

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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Surveillance Summary

Trichinosis — United States, 1975

Two hundred eighty-four cases of trichinosis, including 1 fatality, were reported to CDC in 1975. This annual total is nearly 2.5 times higher than the mean number of cases reported during the previous 5 years. It also represents the highest annual incidence since 1961. The increase is associated with an unusually large number of common-source outbreaks.

While 24 states, the District of Columbia, and New York City reported at least 1 case, 85.6% (243) of the cases originated from only 7 states — Iowa, New Jersey, Illinois, Alaska, Connecticut, Massachusetts, and New York. The incidence of reported cases was 1.3 per million population for the entire United States.

Pork, mainly prepared as sausage, continued to be the major source of trichinosis infections in the United States; it accounted for 73.2% of the 254 cases for which a source was identified. Non-pork products were identified as the probable source of infection for the remaining 68 cases. Meat from wild animals (walrus and black bear) was responsible for 33 cases, and ground beef was identified as the probable source of infection for 34 cases. Although cattle are not considered a natural reservoir of *Trichinella spiralis* because they are herbivorous, beef products may be adulterated with pork through intentional or inadvertent mixing of beef and pork. Twenty-eight of the cases attributed to ground beef consumption were reported from New Jersey — a marked increase over previous years. To determine the frequency of pork adulteration of ground beef, the New Jersey State Health Department conducted a survey of retail meat markets in the state. It found evidence of pork in ground beef samples purchased at 3 of 4 stores which had been the suspected sources of products associated with cases and at 5 of 10 stores with no such association.

For 241 cases, the place where the suspect meat was obtained was reported. Of these, the source of meat for 181 cases (75.1%) was a supermarket, butcher shop, or other commercial outlet. Twenty-six (10.8%) patients had consumed the suspect meat items at a restaurant or other public eating place; illness in 18 of these cases was attributed to ground beef. The walrus and the black bear — which accounted for 33 cases — were obtained by hunting or trapping. No cases were attributed to meat obtained directly from a family farm.

Twenty separate common-source outbreaks, each in-

volving 2 or more cases, accounted for 69.4% of all cases reported in 1975 (Table 1). Ingestion of trichinae-infected walrus meat caused 28 cases in Alaskan Eskimos in what appears to have been the first reported outbreak caused by this host in North America. The meat items implicated as the causes of 10 of the outbreaks involving 132 cases were pork products, usually prepared as sausage. Ground beef was implicated as the cause of 5 outbreaks, including 1 involving 15 persons who became ill after eating rare hamburgers at a country club restaurant in New Jersey.

Common-source outbreaks due to pork products revealed that persons of German, Italian, Polish, or Portuguese ethnic ancestry were represented in disproportion to their numbers in the general United States' population. That certain national ancestry, particularly German or Italian, increases the risk of exposure to the parasite has been previously observed in the United States (1) and has been explained as a result of these group's preferences for pork products, especially sausage, prepared in a traditional manner which often does not result in the destruction of *T. spiralis*.

TABLE 1. Common-source outbreaks of Trichinosis, by state, month, and implicated meat item, United States, 1975

State	Number of Cases	Month of Onset	Implicated Meat Item
Iowa	67	December	Pork-Venison Sausage
Alaska	28	October	Walrus Meat
Illinois	24	March	Pork-Beef Sausage
New Jersey	15	June	Ground Beef
Massachusetts	14	November	Pork Sausage
Connecticut	8	December	Pork Sausage
California	5	October	Bear Meat
New York (State)	5	January	Pork Sausage
New Jersey	4	July	Ground Beef
New York (State)	4	January	Pork Sausage
New Jersey	3	November	Pork Sausage
New York (City)	3	January	Pork Spare Ribs
Pennsylvania	3	September	Ground Beef
Illinois	2	January	Unknown
Massachusetts	2	December	Pork Sausage
New Jersey	2	October	Ground Beef
New Jersey	2	December	Chinese Dumpling
New York (City)	2	May	Unknown
New York (State)	2	February	Ground Beef
Utah	2	March	Pork Sausage
Total	197		

Trichinosis — Continued

Editorial Note: Trichinosis in the United States has decreased markedly in recent decades, but it remains a public health problem. It became a reportable disease in 1947 at which time the mean annual incidence was well above 300 cases. Since 1950, the annual numbers of reported cases declined gradually until 1966 when they appeared to reach a constant level.

As a result of the New Jersey findings of pork adulteration of commercial ground beef, CDC initiated a preliminary survey in 12 states to determine an estimate of the degree of such adulteration. Participating local and state health department officials submitted 231 ground beef samples to CDC purchased June-September 1976 from 136

retail markets. Evidence of pork adulteration was demonstrated in 6% of samples from 6 states. State and federal regulations prohibit the presence of pork in ground beef products. For health considerations and because of religious beliefs, consumers should be made aware of the presence of pork in food products.

Reported by the Parasitic Diseases Div, Bur of Epidemiology, CDC.

References

1. Zimmermann WJ, Steele JH, Kagan IG: Trichinosis in the United States population 1966-70 — prevalence and epidemiologic factors. *Health Serv Rep* 88:606-623, 1973

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

Current Trends

Worldwide: Sporadic cases of influenza have been reported in Thailand. Six strains of influenza virus antigenically close to A/Victoria/3/75 have been isolated there from September 24 through October 26. No isolates of A/New Jersey/76-like virus have been reported.

Reported by the World Health Organization in the Weekly Epidemiological Record 51 (48):369, 1976.

United States: As previously reported (MMWR 25[48]), an isolate of an A/New Jersey/76 virus was made from an

Influenza — Worldwide

isolated case of influenza in a Wisconsin man. The clinically ill swine on this man's farm also yielded A/New Jersey/76 virus, but community investigation has indicated no secondary spread. There has been no indication of influenza activity elsewhere in Wisconsin.

Pneumonia and influenza mortality have remained within normal limits throughout the United States. Influenza

(Continued on page 399)

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

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

DISEASE	49th WEEK ENDING		MEDIAN 1971-1975	CUMULATIVE, FIRST 49 WEEKS		
	December 11, 1976	December 6, 1975		December 11, 1976	December 6, 1975	MEDIAN 1971-1975
Aseptic meningitis	49	84	63	3,046	3,939	4,071
Brucellosis	4	2	4	252	244	175
Chickenpox	3,939	2,834	---	166,452	132,901	---
Diphtheria	8	3	3	143	271	185
Encephalitis	10	34	30	1,321	2,537	1,447
Primary	3	5	5	251	287	262
Post-Infectious	341	268	200	13,854	11,111	8,436
Hepatitis, Viral	682	620	1,038	31,192	32,706	48,859
Type A	166	194	---	7,931	7,783	---
Type unspecified	8	9	7	434	396	396
Malaria	602	195	261	37,515	23,186	26,042
Measles (rubeola)	36	25	25	1,440	1,343	1,289
Meningococcal infections, total	35	25	25	1,429	1,315	1,269
Civilian	1	---	---	11	28	29
Military	460	926	1,522	36,346	54,972	65,556
Mumps	13	20	---	891	1,493	---
Pertussis	120	113	177	11,674	15,883	23,890
Rubella (German measles)	2	1	3	62	93	93
Tetanus	681	705	---	30,839	31,152	---
Tuberculosis	2	3	3	130	108	136
Tularemia	5	21	8	373	347	400
Typhoid fever	13	2	2	874	802	627
Typhus, tick-borne (Rky. Mt. spotted fever)	---	---	---	---	---	---
Venereal Diseases:	---	---	---	---	---	---
Gonorrhea	19,398	19,484	---	947,035	938,772	---
Civilian	643	516	---	27,495	27,313	---
Military	378	397	---	22,495	23,987	---
Syphilis, primary and secondary	7	4	---	323	331	---
Civilian	---	---	---	---	---	---
Military	43	23	53	2,750	2,261	3,191
Rabies in animals	---	---	---	---	---	---

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	2	Poliomyelitis, total:	8
Botulism: N. Car. 1.	28	Paralytic: *	7
Congenital rubella syndrome: * Mich. 1, Minn. 1	24	Psittacosis: *	61
Leprosy: Illinois 1	124	Rabies in man:	2
Leptospirosis: Ups. N.Y. 1	42	Trichinosis:	81
Plague:	15	Typhus, murine:	50

* Delayed reports: Cong. Rubella: Syn.: N. Hamp. 1; Polio, Para: Ark. 1; Psittacosis: Wisc. 2

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending December 11, 1976 and December 6, 1975 - 49th Week

AREA REPORTING	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
	1976	1976	1976	1976	CUM. 1976	Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified	1976	CUM. 1976
						1976	1975						
UNITED STATES	49	4	3,939	8	143	10	34	3	341	682	166	8	434
NEW ENGLAND	-	-	436	-	-	1	-	-	8	16	11	-	21
Maine	-	-	13	-	-	-	-	-	-	2	-	-	-
New Hampshire*	-	-	11	-	-	-	-	-	-	-	-	-	-
Vermont	-	-	14	-	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	184	-	-	-	-	-	3	3	11	-	11
Rhode Island	-	-	39	-	-	-	-	-	2	4	-	-	4
Connecticut	-	-	175	-	-	1	-	-	3	7	-	-	6
MIDDLE ATLANTIC	7	-	309	-	-	3	2	-	79	108	22	4	97
Upstate New York	4	-	236	-	-	2	1	-	24	41	5	1	22
New York City	2	-	32	-	-	-	-	-	15	17	-	1	41
New Jersey	-	-	NN	-	-	-	-	-	29	40	15	-	15
Pennsylvania	1	-	41	-	-	1	1	-	11	10	2	2	19
EAST NORTH CENTRAL ..	3	-	1,982	1	2	1	14	-	66	134	25	-	22
Ohio	-	-	296	-	1	-	10	-	8	18	-	-	7
Indiana	-	-	195	-	-	-	-	-	3	4	9	-	-
Illinois	-	-	234	-	-	-	-	-	28	58	7	-	4
Michigan	3	-	672	-	-	1	4	-	22	50	8	-	9
Wisconsin	-	-	385	1	1	-	-	-	5	4	1	-	2
WEST NORTH CENTRAL ..	4	-	385	-	4	-	6	-	18	20	3	-	27
Minnesota	-	-	-	-	-	-	1	-	2	8	-	-	4
Iowa	-	-	293	-	-	-	-	-	9	4	-	-	-
Missouri	4	-	-	-	1	-	5	-	2	4	2	-	9
North Dakota	-	-	87	-	-	-	-	-	-	-	-	-	1
South Dakota	-	-	-	-	3	-	-	-	1	1	-	-	3
Nebraska	-	-	5	-	-	-	-	-	-	-	1	-	5
Kansas*	-	-	-	-	-	-	-	-	4	3	-	-	5
SOUTH ATLANTIC	12	1	187	-	1	1	3	-	36	96	21	-	67
Delaware	-	-	-	-	-	-	-	-	1	-	-	-	-
Maryland	1	-	6	-	-	-	-	-	3	4	3	-	12
District of Columbia ..	1	-	2	-	-	-	-	-	1	1	-	-	9
Virginia*	1	-	13	-	-	-	-	-	4	6	3	-	10
West Virginia	-	-	108	-	1	-	-	-	-	3	-	-	3
North Carolina	4	-	NN	-	-	-	3	-	11	15	4	-	6
South Carolina	1	-	6	-	-	-	-	-	-	2	3	-	1
Georgia	-	-	-	-	-	-	-	-	-	44	-	-	5
Florida*	4	1	52	-	-	1	-	-	16	21	8	-	21
EAST SOUTH CENTRAL ..	3	2	75	-	-	-	8	-	14	40	4	1	4
Kentucky	-	-	51	-	-	-	5	-	-	8	3	1	1
Tennessee	-	1	NN	-	-	-	1	-	9	23	-	-	-
Alabama	2	1	22	-	-	-	-	-	5	1	1	-	2
Mississippi	1	-	2	-	-	-	2	-	-	8	-	-	1
WEST SOUTH CENTRAL ..	7	1	214	-	1	3	1	2	29	74	29	-	21
Arkansas	-	-	-	-	-	-	-	-	-	5	2	-	2
Louisiana	-	-	NN	-	-	-	-	-	-	2	8	-	2
Oklahoma	3	-	53	-	-	1	-	2	8	24	6	-	3
Texas*	4	1	161	-	1	2	1	-	21	43	13	-	14
MOUNTAIN	-	-	150	1	6	-	-	-	20	91	19	-	17
Montana	-	-	28	-	-	-	-	-	1	8	2	-	-
Idaho	-	-	18	-	-	-	-	-	1	24	1	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	1	-	-
Colorado	-	-	86	-	3	-	-	-	9	14	8	-	10
New Mexico	-	-	17	-	2	-	-	-	1	21	-	-	1
Arizona	-	-	NN	1	1	-	-	-	6	15	4	-	5
Utah	-	-	1	-	-	-	-	-	2	2	3	-	-
Nevada*	-	-	-	-	-	-	-	-	-	7	-	-	1
PACIFIC	13	-	201	6	129	1	-	1	71	103	32	3	158
Washington	-	-	190	6	121	-	-	-	2	2	5	-	4
Oregon	-	-	-	-	-	-	-	-	6	11	5	-	7
California*	10	-	-	-	1	1	-	1	61	89	22	3	145
Alaska	-	-	1	-	6	-	-	-	-	-	-	-	-
Hawaii	3	-	10	-	1	-	-	-	2	1	-	-	2
Guam*	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	NA	NA	NA	NA	1	NA	-	-	-	NA	NA	NA	1
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-	-	-

NN: Not notifiable

NA: Not available

*Delayed reports: Asep. Meng.: Nev. 1; Brucellosis: Kans. add 23; Chickenpox: N. Hamp. add 10, Fla. delete 1, Calif. add 11, Guam add 3; Hep. B: Tex. add 2; Hep. A: Va. delete 1, Fla. delete 3, Tex. add 33, Nev. add 7; Hep. unsp.: Va. delete 2, Tex. add 1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending December 11, 1976 and December 6, 1975 — 49th Week

REPORTING AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1976	CUMULATIVE		1976	CUMULATIVE		1976	CUM. 1976	1976	1976	CUM. 1976	CUM. 1976
		1976	1975		1976	1975						
UNITED STATES	602	37,515	23,186	36	1,440	1,343	460	35,346	13	120	11,674	62
NEW ENGLAND	3	501	352	3	69	78	27	1,562	-	6	315	2
Maine	1	10	16	-	1	7	2	128	-	-	14	-
New Hampshire	-	9	22	-	5	4	1	28	-	-	12	-
Vermont	1	144	75	-	6	2	-	48	-	-	6	-
Massachusetts	1	39	111	2	21	28	2	178	-	1	147	1
Rhode Island	-	15	3	1	8	6	-	494	-	1	7	-
Connecticut	-	284	125	-	28	31	22	686	-	4	129	1
MIDDLE ATLANTIC	132	7,278	2,236	7	215	139	41	3,293	2	16	2,349	9
Upstate New York	7	2,967	980	5	84	44	20	428	-	11	624	4
New York City	2	483	165	1	54	35	7	1,723	2	-	154	4
New Jersey	4	624	476	-	31	21	10	555	-	4	1,357	-
Pennsylvania	119	3,204	615	1	46	39	4	587	-	1	214	1
EAST NORTH CENTRAL ..	309	16,223	6,946	4	180	198	238	14,879	2	45	4,469	5
Ohio	39	618	106	-	68	66	68	2,144	1	2	351	2
Indiana	124	3,930	489	3	16	10	20	1,573	-	15	951	-
Illinois	21	1,752	1,858	-	20	25	14	1,882	-	14	1,216	-
Michigan	48	6,045	3,180	1	64	75	25	5,259	1	6	1,471	3
Wisconsin	77	3,878	1,313	-	12	22	111	4,021	-	8	480	-
WEST NORTH CENTRAL ..	2	1,394	5,122	-	86	89	36	3,816	-	2	432	7
Minnesota	2	427	227	-	12	19	1	550	-	-	31	2
Iowa*	-	37	665	-	10	7	28	1,524	-	1	86	-
Missouri	-	199	271	-	39	46	5	365	-	-	46	2
North Dakota	-	3	1,061	-	3	2	1	128	-	-	3	1
South Dakota	-	4	356	-	3	1	-	11	-	-	21	1
Nebraska	-	55	395	-	5	3	1	111	-	-	3	-
Kansas	-	659	2,147	-	14	11	-	1,127	-	1	242	1
SOUTH ATLANTIC	16	2,230	446	9	281	263	19	2,716	2	1	1,329	10
Delaware	-	130	35	-	9	8	2	74	-	-	36	-
Maryland	-	715	62	1	23	32	1	709	-	-	3	3
District of Columbia ..	-	13	1	-	4	5	-	107	-	-	46	-
Virginia	14	815	40	2	34	21	-	217	-	1	243	1
West Virginia	2	210	202	-	8	5	6	827	-	-	322	-
North Carolina	-	17	2	-	52	49	2	388	2	-	18	-
South Carolina	-	4	-	-	36	37	-	46	-	-	599	1
Georgia	-	4	40	-	32	15	1	3	-	-	2	-
Florida	-	322	64	6	83	91	7	345	-	-	60	5
EAST SOUTH CENTRAL ..	16	947	361	6	136	181	33	3,054	3	6	405	9
Kentucky	-	758	150	1	24	76	-	985	2	2	185	2
Tennessee	16	172	178	2	60	60	29	1,665	1	4	207	6
Alabama	-	-	5	3	38	31	4	344	-	-	2	1
Mississippi	-	17	28	-	14	14	-	60	-	-	11	-
WEST SOUTH CENTRAL ..	40	881	420	4	214	206	41	2,626	1	28	621	11
Arkansas*	18	19	-	-	14	14	-	81	-	-	190	-
Louisiana	15	301	2	-	41	40	1	28	1	-	92	2
Oklahoma	1	307	148	2	23	14	21	805	-	1	80	-
Texas	6	254	270	2	136	138	19	1,712	-	27	259	9
MOUNTAIN	71	5,293	1,562	-	47	39	5	1,218	-	3	500	2
Montana	37	364	50	-	6	8	-	25	-	-	236	-
Idaho	1	2,024	24	-	7	5	4	470	-	-	18	-
Wyoming	-	4	3	-	-	1	-	1	-	-	2	-
Colorado	28	348	1,163	-	12	10	1	260	-	-	31	-
New Mexico	-	16	15	-	4	4	-	127	-	-	31	-
Arizona	5	234	82	-	10	3	-	-	-	-	-	2
Utah	-	2,237	197	-	6	7	-	218	-	3	162	-
Nevada*	-	66	28	-	2	1	-	117	-	-	20	-
PACIFIC	13	2,768	5,741	3	212	150	20	3,182	3	13	1,254	7
Washington	3	360	293	-	35	22	2	920	-	6	220	1
Oregon	-	175	199	-	19	8	1	404	-	1	139	1
California	10	2,216	5,184	3	134	111	13	1,783	3	6	872	5
Alaska	-	11	-	-	22	7	1	34	-	-	3	-
Hawaii	-	6	65	-	3	2	3	41	-	-	20	-
Guam*	-	16	36	-	1	3	-	22	-	-	6	-
Puerto Rico	NA	463	712	-	4	1	NA	753	NA	NA	10	7
Virgin Islands	-	17	8	-	2	-	4	61	-	-	12	2

NA: Not available

*Delayed reports: Mumps: Iowa add 3, Nev. add 1, Guam add 1; Tetanus: Ark. add 1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending December 11, 1976 and December 6, 1975 - 49th Week

REPORTING AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1976	CUM. 1976	CUM. 1976	1976	CUM. 1976	1976	CUM. 1976	1976	CUMULATIVE		1976	CUMULATIVE		CUM. 1976
									1976	1975		1976	1975	
UNITED STATES	681	30,839	130	5	373	13	874	19,398	947,035	938,772	378	22,495	23,987	2,750
NEW ENGLAND	21	1,067	1	1	26	-	9	697	27,040	26,133	15	781	809	71
Maine	1	73	-	-	-	-	-	34	2,263	2,124	-	22	35	35
New Hampshire	3	45	-	-	2	-	-	13	818	670	-	10	15	1
Vermont	1	33	-	1	1	-	-	17	678	670	-	9	7	-
Massachusetts	7	626	1	-	16	-	4	398	12,845	12,140	10	566	521	25
Rhode Island	1	80	-	-	-	-	3	29	1,905	2,018	-	19	23	5
Connecticut	8	210	-	-	7	-	2	206	8,531	8,511	5	155	200	5
MIDDLE ATLANTIC	105	5,619	3	1	65	3	68	2,356	109,204	107,486	55	3,711	4,367	70
Upstate New York	25	894	2	-	9	-	26	306	17,764	19,262	4	239	389	16
New York City	47	2,166	1	-	34	-	5	1,096	48,184	44,603	37	2,303	2,568	-
New Jersey	22	1,147	-	-	13	-	13	454	16,895	16,061	6	556	686	31
Pennsylvania	11	1,412	-	1	9	3	24	500	26,361	27,560	8	613	724	23
EAST NORTH CENTRAL ..	99	4,435	2	-	41	-	23	3,193	151,282	155,753	43	2,059	1,969	183
Ohio*	42	875	-	-	13	-	18	842	37,869	43,676	9	468	484	34
Indiana	8	488	-	-	4	-	-	175	14,807	13,179	3	106	144	23
Illinois	27	1,555	1	-	12	-	-	1,248	51,969	54,194	20	1,145	938	28
Michigan*	18	1,267	-	-	9	-	5	757	32,751	29,782	10	233	326	7
Wisconsin*	4	250	1	-	3	-	-	171	13,886	14,922	1	107	77	91
WEST NORTH CENTRAL ..	25	1,136	30	-	21	-	28	864	49,985	47,611	3	424	589	658
Minnesota	-	192	3	-	11	-	-	148	8,772	9,499	-	96	108	158
Iowa	1	109	1	-	1	-	3	106	6,124	6,862	-	40	68	128
Missouri*	16	569	22	-	5	-	15	370	20,135	17,402	2	170	262	68
North Dakota	-	32	-	-	-	-	-	21	801	758	-	-	5	128
South Dakota*	2	55	1	-	1	-	3	29	1,490	1,798	-	6	5	94
Nebraska*	-	47	-	-	2	-	-	97	4,198	4,166	-	37	19	16
Kansas*	6	132	3	-	1	-	7	93	8,465	7,126	1	75	122	66
SOUTH ATLANTIC	169	6,521	10	-	47	4	431	4,751	226,452	229,380	116	6,415	7,311	417
Delaware	1	70	-	-	-	-	1	69	3,218	3,268	-	63	83	21
Maryland	15	883	1	-	5	-	21	678	29,890	28,024	5	501	539	11
District of Columbia ..	9	294	-	-	2	-	-	236	12,807	13,283	7	556	647	-
Virginia	27	965	3	-	5	2	100	405	23,435	22,563	12	656	579	55
West Virginia	5	256	-	-	5	-	8	93	3,017	2,943	-	22	55	15
North Carolina*	37	1,209	3	-	2	2	192	618	33,812	32,984	9	1,130	974	14
South Carolina*	15	484	-	-	5	-	50	402	20,906	21,547	9	354	519	5
Georgia*	18	810	2	-	4	-	56	881	44,122	43,021	19	764	1,001	209
Florida*	42	1,550	1	-	19	-	3	1,369	55,245	61,747	55	2,369	2,914	87
EAST SOUTH CENTRAL ..	60	2,655	19	-	15	6	166	1,497	83,628	79,273	13	862	1,112	129
Kentucky	6	556	1	-	6	5	39	200	11,026	10,283	-	118	163	62
Tennessee	31	881	18	-	8	1	93	547	33,535	31,411	4	295	421	46
Alabama	14	768	-	-	1	-	14	434	23,208	22,096	5	181	252	21
Mississippi	9	450	-	-	-	-	20	316	15,859	15,483	4	268	276	-
WEST SOUTH CENTRAL ..	81	3,719	48	-	18	-	139	2,600	119,750	115,652	63	2,707	2,158	617
Arkansas	6	456	27	-	5	-	21	168	11,145	12,388	5	99	66	146
Louisiana	1	588	3	-	3	-	-	461	17,388	20,118	13	554	499	7
Oklahoma*	10	363	8	-	1	-	97	219	11,693	11,276	1	92	87	166
Texas	64	2,312	10	-	9	-	21	1,752	79,524	71,870	44	1,962	1,506	298
MOUNTAIN	22	866	5	1	21	-	4	795	37,101	37,997	3	724	545	196
Montana	2	47	2	-	2	-	1	41	1,941	1,979	-	12	6	86
Idaho*	-	31	-	-	1	-	1	25	2,060	1,970	-	34	16	-
Wyoming	-	18	1	-	-	-	-	17	797	906	-	12	10	1
Colorado	-	139	1	1	6	-	1	288	9,775	10,265	2	154	95	53
New Mexico	3	165	-	-	2	-	1	78	6,841	6,688	1	269	147	4
Arizona	12	382	-	-	9	-	-	248	10,889	9,977	-	197	201	31
Utah	-	44	1	-	1	-	-	35	2,194	2,366	-	20	16	21
Nevada	5	40	-	-	-	-	-	63	2,604	3,846	-	26	54	-
PACIFIC	99	4,821	12	2	119	-	6	2,645	142,593	139,487	67	4,812	5,127	409
Washington	-	400	2	-	5	-	3	252	11,971	12,626	-	146	181	8
Oregon	6	191	1	-	1	-	-	180	10,037	10,641	3	107	137	11
California	76	3,532	9	2	107	-	3	2,108	113,403	110,538	63	4,445	4,751	348
Alaska*	-	90	-	-	-	-	-	72	4,103	3,428	-	24	6	42
Hawaii	17	608	-	-	6	-	-	33	3,079	2,254	1	90	52	-
Guam*	-	40	-	-	1	-	-	-	290	391	-	2	17	-
Puerto Rico	NA	363	-	NA	2	NA	-	NA	2,346	2,747	NA	532	679	40
Virgin Islands	-	6	-	-	-	-	-	3	219	219	1	52	41	-

NA: Not available

*Delayed reports: TB: Mich. delete 1, Mo. delete 1, S. Dak. add 2, Kans. delete 1, N. Car. delete 5, Ga. add 12, Fla. delete 2, Okla. delete 1, Guam add 4; T. remia: Wisc. delete 1; Typhoid fever: Ohio delete 1; GC: Neb. delete 4 (civ.) add 1 (mil.), S. Car. add 611 (civ.) add 108 (mil.), Guam add 6 (civ.); Syphilis: S. Car. add 7, Fla. delete 1, Idaho delete 11, Alaska add 1; An. rabies: S. Dak. add 21, Ga. add 4

Table IV
Deaths in 121 United States Cities*
Week Ending December 11, 1976 - 49th Week

REPORTING AREA	ALL CAUSES					Pneu- monia and Influenza ALL AGES	REPORTING AREA	ALL CAUSES					Pneu- monia 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	670	448	160	27	17	39	SOUTH ATLANTIC	1,192	694	342	88	31	63
Boston, Mass.	187	107	55	11	8	9	Atlanta, Ga.	131	74	39	13	1	3
Bridgeport, Conn.	49	36	9	3	-	2	Baltimore, Md.	229	128	64	19	7	3
Cambridge, Mass.	33	23	8	2	-	2	Charlotte, N. C.	67	40	20	5	2	4
Fall River, Mass.	36	30	4	2	-	-	Jacksonville, Fla.	118	74	26	6	6	14
Hartford, Conn.	47	27	14	2	2	2	Miami, Fla.	102	60	28	11	-	6
Lowell, Mass.	21	8	8	2	2	2	Norfolk, Va.	65	36	19	2	4	3
Lynn, Mass.	21	17	3	1	-	1	Richmond, Va.	104	57	35	9	2	8
New Bedford, Mass.	24	19	4	-	-	-	Savannah, Ga.	53	28	20	3	1	7
New Haven, Conn.	55	33	16	-	3	-	St. Petersburg, Fla.	89	70	13	1	4	4
Providence, R.I.	58	40	16	1	-	7	Tampa, Fla.	78	48	25	3	-	7
Somerville, Mass.	12	12	-	-	-	-	Washington, D. C.	88	42	34	10	1	2
Springfield, Mass.	40	33	5	-	-	2	Wilmington, Del.	68	37	19	6	3	2
Waterbury, Conn.	26	17	8	1	-	1							
Worcester, Mass.	61	46	18	2	2	11							
MIDDLE ATLANTIC	3,094	1,895	844	179	81	134	EAST SOUTH CENTRAL	794	445	233	40	35	35
Albany, N. Y.	60	43	7	5	4	4	Birmingham, Ala.	134	79	32	11	6	1
Allentown, Pa.	27	19	6	1	-	-	Chattanooga, Tenn.	58	40	14	1	1	4
Buffalo, N. Y.	141	80	51	5	2	11	Knoxville, Tenn.	44	26	14	3	-	2
Camden, N. J.	32	20	4	5	1	-	Louisville, Ky.	109	56	34	5	9	6
Elizabeth, N. J.	22	13	9	-	-	-	Memphis, Tenn.	185	104	58	11	4	7
Erie, Pa.	36	20	15	-	1	2	Mobile, Ala.	91	44	27	2	9	3
Jersey City, N. J.	49	24	19	2	2	1	Montgomery, Ala.	59	34	15	3	4	4
Newark, N. J.	61	22	22	3	9	7	Nashville, Tenn.	114	62	39	4	2	8
New York City, N. Y.	1,516	926	397	104	41	54	WEST SOUTH CENTRAL	1,272	685	367	90	76	41
Paterson, N. J.	32	18	8	4	1	-	Austin, Tex.	55	26	18	8	2	3
Philadelphia, Pa.	496	293	148	29	7	17	Baton Rouge, La.	37	22	8	3	3	-
Pittsburgh, Pa.	173	105	53	6	4	11	Corpus Christi, Tex.	40	24	9	2	5	2
Reading, Pa.	46	35	8	1	1	3	Dallas, Tex.	165	92	44	14	7	2
Rochester, N. Y.	140	97	35	2	3	11	El Paso, Tex.	70	35	20	4	7	6
Schenectady, N. Y.	23	18	5	-	-	1	Fort Worth, Tex.	80	49	18	6	4	4
Scranton, Pa.	48	36	7	3	1	2	Houston, Tex.	365	176	120	35	17	3
Syracuse, N. Y.	85	54	23	3	4	2	Little Rock, Ark.	66	39	22	2	2	5
Trenton, N. J.	46	23	18	3	-	1	New Orleans, La.	122	72	32	3	11	-
Utica, N. Y.	24	19	5	-	-	3	San Antonio, Tex.	146	77	45	4	11	10
Yonkers, N. Y.	37	30	4	3	-	4	Shreveport, La.	62	37	15	4	4	4
							Tulsa, Okla.	64	36	16	5	3	2
EAST NORTH CENTRAL	2,488	1,479	671	149	110	84	MOUNTAIN	526	304	123	39	34	21
Akron, Ohio	76	48	16	6	4	-	Albuquerque, N. Mex.	51	27	13	6	2	5
Canton, Ohio	37	20	12	4	1	1	Colorado Springs, Colo.	35	18	13	2	2	3
Chicago, Ill.	587	336	169	40	24	16	Denver, Colo.	131	70	28	12	15	6
Cincinnati, Ohio	169	93	46	16	10	4	Las Vegas, Nev.	25	15	7	-	-	-
Cleveland, Ohio	185	98	66	10	7	2	Ogden, Utah	18	14	3	-	-	2
Columbus, Ohio	132	80	33	8	2	6	Phoenix, Ariz.	139	83	29	10	8	-
Dayton, Ohio	107	61	28	7	7	4	Pueblo, Colo.	17	12	1	3	-	4
Detroit, Mich.	315	183	86	22	13	6	Salt Lake City, Utah	48	30	13	-	4	-
Evansville, Ind.	53	32	14	2	4	6	Tucson, Ariz.	62	35	16	6	3	1
Fort Wayne, Ind.	80	60	13	2	2	10							
Gary, Ind.	21	8	6	7	-	2	PACIFIC	1,761	1,102	424	106	78	38
Grand Rapids, Mich.	73	56	12	2	3	6	Berkeley, Calif.	15	9	4	2	-	-
Indianapolis, Ind.	176	101	47	9	10	3	Fresno, Calif.	50	30	8	7	2	1
Madison, Wis.	34	21	7	2	3	3	Glendale, Calif.	22	13	8	1	-	-
Milwaukee, Wis.	127	81	38	2	4	1	Honolulu, Hawaii	51	28	14	3	5	1
Peoria, Ill.	52	37	10	-	5	2	Long Beach, Calif.	105	70	24	4	3	2
Rockford, Ill.	49	29	11	3	2	5	Los Angeles, Calif.	605	357	155	41	32	13
South Bend, Ind.	47	28	15	1	1	1	Oakland, Calif.	85	51	21	6	6	1
Toledo, Ohio	112	68	29	5	6	6	Pasadena, Calif.	38	29	6	2	1	-
Youngstown, Ohio	56	39	13	1	2	-	Portland, Oreg.	139	96	28	5	8	-
WEST NORTH CENTRAL	849	558	182	43	42	33	Sacramento, Calif.	62	45	12	1	4	2
Des Moines, Iowa	79	59	12	3	3	-	San Diego, Calif.	116	71	30	5	6	2
Duluth, Minn.	19	14	3	-	1	4	San Francisco, Calif.	185	109	51	11	6	3
Kansas City, Kans.	31	12	9	5	3	1	San Jose, Calif.	61	41	11	6	2	1
Kansas City, Mo.	144	95	32	8	6	5	Seattle, Wash.	139	91	35	7	1	6
Lincoln, Nebr.	33	27	4	-	-	3	Spokane, Wash.	49	34	8	4	1	5
Minneapolis, Minn.	103	65	22	5	6	3	Tacoma, Wash.	39	28	9	1	1	1
Omaha, Nebr.	71	48	15	4	2	1							
St. Louis, Mo.	207	145	35	12	12	2	TOTAL	12,646	7,610	3,346	761	504	488
St. Paul, Minn.	76	47	19	3	3	1	Expected Number	11,998	7,309	3,112	755	409	429
Wichita, Kans.	86	46	31	3	6	13							

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

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.

Influenza — Continued

B virus has been recovered from isolated patients with influenza in California and Texas. No isolates of A/Victoria/75 or other isolates of A/New Jersey/76 have been reported since the update 2 weeks ago.

During the current National Influenza Immunization Program, a total of 34,895,804 inoculations have been given to those over 18 in the civilian populations, as of December 4. In addition, 475,797 inoculations have been administered by the armed forces. Slightly over 25% of the

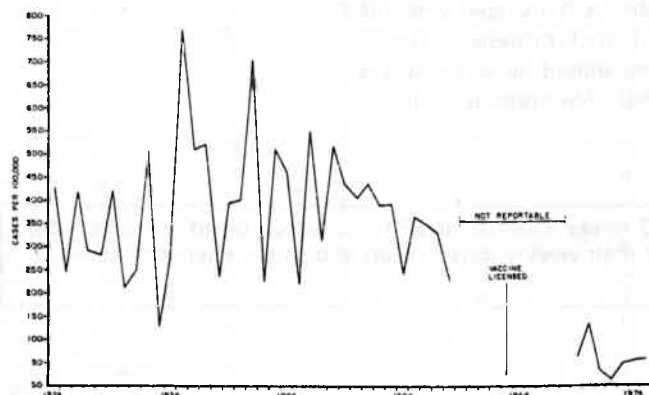
population has been immunized nationwide. The following states and territories have immunized over half of their population: Trust Territory of the Pacific Islands, Wyoming, Puerto Rico, North Dakota, South Dakota, Minnesota, Missouri, Utah, and Alaska.

Reported by HG Skinner, MD, State Epidemiologist, Wisconsin Dept of Health and Social Services, J Chin, MD, State Epidemiologist, California Dept of Health, C Webb, MD, Acting State Epidemiologist, Texas Dept of Health Resources; and the National Influenza Immunization Program, CDC.

*International Notes***Measles — Canada, 1924-1975**

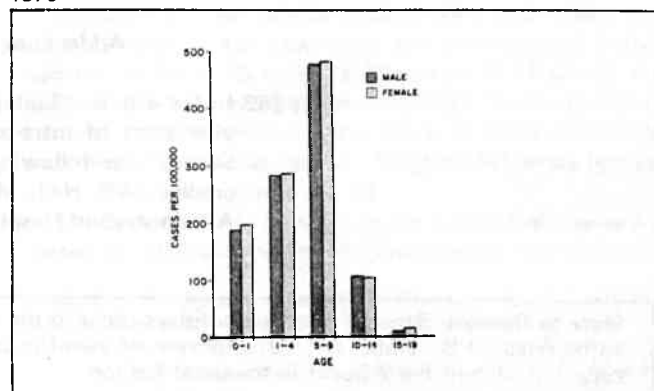
Measles has been officially notifiable in Canada since 1924, with the exception of a 10-year hiatus from 1959 to 1968. Prior to measles vaccine licensure in 1963, the incidence varied from approximately 100 to 800 cases/100,000 population with major epidemics in 1935 and 1941 (Figure 1). Since the mid-1960s, when measles vaccine became generally available, measles incidence has been reduced to approximately 20% of the levels of the 1950s. The number of measles deaths in Canada has declined in the past 25 years as the incidence of measles has been reduced. The seasonal pattern of measles incidence is similar to the United States; there are peaks in the winter and spring months and low points during the late summer and early fall.

FIGURE 1. Reported cases of measles, Canada, 1924-1975



Age-specific measles incidence is available for 1970. In that year, 85% of cases were reported in children less than 10 and 99% in those under 20. Age-specific attack rates for 1970 show the highest incidence in 5- to 9-year-olds followed by 1- to 4-year-olds. By 1974, the age distribution had shifted; in that year 1- to 4-year-olds accounted for the highest incidence followed by 5- to 9-year-olds and 10- to 14-year-olds. Males and females were equally affected (Figure 2). The age distribution of measles deaths indicates that the 0- to 1-year-old group is at highest risk from the disease.

FIGURE 2. Age- and sex-specific attack rates for measles, Canada, 1970



Reported by F White, MD, P Varughese, DVM, and R Mathias, MD, Bureau of Epidemiology, Laboratory Center for Disease Control, Ottawa, in Canada Diseases Weekly Report 2(28): 109-112, 1976.

*Epidemiologic Notes and Reports***Botulism — Alaska**

Three cases of Type A botulism were reported recently from Alaska. Two of the patients have recovered; the third is improving.

The index patient was a 24-year-old Alaskan woman from Angoon who purchased a pint jar of fermented salmon eggs on September 6, 1976, and shared them with her 2 sisters, ages 23 and 14. Over the next 3 days the 2 older women developed nausea, dry mouth, blurred vision,

dysphagia, dysphonia, weakness, abdominal fullness, dizziness, and shortness of breath. The younger sister complained of dysphagia, dizziness, dry mouth, and sore throat. On September 9, the clinical diagnosis of botulism was made. The index patient, who was breast-feeding her 8-month-old daughter, required respiratory support and was intubated shortly after her arrival at the hospital. The baby showed no signs of illness and was placed under close obser-

Botulism — Continued

vation. The 3 sisters were treated with trivalent botulinum antitoxin.

Epidemiologic investigation revealed that the 3 women lived in separate houses and did not share meals. The only food eaten in common was the jar of fermented salmon eggs purchased and eaten September 6.

The index patient, who required respiratory support for 2 weeks, ate three-fourths of the jar of eggs, while the 14-year-old sister who ate only 5 spoonfuls of eggs, had mild symptoms.

The eggs were part of a batch prepared by another woman in Angoon, who had obtained them during the last week in August. They were soaked overnight in water, then cleaned, salted, and placed in a 1-gallon jar and 3 smaller jars. They were sealed with waxed paper under the lids, placed in a corner of the kitchen, and kept at room temperature while they fermented. On September 6, approximately 20 people ate eggs from the large jar. One of the smaller jars was sold to the 24-year-old index patient; the other 2 jars were given to friends. On September 9, all persons who had eaten eggs from any of the jars were interviewed, given a physical examination, and had blood drawn for botulinum toxin assay. No additional cases were discovered. Intensive surveillance was maintained in the village, but no further cases were detected.

Type A botulinum toxin was found in the serum of the 24-year-old woman, in the stool of the 23-year-old patient,

and in the left-over salmon eggs from the implicated jar. No toxin was recovered from a sample of breast milk obtained from the index patient approximately 4 to 5 hours after administration of trivalent antitoxin. No toxin was detected in any of the 21 people who ate salmon eggs from the non-implicated jars.

The 2 younger sisters have recovered. The index patient is slowly improving. Her 8-month-old baby has shown no sign of disease.

This is the third outbreak of botulism in Alaska in 1976; the previous 2 were due to type E toxin. All 3 outbreaks involved native fermented foods considered delicacies in parts of Alaska.

Reported by J Jim, B Johnson, Angoon; D Funk, MD, T Millerburg, T Silver, MD, USPHS Hospital, Mt. Edgecumbe; M Bixby, JP Mid-daugh, MD, Acting State Epidemiologist, Alaska Dept of Health and Social Services; Anaerobe Section, Bacteriology Div. Bur of Laboratories, CDC.

Editorial Note: Although type A botulism is the most common type in the western states, this is only the second outbreak of type A botulism reported from Alaska, where type E predominates. The nursing infant failed to develop botulism, even though the mother had severe disease. In the experience of the Anaerobe Section, Bureau of Laboratories, CDC, breast milk from mothers ill with botulism has rarely been examined for toxin. When, as in this instance, samples have been tested, they have not demonstrated detectable levels of botulinum toxin.

Addendum, Vol. 25, No. 46

p369 In the article, "Endophthalmitis Associated with Implantation of Intra-ocular Lens Prosthesis — United States," the following name should be added to the credits: WH Hall, MD, PhD, Minneapolis Veterans Administration Hospital.

Note to Readers: Because 2 federal holidays occur in the next 2 weeks issues 50 and 51 will be combined into one issue, to be released December 31, 1976. States are asked to submit their weekly data as soon as possible after reports are received in each of the 2 weeks in the usual fashion.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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