Leptospirosis: . . . . .	13	Trichinosis: . . . . .	38
Plague: . . . . .	--	Typhus, murine: Tex. - 1 . . . . .	12

**BRUCELLOSIS — Continued**

ampicillin, kanamycin, and tetracycline, she has remained asymptomatic.

On March 13, the 24-year-old sister of this patient was admitted to the same hospital and gave a 2-week history of head cold and fever. The week prior to admission, she had experienced a dry, nonproductive cough, bitemporal headache, nausea, vomiting, and mild generalized arthralgia; she had also had occasional night sweats, fever, and chills.

On admission, her temperature was 38.6°C orally, and her pulse rate was 120 per minute. She had inspiratory rales over the left lower lobe and a soft systolic murmur at the cardiac base; otherwise, the physical examination was normal. Chest X-ray revealed a left lower lobe infiltrate. Her hematocrit was 28 and hemoglobin 9.7 gm% with normal clotting tests. A serum specimen obtained on March 15 showed a *Brucella* agglutination titer of 1:320. She was treated with kanamycin and is presently asymptomatic.

The household contacts of these 2 patients were subsequently examined; the husband, daughter, and brother of the first patient were asymptomatic, and a serum specimen from the brother was negative for *Brucella* antibodies. The husband and daughter of the second patient were also asymptomatic, but her mother-in-law reported having fever and chills in late February and had been treated with a 1-week course of tetracycline by her private physician. Serum specimens from the husband and daughter were negative; the mother-in-law's serum had a *Brucella* agglutination titer of 1:320.

Epidemiologic investigation revealed that the mother-in-law of the second patient had purchased goat cheese at a market in Juarez, Mexico, and that this cheese had subsequently been eaten by several members of the 2 families. Both sisters gave a history of eating the cheese, but the mother-in-law denied eating it.

**Outbreak 2:** In March 1973, 3 members of a family living in

El Paso, Texas, became ill with brucellosis; *B. melitensis* was isolated from the blood of 1 child, and all symptomatic individuals had elevated *Brucella* agglutinin titers. Seven other family members were asymptomatic and had negative titers. Cheese purchased at a Juarez, Mexico, market had been eaten by all members of the family in the 3 weeks prior to onset of symptoms in the 3 ill persons.

Three additional cases of brucellosis were reported from El Paso between January and April 1973; 1 was in a person who had eaten cheese purchased in Mexico. No cases of brucellosis were reported from El Paso in 1972.

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**Editorial Note**

Brucellosis in the United States today occurs predominantly in workers in the livestock and meat processing industries; in recent years, about 15% of reported cases have been associated with the ingestion of presumably unpasteurized dairy products (1). Of the 190 reported cases in 1971, 19 were associated with Mexican cheese or dairy products, and 2 persons were infected after ingestion of Italian dairy products. The persons with brucellosis in the 2 outbreaks reported here have in common a history of exposure to cheese purchased in Juarez, Mexico, early in 1973. An inquiry regarding exposure to such food is definitely indicated in investigating cases of brucellosis.

**Reference**

1. Center for Disease Control: Brucellosis 1971 Annual Summary, October 1972

**TRICHINOSIS — Nebraska**

Between January 14 and 29, 1973, 15 of 25 members of 4 families in West Point, Nebraska, became ill with fever (93%), diarrhea (73%), muscle aches (67%), periorbital edema (53%), and headache (47%) (Table 1). Three of the ill persons were hospitalized: 1 with pneumonia and severe muscle aches, 1 with nephritis, and 1 with evidence of myocarditis and

central nervous system symptoms. Using the trichinosis bentonite flocculation test, titers were observed in 12 of the 15 ill individuals. Of 11 persons on whom data were available, 10 had white blood cell counts  $\geq 10,000$ , and 11 had eosinophilia. All ill persons were diagnosed as having trichinosis

(Continued on page 199)

**Table 1**  
Signs and Symptoms in 15 Persons with Trichinosis  
West Point, Nebraska — January-February 1973

Sign or Symptom	Patients with Sign or Symptom		Sign or Symptom	Patients with Sign or Symptom	
	Number	Percent		Number	Percent
Fever	14	93	Chills and Sweating	3	20
Diarrhea	11	73	Fainting and Vertigo	2	13
Muscle Aches	10	67	Hair Loss (late)	2	13
Weakness	10	67	Cramps	1	7
Periorbital Edema	8	53	Nausea	1	7
Headache	7	47	Myocarditis	1	7
Weight Loss	5	34	Pneumonia	1	7
Facial Edema	4	27	Nephritis	1	7

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JUNE 9, 1973 AND JUNE 10, 1972 (23rd WEEK)

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post In- fectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
						1973	1972	1973	1973	1973	1972
UNITED STATES .....	55	3	4,565	2	88	28	17	13	185	1,017	1,115
NEW ENGLAND .....	3	-	770	-	3	-	2	-	3	60	75
Maine *	-	-	8	-	-	-	-	-	-	-	12
New Hampshire *	-	-	24	-	-	-	-	-	-	7	2
Vermont .....	-	-	15	-	-	-	-	-	-	2	8
Massachusetts .....	1	-	372	-	1	-	1	-	-	32	42
Rhode Island .....	2	-	99	-	2	-	-	-	1	6	3
Connecticut .....	-	-	252	-	-	-	1	-	2	13	8
MIDDLE ATLANTIC .....	4	-	412	-	-	3	6	-	25	123	162
Upstate New York .....	1	-	5	-	-	1	-	-	3	48	50
New York City .....	-	-	210	-	-	-	-	-	4	16	32
New Jersey .....	3	-	NN	-	-	2	5	-	13	32	53
Pennsylvania .....	-	-	197	-	-	-	1	-	5	27	27
EAST NORTH CENTRAL .....	8	-	1,916	-	-	18	5	7	21	145	174
Ohio .....	3	-	439	-	-	7	2	-	4	31	43
Indiana .....	-	-	156	-	-	1	-	-	-	11	14
Illinois .....	3	-	-	-	-	4	1	7	10	28	48
Michigan .....	2	-	651	-	-	6	2	-	6	72	61
Wisconsin .....	-	-	670	-	-	-	-	-	1	3	8
WEST NORTH CENTRAL .....	1	1	160	-	7	1	-	2	5	46	52
Minnesota *	-	-	3	-	-	-	-	2	1	6	4
Iowa .....	-	1	128	-	-	1	-	-	-	2	10
Missouri .....	1	-	12	-	-	-	-	-	3	16	16
North Dakota .....	-	-	7	-	-	-	-	-	1	-	3
South Dakota .....	-	-	-	-	7	-	-	-	-	1	2
Nebraska .....	-	-	10	-	-	-	-	-	-	1	3
Kansas .....	-	-	-	-	-	-	-	-	-	20	14
SOUTH ATLANTIC .....	5	1	384	-	-	2	1	-	25	213	160
Delaware .....	-	-	19	-	-	-	-	-	-	7	-
Maryland .....	-	-	37	-	-	-	-	-	5	72	20
District of Columbia .....	-	-	5	-	-	-	-	-	-	2	-
Virginia .....	-	-	31	-	-	-	-	-	1	16	29
West Virginia .....	-	-	242	-	-	-	-	-	-	7	13
North Carolina .....	2	-	NN	-	-	2	-	-	4	16	25
South Carolina .....	1	-	50	-	-	-	-	-	-	9	9
Georgia .....	-	1	-	-	-	-	-	-	-	4	30
Florida .....	2	-	-	-	-	-	1	-	15	87	27
EAST SOUTH CENTRAL .....	3	1	86	-	-	-	-	2	24	69	64
Kentucky .....	-	-	64	-	-	-	-	-	1	24	23
Tennessee .....	1	1	NN	-	-	-	-	1	4	19	28
Alabama .....	2	-	19	-	-	-	-	1	14	22	6
Mississippi .....	-	-	3	-	-	-	-	-	5	4	7
WEST SOUTH CENTRAL .....	5	-	307	1	7	2	-	-	16	144	138
Arkansas *	-	-	16	-	-	-	-	-	-	7	11
Louisiana .....	4	-	NN	-	-	-	-	-	1	18	44
Oklahoma .....	1	-	28	-	-	2	-	-	2	16	28
Texas .....	-	-	263	1	7	-	-	-	13	103	85
MOUNTAIN .....	-	-	108	-	2	-	-	-	3	40	67
Montana .....	-	-	39	-	-	-	-	-	1	4	1
Idaho .....	-	-	-	-	-	-	-	-	2	4	2
Wyoming .....	---	---	---	---	---	---	---	---	---	---	---
Colorado .....	-	-	46	-	-	-	-	-	-	20	12
New Mexico .....	-	-	17	-	2	-	-	-	-	11	10
Arizona *	-	-	-	-	-	-	-	-	-	1	32
Utah .....	-	-	6	-	-	-	-	-	-	-	10
Nevada .....	-	-	-	-	-	-	-	-	-	-	-
PACIFIC .....	26	-	422	1	69	2	3	2	63	177	223
Washington .....	2	-	324	1	64	-	-	-	4	20	28
Oregon .....	-	-	-	-	3	-	1	-	3	34	40
California .....	24	-	-	-	2	2	2	2	56	117	154
Alaska .....	-	-	7	-	-	-	-	-	-	2	1
Hawaii .....	-	-	91	-	-	-	-	-	-	4	-
Guam*	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico .....	-	-	33	-	-	-	-	-	-	36	13
Virgin Islands .....	-	-	48	-	-	-	-	-	-	-	1

\*Delayed reports: Aseptic meningitis: Guam 2  
Chickenpox: Me. 47, Guam 6Hepatitis B: Minn. 5, Ark. 2, Ariz. 1  
Hepatitis A: Me. 4, N.H. 1, Minn. delete 5,  
Ark. 5, Ariz. 7, Guam 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JUNE 9, 1973 AND JUNE 10, 1972 (23rd WEEK) - Continued

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1973	Cum. 1973	1973	Cumulative		1973	Cumulative		1973	Cum. 1973	1973	Cum. 1973
				1973	1972		1973	1972				
UNITED STATES .....	7	104	811	20,451	22,681	25	769	744	1,809	46,179	754	22,957
NEW ENGLAND .....	-	9	127	6,896	2,396	-	34	32	70	2,121	109	3,321
Maine *	-	-	1	46	224	-	-	3	1	200	-	66
New Hampshire	-	-	4	820	210	-	6	2	-	162	9	347
Vermont	-	2	1	105	98	-	2	-	1	222	1	41
Massachusetts	-	3	80	3,720	420	-	11	16	24	685	61	1,872
Rhode Island	-	-	14	534	473	-	1	9	23	243	5	202
Connecticut	-	4	27	1,671	971	-	14	2	21	609	33	793
MIDDLE ATLANTIC .....	2	16	156	1,765	804	2	109	91	284	5,878	160	3,655
Upstate New York	2	10	74	521	108	1	40	22	NN	NN	31	338
New York City	-	1	23	760	186	-	20	27	181	3,505	28	361
New Jersey	-	1	19	249	453	-	25	19	72	1,288	94	2,699
Pennsylvania	-	4	40	235	47	1	24	23	31	1,085	7	257
EAST NORTH CENTRAL .....	2	16	402	6,970	9,215	3	95	100	562	12,485	197	5,058
Ohio	-	2	2	237	215	1	42	35	156	2,383	28	604
Indiana	1	3	10	509	1,124	-	2	10	87	991	21	867
Illinois	-	8	84	1,620	3,419	2	20	24	71	2,127	31	777
Michigan	1	3	258	3,652	1,607	-	26	27	154	3,472	89	1,476
Wisconsin	-	-	48	952	2,850	-	5	4	94	3,512	28	1,334
WEST NORTH CENTRAL .....	-	4	7	403	894	6	64	60	57	4,095	18	1,141
Minnesota	-	1	-	15	16	1	2	13	2	75	3	200
Iowa	-	-	7	259	634	4	15	2	42	2,700	9	174
Missouri	-	1	-	47	153	1	30	18	7	508	5	244
North Dakota	-	1	-	52	48	-	3	-	1	61	-	269
South Dakota	-	-	-	-	4	-	3	2	-	13	-	21
Nebraska	-	-	-	3	18	-	4	9	4	88	1	138
Kansas	-	1	-	27	21	-	7	16	1	650	-	95
SOUTH ATLANTIC .....	-	12	16	959	1,850	4	128	164	248	5,401	61	1,672
Delaware	-	-	-	5	35	-	-	1	7	228	-	8
Maryland	-	-	-	2	13	-	19	28	12	527	-	9
District of Columbia	-	-	-	3	2	1	3	7	-	37	-	2
Virginia	-	4	2	385	55	-	21	38	32	543	-	37
West Virginia	-	-	8	171	210	-	2	6	96	1,866	7	250
North Carolina	-	3	-	4	28	2	27	23	NN	NN	3	192
South Carolina	-	1	-	51	206	-	10	14	8	327	1	74
Georgia	-	-	-	40	135	-	17	3	-	25	-	7
Florida	-	4	6	298	1,166	1	29	44	93	1,848	50	753
EAST SOUTH CENTRAL .....	-	2	5	548	962	6	71	59	155	3,261	19	1,083
Kentucky	-	-	-	350	480	2	26	20	22	1,023	5	363
Tennessee	-	-	2	152	183	4	27	22	121	1,425	7	392
Alabama	-	2	-	4	127	-	13	11	12	365	7	162
Mississippi	-	-	3	42	172	-	5	6	-	448	-	166
WEST SOUTH CENTRAL .....	-	9	13	603	1,256	2	121	91	76	2,940	18	1,336
Arkansas	-	-	4	67	12	-	12	8	6	297	2	107
Louisiana	-	2	1	81	79	-	25	27	-	50	1	94
Oklahoma	-	1	-	48	9	-	11	6	9	332	-	160
Texas	-	6	8	407	1,156	2	73	50	61	2,261	15	975
MOUNTAIN .....	-	7	11	448	1,569	1	20	13	51	2,166	55	2,274
Montana	-	1	-	12	12	-	4	2	4	199	40	483
Idaho	-	-	3	219	17	-	1	3	4	109	1	27
Wyoming	-	-	-	10	45	-	-	1	-	417	-	5
Colorado	-	1	8	90	470	-	5	2	23	341	12	1,507
New Mexico	-	1	-	101	98	-	3	1	15	859	2	167
Arizona *	-	4	-	15	775	-	3	1	-	140	-	17
Utah	-	-	-	1	152	1	2	2	5	94	-	65
Nevada	-	-	-	-	-	-	2	1	-	7	-	3
PACIFIC .....	3	29	74	1,859	3,735	1	127	134	306	7,832	117	3,417
Washington	-	2	29	853	883	-	15	11	49	1,345	25	608
Oregon	-	2	9	395	44	-	10	11	49	1,452	28	706
California	3	22	30	532	2,709	1	98	104	190	4,249	63	2,073
Alaska	-	2	5	65	11	-	4	5	10	580	-	9
Hawaii	-	1	1	14	88	-	-	3	8	206	1	21
Guam *	-	-	-	4	2	-	-	11	-	6	-	6
Puerto Rico	-	-	74	1,453	451	-	4	4	11	491	1	21
Virgin Islands	-	-	-	-	1	-	-	2	-	15	1	2

\*Delayed reports: Measles: Me. 10

Mumps: Me. 33

Rubella: Me. 4, Ariz. 1, Guam 1

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TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JUNE 9, 1973 AND JUNE 10, 1972 (23rd WEEK) - Continued

AREA	TETANUS Cumulative 1973	TUBERCULOSIS (New Active)		TULA- REMIA Cumulative 1973	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
		1973	Cum. 1973		1973	Cum. 1973	1973	Cum. 1973	GONOR- RHEA	SYPHILIS (Pri. & Sec.)	1973	Cum. 1973
									1973	1973		
UNITED STATES	36	584	14,147	33	12	347	45	136	15,892	452	82	1,642
NEW ENGLAND	2	32	507	-	-	5	-	1	392	18	3	83
Maine	-	3	38	-	-	-	-	-	27	-	3	49
New Hampshire	-	-	31	-	-	-	-	-	17	-	-	27
Vermont	-	3	15	-	-	-	-	-	3	1	-	3
Massachusetts	-	23	278	-	-	5	-	1	132	8	-	4
Rhode Island*	1	3	39	-	-	-	-	-	62	-	-	-
Connecticut	1	-	106	-	-	-	-	-	151	9	-	-
MIDDLE ATLANTIC	5	102	2,926	-	5	28	5	8	2,309	107	1	9
Upstate New York	-	8	511	-	1	4	3	5	484	8	-	4
New York City	3	43	1,108	-	1	10	1	1	1,015	74	-	-
New Jersey	2	26	516	-	-	6	1	1	302	13	-	-
Pennsylvania	-	25	791	-	3	8	-	1	508	12	1	5
EAST NORTH CENTRAL	4	99	2,181	-	1	17	-	1	1,932	44	7	149
Ohio*	1	35	670	-	1	5	-	1	844	7	-	20
Indiana	-	5	306	-	-	-	-	-	259	12	2	42
Illinois	2	35	626	-	-	4	-	-	268	9	1	42
Michigan	-	24	502	-	-	6	-	-	413	16	1	3
Wisconsin	1	-	77	-	-	2	-	-	148	-	3	42
WEST NORTH CENTRAL	5	11	514	4	-	8	1	3	806	4	27	472
Minnesota	-	3	67	-	-	3	-	-	204	3	15	167
Iowa	-	2	45	-	-	-	1	1	77	-	4	113
Missouri	4	4	241	4	-	3	-	2	250	1	-	38
North Dakota	1	-	17	-	-	-	-	-	12	-	5	77
South Dakota	-	-	36	-	-	1	-	-	31	-	-	32
Nebraska	-	-	39	-	-	1	-	-	55	-	-	2
Kansas	-	2	69	-	-	-	-	-	177	-	3	43
SOUTH ATLANTIC	5	147	2,740	6	3	220	24	71	4,637	147	5	135
Delaware	-	2	32	-	-	-	2	3	26	2	1	1
Maryland	-	10	269	-	-	4	-	1	336	4	-	7
District of Columbia	-	9	134	-	-	-	-	-	340	8	-	-
Virginia	-	20	373	1	-	-	3	18	479	44	-	44
West Virginia	-	2	138	-	-	2	-	-	55	-	-	15
North Carolina	-	16	428	1	-	3	15	31	755	16	-	1
South Carolina	-	7	256	-	1	3	2	10	687	20	-	1
Georgia	1	37	470	3	-	1	2	8	924	32	2	44
Florida	4	44	640	1	2	207	-	-	1,035	21	2	22
EAST SOUTH CENTRAL	6	53	1,236	5	-	7	8	18	1,328	24	13	300
Kentucky*	1	10	306	1	-	1	-	-	136	2	8	161
Tennessee	3	21	383	3	-	4	4	12	485	8	3	106
Alabama	2	13	329	-	-	2	1	3	543	10	2	33
Mississippi	-	9	218	1	-	-	3	3	164	4	-	-
WEST SOUTH CENTRAL	6	24	1,401	17	1	12	6	30	1,955	42	20	334
Arkansas*	-	11	165	5	-	2	-	3	278	4	6	78
Louisiana*	2	8	249	-	-	3	-	-	529	19	-	20
Oklahoma	2	5	129	10	1	2	6	27	247	2	8	111
Texas	2	-	858	2	-	5	-	-	901	17	6	125
MOUNTAIN	-	17	456	-	-	5	-	-	438	4	-	17
Montana	-	1	15	-	-	2	-	-	44	-	-	-
Idaho	-	-	22	-	-	-	-	-	30	-	-	-
Wyoming	-	-	8	-	-	-	-	-	-	-	-	-
Colorado	-	5	86	-	-	-	-	-	160	1	-	-
New Mexico	-	7	102	-	-	1	-	-	28	-	-	2
Arizona*	-	2	174	-	-	2	-	-	126	1	-	15
Utah	-	1	17	-	-	-	-	-	25	-	-	-
Nevada	-	1	32	-	-	-	-	-	25	2	-	-
PACIFIC	3	99	2,186	1	2	45	1	4	2,095	62	6	143
Washington*	-	16	190	-	-	3	-	2	189	3	-	-
Oregon	-	6	116	-	-	2	1	2	131	-	-	1
California	3	72	1,701	1	2	39	-	-	1,622	54	6	135
Alaska	-	-	54	-	-	-	-	-	91	5	-	7
Hawaii	-	5	125	-	-	1	-	-	62	-	-	-
Guam*	-	-	16	-	-	-	-	-	-	-	-	-
Puerto Rico	3	4	237	-	-	2	-	-	92	15	3	21
Virgin Islands	-	-	-	-	-	-	-	-	7	-	-	-

\*Delayed reports: TB: Ohio delete 6, Ky. delete 1, Guam 1  
 Typhoid: Ohio delete 1  
 Gonorrhea: La. delete 1, Ariz. 172, Guam 4  
 Syphilis: R.I. 1, Ariz. 4, Wash. delete 5  
 Rabies: Ark. 1

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING JUNE 9, 1973

Week No.

23

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes			Pneumonia and Influenza All Ages	Area	All Causes			Pneumonia and Influenza All Ages
	All Ages	65 years and over	Under 1 year			All Ages	65 years and over	Under 1 year	
<b>NEW ENGLAND</b>	668	413	30	38	<b>SOUTH ATLANTIC</b>	1245	706	36	45
Boston, Mass.	202	114	8	9	Atlanta, Ga.	119	55	10	2
Bridgeport, Conn.	43	29	-	3	Baltimore, Md.	272	162	6	2
Cambridge, Mass.	25	16	2	4	Charlotte, N. C.	63	36	4	-
Fall River, Mass.	29	19	1	1	Jacksonville, Fla.	59	34	4	-
Hartford, Conn.	54	34	3	-	Miami, Fla.	108	65	1	2
Lowell, Mass.	26	16	-	1	Norfolk, Va.	76	29	3	7
Lynn, Mass.	11	6	-	-	Richmond, Va.	104	64	-	7
New Bedford, Mass.	27	20	1	-	Savannah, Ga.	50	28	3	4
New Haven, Conn.	51	28	7	1	St. Petersburg, Fla.	89	78	1	7
Providence, R. I.	62	37	7	4	Tampa, Fla.	77	46	-	8
Somerville, Mass.	10	8	-	-	Washington, D. C.	179	84	4	4
Springfield, Mass.	38	24	-	6	Wilmington, Del.	49	25	-	2
Waterbury, Conn.	24	13	-	1	<b>EAST SOUTH CENTRAL</b>	778	434	24	31
Worcester, Mass.	66	49	1	8	Birmingham, Ala.	138	83	2	1
<b>MIDDLE ATLANTIC</b>	3001	1794	85	113	Chattanooga, Tenn.	58	27	4	2
Albany, N. Y.	59	42	2	1	Knoxville, Tenn.	40	28	-	-
Allentown, Pa.	37	23	2	6	Louisville, Ky.	147	97	6	12
Buffalo, N. Y.	165	95	2	13	Memphis, Tenn.	181	90	5	2
Camden, N. J.	43	21	3	3	Mobile, Ala.	51	27	2	1
Elizabeth, N. J.	25	15	-	2	Montgomery, Ala.	43	24	3	5
Erie, Pa.	41	28	2	4	Nashville, Tenn.	120	68	2	8
Jersey City, N. J.	63	37	5	3	<b>WEST SOUTH CENTRAL</b>	1235	637	58	28
Newark, N. J.	81	37	6	4	Austin, Tex.	38	19	2	1
New York City, N. Y. †	1437	872	24	46	Baton Rouge, La.	44	25	1	2
Paterson, N. J.	44	22	3	4	Corpus Christi, Tex.	38	19	5	-
Philadelphia, Pa.	399	222	11	3	Dallas, Tex.	169	96	1	-
Pittsburgh, Pa.	188	108	6	7	El Paso, Tex.	61	27	3	-
Reading, Pa.	34	19	-	4	Fort Worth, Tex.	81	39	5	1
Rochester, N. Y.	136	99	7	10	Houston, Tex.	251	114	8	8
Schenectady, N. Y.	24	17	1	-	Little Rock, Ark.	52	21	3	2
Scranton, Pa.	38	27	-	1	New Orleans, La.	134	66	13	1
Syracuse, N. Y.	82	44	4	-	Oklahoma City, Okla. *	86	48	4	1
Trenton, N. J.	39	25	3	1	San Antonio, Tex.	145	80	8	2
Utica, N. Y.	25	20	1	1	Shreveport, La.	49	25	1	4
Yonkers, N. Y.	41	21	3	-	Tulsa, Okla.	87	58	4	6
<b>EAST NORTH CENTRAL</b>	2554	1494	115	70	<b>MOUNTAIN</b>	513	271	23	18
Akron, Ohio	73	46	4	-	Albuquerque, N. Mex.	58	27	1	8
Canton, Ohio	46	30	3	1	Colorado Springs, Colo.	24	9	1	1
Chicago, Ill.	673	368	36	17	Denver, Colo.	123	66	5	7
Cincinnati, Ohio	187	112	5	9	Las Vegas, Nev.	47	22	4	1
Cleveland, Ohio	200	102	16	4	Ogden, Utah	11	7	-	-
Columbus, Ohio	135	81	6	7	Phoenix, Ariz.	102	53	2	-
Dayton, Ohio	114	69	4	2	Pueblo, Colo.	23	14	2	-
Detroit, Mich.	338	181	13	7	Salt Lake City, Utah	60	34	5	-
Evansville, Ind.	48	38	-	1	Tucson, Ariz.	65	39	3	1
Fort Wayne, Ind.	53	30	5	1	<b>PACIFIC</b>	1655	1027	43	42
Gary, Ind.	36	18	4	2	Berkeley, Calif.	11	6	-	1
Grand Rapids, Mich.	65	50	-	3	Fresno, Calif.	57	24	5	-
Indianapolis, Ind.	115	71	4	-	Glendale, Calif.	42	33	2	2
Madison, Wis.	44	27	3	5	Honolulu, Hawaii	60	34	2	2
Milwaukee, Wis.	128	83	1	3	Long Beach, Calif.	114	77	2	3
Peoria, Ill.	27	22	1	1	Los Angeles, Calif.	527	338	10	13
Rockford, Ill.	38	14	2	3	Oakland, Calif.	89	48	3	2
South Bend, Ind.	44	26	1	2	Pasadena, Calif.	31	15	1	1
Toledo, Ohio	124	76	5	-	Portland, Oreg.	131	85	2	2
Youngstown, Ohio	66	50	2	2	Sacramento, Calif.	68	41	1	-
<b>WEST NORTH CENTRAL</b>	793	523	25	30	San Diego, Calif.	124	71	3	-
Des Moines, Iowa	53	37	1	-	San Francisco, Calif.	138	77	3	4
Duluth, Minn.	30	20	1	5	San Jose, Calif.	60	40	3	3
Kansas City, Kans.	27	15	-	-	Seattle, Wash.	120	85	1	1
Kansas City, Mo.	131	85	6	2	Spokane, Wash.	48	32	1	2
Lincoln, Nebr.	29	21	-	-	Tacoma, Wash.	35	21	4	4
Minneapolis, Minn.	107	61	6	3	<b>Total</b>	12,442	7,299	439	415
Omaha, Nebr.	60	35	4	-	<b>Expected Number</b>	12,374	7,047	541	394
St. Louis, Mo.	208	141	5	11	<b>Cumulative Total (includes reported corrections for previous weeks)</b>	306,644	182,049	11,182	13,785
St. Paul, Minn.	86	70	-	2					
Wichita, Kans.	62	38	2	7					

†Delayed report for week ending June 2, 1973

\*Estimate based on average percent of divisional total

**TRICHINOSIS — Continued**

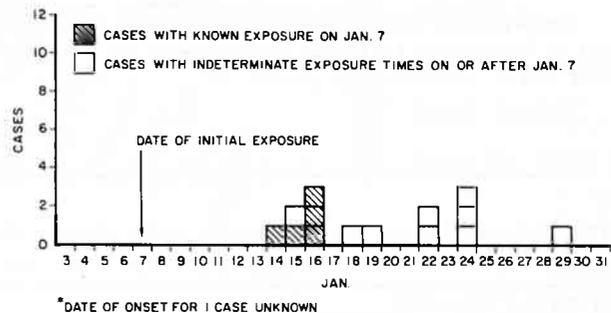
and were treated with thiabendazole; some also received steroids. There were no deaths. A survey of other household members of the 4 families identified 3 children with trichinosis bentonite flocculation titers but no signs or symptoms of illness.

Epidemiologic investigation revealed that on December 26, 1972, Family 1 had butchered 2 brood sows and 1 beef animal and 2 days later had made sausage. The ingredients were equal portions of ground beef and pork, salt, pepper, monosodium glutamate, and salt peter. The mixture was packed in natural casing, was not smoked, and hung dry until January 6, 1973, when it was divided between Families 1 and 2.

On January 7, Family 2 sponsored a card party, invited 2 other couples from Families 3 and 4, and served the sausage uncooked. Five members of these 3 families subsequently became ill with trichinosis (Figure 1). In addition, all members of Family 1 and children of Family 2 ate sausage in their school lunches and at other meals during the week of January 7. In all, 15 (75%) of 20 persons who ate the sausage became ill, and none of 5 persons who did not eat the sausage became ill. Samples of the remaining sausage and of pork chops from the same carcass were tested; all were positive for *Trichinella spiralis* larvae.

Further investigation revealed that Family 1 had a drove of 30 brood sows and approximately 300 barrows and gilts. On February 21, 1973, all 30 sows were bled; subsequent bentonite flocculation titer results were negative. Between February 21 and 28, 8 adult rats (*Rattus norvegicus*) were trapped, and tongue-diaphragm tissues were submitted for larval studies; these results were also negative. A history of the operation revealed no previous garbage feeding practices and generally a "closed" herd management for the past several years, ruling out possible trichinae exposure at another location.

Figure 1  
TRICHINOSIS CASES, BY DATE OF ONSET\*  
WEST POINT, NEBRASKA — JANUARY 1973



(Reported by Eugene L. Sucha, M.D., and Leonard J. Chadek, M.D., private physicians, West Point, Nebraska; William F. Rapp, M.S., Vector Control, H. E. McConnell, Dr. P.H., Laboratory Director, Russell W. Currier II, D.V.M., State Epidemiologist, and Henry D. Smith, M.D., Director of Health, Nebraska State Department of Health.)

**Editorial Note**

In this outbreak, the infection in the swine was most likely acquired on the farm, and the source of infection is presumed to have been an infected wild animal. With garbage-fed pigs diminishing as a source of trichinosis in man in the United States, the occurrence of *T. spiralis* in wild animals has gained significance in the evaluation of the disease. Unfortunately, with the exception of extensive studies in Iowa (1) and Alaska (2), little attention has been given to the relationship of wildlife and the perpetuation of trichinosis among farm-raised swine in this country.

**References**

- Zimmerman WJ, Hubbard ED: Trichiniasis in wildlife of Iowa. *Amer J Epidem* 90:84-92, 1969
- Rausch RL: Trichinosis in the Arctic. Springfield, Charles C. Thomas, 1970, pp. 348-373

### SURVEILLANCE SUMMARY

#### *SALMONELLA VIRCHOW* — England, Wales

Before 1967, human infections with *S. virchow* were uncommon in England and Wales. The records of the Salmonella and Shigella Reference Laboratory show an annual average of 11 identifications for the 5 years 1962-66. In 1967, 1968, and 1969 the annual figures were 51, 229, and 361, respectively.

In 1967 and 1968, most human isolations came from the northwest, and there was a large outbreak in the Liverpool area (1). In this outbreak, broiler chickens were shown to be the source of the infection, and investigators traced the serotype to a particular packing station, its broiler rearing units, and hatchery (2).

Further cases followed in the Midlands, and an outbreak caused the closure of a maternity unit (3). The mother, who introduced the infection into the unit, had consumed chickens which originated in the same packing station.

In 1969, the human cases were concentrated in the northwest, but there was some spread to the southern counties. In 1970, 1971, and 1972, there was a marked drop in

human infections due to *S. virchow*, with annual totals of 96, 95, and 80 recorded. Nevertheless, this serotype is still isolated from poultry, particularly broiler chickens.

(Reported by Dr. B. Rowe, Director, Salmonella and Shigella Reference Laboratory, Central Public Health Laboratory, Public Health Laboratory Service, London, England.)

**Editorial Note**

The cause for the recent emergence of *S. virchow* in the United States (MMWR, Vol. 22, No. 18) is still under investigation.

**References**

- Semple AB, Turner GC, Lowry DMO: Outbreak of food poisoning caused by *Salmonella virchow* in spit-roasted chicken. *Brit Med J* 4:801-803, 1968
- Brooksbank NH, Richards DW: *Salmonella virchow*. *State Vet J* 25:66-73, 1970
- Rowe B, Giles C, Brown GL: Outbreak of gastroenteritis due to *Salmonella virchow* in a maternity hospital. *Brit Med J* 3:561-564, 1969

INTERNATIONAL NOTES  
QUARANTINE MEASURES

The following change should be made in the "Supplement - Vaccination Certificate Requirements for International Travel," MMWR, Vol. 22, No. 17:

Angola

Insert the following note:  
Cholera - Angola recommends vaccination.

Errata

Vol. 22, No. 22, p. 192

In the article, "Quarantine Measures, Ryukyu Islands," line 2, correct the symbol < (less than) to > (greater than).

Vol. 22, No. 21, p. 184

In the Erratum, "Follow-up on Technical Problems with

FTA-ABS Test for Syphilis-Stability of Lyophilized Sorbent," correct the sentence to read: Studies by 2 commercial laboratories on the stability of liquid sorbent have shown that it has no measurable loss of activity when stored for periods of 24-36 months, thus confirming earlier studies (1).

The Morbidity and Mortality Weekly Report, circulation 35,000, is published by the Center for Disease Control, Atlanta, Ga.

Director, Center for Disease Control  
Director, Epidemiology Program, CDC  
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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.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting outbreaks or case investigations of current interest to health officials.

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