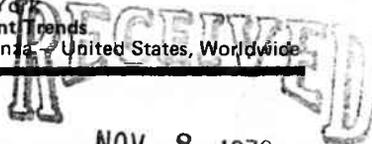


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## MORBIDITY AND MORTALITY WEEKLY REPORT

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### Epidemiologic Notes and Reports

#### Laboratory-Associated Typhoid Fever

In early 1979, CDC was informed that a case of typhoid fever had occurred in a microbiology laboratory technician who had worked with a *Salmonella typhi* culture as part of a laboratory-proficiency exercise. Subsequent investigation and review revealed 2 other cases associated with that exercise, 1 of several nationwide programs for proficiency testing of microbiology laboratory personnel for the purpose of licensure or continuing education. To determine if this was an ongoing problem, all reported cases of typhoid fever since January 1977 were reviewed. In addition, state epidemiologists were alerted to the situation and asked to report any laboratory-associated cases.

As a result of this investigation, a total of 19 cases of laboratory-associated typhoid fever were identified that had occurred since January 1977. None was fatal. The exposure for 6 of these cases was national or state proficiency exercises from 4 different programs. (The organisms were provided as lyophilized cultures.) Laboratory stock strains were the source for 11 patients, and routine laboratory isolates from clinical specimens accounted for the other 2 cases.

All 19 laboratory exposures to *S. typhi* occurred within 3 weeks of onset of illness. For 13 patients the bacteriophage type of the strain to which they were exposed in the laboratory is known to have been the same as the strain isolated from them. In the remaining 6 patients a culture of the isolated strain is not yet available for typing.

The 19 patients were from 14 states; 7 were medical technology or medical students, and 12 were non-students whose laboratory experience ranged from 2 to 16 years. The exposure for 11 patients occurred during exercises to identify unknown organisms; for 4 patients it was due to laboratory accidents; and for 3 patients there was no known direct contact, but co-workers in the laboratory had been working with *S. typhi* as an unknown. Five of the patients had current *S. typhi* immunizations. Further investigations are ongoing.

Reported by Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, Enteric Section, Enterobacteriology Br, Bacteriology Div, Bur of Laboratories, and Office of Biosafety, CDC.

**Editorial Note:** Laboratory-associated typhoid fever was well-recognized 30 years ago (1), but recently there has been little mention of this problem. The cases discussed here represent 5% of the domestically-acquired cases of typhoid fever in the United States reported for the period January 1, 1977 to August 31, 1979. These cases further demonstrate the ever-present need for all laboratory personnel to be aware of, and to diligently practice, laboratory safety. Instructors of medical and clinical microbiology students should emphasize the necessity for strict adherence to safety procedures. It is prudent to avoid hand-to-mouth activities while working with *S. typhi* and other enteric pathogens. Since all but 2 of the cases reported here were associated with the voluntary intro-

*Typhoid Fever — Continued*

duction of *S. typhi* into the laboratory environment, this problem should be preventable in most cases.

Typhoid immunization is recommended, but not necessarily required as a condition of employment, for individuals who are exposed to *S. typhi* on a daily basis (2). It is urged that state and local health departments be notified whenever a laboratory infection is suspected.

*References*

1. Sulkin SE, Pike RM: Survey of laboratory-acquired infections. *Am J Public Health* 41:769-781, 1951
2. CDC: Laboratory Safety at the Center for Disease Control. Atlanta, Office of Biosafety, CDC, 1974

### *Salmonella oranienburg* Gastroenteritis Associated with Consumption of Precut Watermelons — Illinois

From June 13 through July 16, 1979, the Illinois Department of Public Health Laboratory reported 18 isolates of *Salmonella oranienburg*, mostly from residents of Lake County. Investigation of the first case by local health authorities implicated a pet turtle. The animal was found to carry *Salmonella urbana*, however, and the search continued.

Eighteen persons, representing 7 households, were found to have an illness compatible with salmonellosis and to be culture positive for *S. oranienburg*. The ages of these patients ranged from 17 months to 70 years, with a median age of 19 years. Males and females were equally affected. Their symptoms included diarrhea (92%), fever >100 F (54%), and nausea and vomiting (31%). Two patients had been hospitalized. Onset of illness ranged from May 21 through June 10, although 61% of patients had had onset from May 30 through June 3. Sixty-seven percent of the patients were residents of Lake County; the other patients lived in adjacent Cook County.

Review of the shopping practices of the involved households revealed that all households routinely shopped at a particular supermarket and, furthermore, that all had purchased watermelon from that supermarket in the days before illness. Three-day food histories were obtained from each patient by local health officials. Analyses of these data revealed that all 18 cases had eaten precut watermelon from that supermarket before illness (approximately 12-16 hours before illness in most cases). None of 11 well household contacts, all of whom had negative stool cultures, reported eating the product ( $p < .01$ , Fisher's exact test).

The implicated watermelons sold at the supermarket had been obtained from a Chicago wholesale food market that receives its watermelons from several sources outside of Illinois. It was the practice of the supermarket to cut up damaged watermelons, cover the cut surface with plastic wrap, and display them, sometimes without refrigeration, until sold. One of the 18 patients was a produce worker in this store. He had become ill after eating the watermelon. None of the other produce handlers had eaten watermelon, none had reported illness, and all had negative stool cultures. Watermelons consumed by patients were unavailable for culture, and cultures of a randomly selected watermelon from the implicated supermarket were negative for *S. oranienburg*.

Reported by A Larson, RN, J Wallis, RN, C Lewandowski, RN, D Jensen, RS, S Potsic, MD, MPH, Lake County Health Dept; MK Nickels, BS, M Lesko, BS, C Langkop, MSPH, RJ Martin, DVM, MPH, T Endo, DrPh, HB Ehrhard, DrPH, BJ Francis, MD, MPH, State Epidemiologist, Illinois Dept of Public Health; Field Services Div, Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

### Gastroenteritis — Continued

**Editorial Note:** In 1978, there were 487 reported isolations of *S. oranienburg* in the United States, making this organism the twelfth most frequently isolated *Salmonella* serotype in humans that year. From 1968 through 1978, the number of reported isolations in Illinois ranged from 7 to 29; therefore, 18 isolates in a 1-month period suggested a common source.

The median age of persons from whom isolates were reported for this 11-year period in Illinois, as well as in the United States as a whole, was 10 years. The median age of persons from whom the isolates in this outbreak were reported (19 years) was therefore useful in suggesting an unusual vehicle and/or mode of spread.

In 1978, there were only 23 isolates of *S. oranienburg* reported from non-human sources in the United States. Over 50% of these isolates were from animal feeds; only 1 isolate was reported from an item used in human diets (red meat).

Watermelon is an unusual vehicle of salmonellosis. Although the moist, highly sugared watermelon interior would theoretically be a good culture medium, the thick rind is a barrier to bacterial contamination. In 1 well-documented outbreak of salmonellosis attributed to precut watermelon, *S. miami* was isolated from stools of 9 ill persons, from leftover watermelon from 2 involved households, and from the shelf where the knife used to cut the watermelons was kept (1). Laboratory study found that the inside of a watermelon could be contaminated at the time of slicing if salmonellae were present on the rind of the watermelon or if a watermelon free of *Salmonella* on the exterior was cut with a knife contaminated with the organism.

Fruits and vegetables in general are relatively unusual vehicles of salmonellosis. From 1968 through 1977, there were 182 reported outbreaks of salmonellosis for which a particular food or foods were named as vehicles. Fruit and vegetable vehicles (sometimes cross-contaminated from meat products) were identified in 15 of these outbreaks (8%). The vehicles included non-meat-containing salads, cider, squash, sweet potatoes, and a casserole.

#### Reference

1. Gaylor GE, MacCready RA, Reardon JP, McKernan BF: An outbreak of salmonellosis traced to watermelon. *Public Health Rep* 70:311-313, 1955

### Current Trends

#### Influenza — United States, Worldwide

In the months of July through October, 1979, sporadic illnesses and occasional outbreaks of influenza occurred in Hawaii; more than 50 isolates of influenza B virus were recovered. All the isolates were obtained from children, but in Hawaii such specimens are not normally obtained from older persons.

Influenza B viruses were also isolated from children in Taiwan during July and August; influenza A (H3N2) and influenza A (H1N1) viruses were also identified there. In August, influenza A (H3N2) viruses were isolated in Thailand. Serologic evidence of

## Influenza — Continued

infection with influenza A(H1N1) strains was also obtained in Chile from an outbreak in July and August, and in Japan from some isolated school outbreaks in September. Antigenic analysis of representative strains is in progress.

Reported by G Kobayashi, Laboratories Br, Hawaii State Dept of Health; Veterans General Hospital, Taipei; National Influenza Centers, Bangkok and Chile; National Institute of Health, Tokyo, Japan; WHO Collaborating Center for Influenza, Virology Div, Bur of Laboratories, CDC.

**Editorial Note:** Worldwide influenza surveillance indicates the continued circulation of H3N2 and H1N1 subtypes of influenza A, as well as influenza B, although their relative prevalence has differed from country to country. The continuing circulation of these 3 strains increases the difficulty of predicting which strain(s) will predominate in the United States this winter. Viruses representative of influenza A(H1N1), influenza A(H3N2), and influenza B are all included, however, in the vaccines being used for this season (7).

## Reference

1. MMWR 28:231-232, 237-239, 1979

**TABLE I. Summary — cases of specified notifiable diseases, United States**  
(Cumulative totals include revised and delayed reports through previous weeks.)

DISEASE	44th WEEK ENDING		MEDIAN 1974-1978**	CUMULATIVE, FIRST 44 WEEKS		
	November 3, 1978	November 4, 1978*		November 3, 1978	November 4, 1978*	MEDIAN 1974-1978**
Aseptic meningitis	201	139	109	6,848	5,468	3,489
Brucellosis	2	2	3	137	148	188
Chickenpox	1,214	1,381	1,375	175,653	129,089	129,089
Diphtheria	—	—	4	64	63	132
Encephalitis: Primary (arthropod-borne & unspec.)	16	18	27	860	1,027	1,027
Post-infectious	3	3	3	190	201	221
Hepatitis, Viral: Type B	325	268	276	12,280	12,680	12,680
Type A	563	619	619	24,826	24,742	28,516
Type unspecified	234	177	174	9,059	7,131	6,993
Malaria	9	17	6	626	641	399
Measles (rubella)	73	156	156	12,577	24,826	24,826
Meningococcal infections: Total	23	45	29	2,161	2,063	1,310
Civilian	23	45	28	2,149	2,039	1,293
Military	—	—	—	12	24	24
Mumps	167	176	428	12,011	14,346	34,546
Pertussis	20	40	40	1,161	1,785	1,462
Rubella (German measles)	45	87	90	11,030	17,352	15,399
Tetanus	2	—	2	60	69	69
Tuberculosis	534	530	540	23,640	24,554	25,772
Tularemia	2	6	2	177	113	117
Typhoid fever	6	9	10	418	442	360
Typhus fever, tick-borne (Rky. Mt. spotted)	10	8	5	988	1,010	846
Veneral diseases:						
Gonorrhea: Civilian	18,989	22,097	20,510	846,968	859,152	856,734
Military	496	611	618	23,171	22,057	23,021
Syphilis, primary & secondary: Civilian	363	502	444	20,970	18,293	18,293
Military	6	2	3	261	253	257
Rabies in animals	90	60	51	4,281	2,718	2,568

**TABLE II. Notifiable diseases of low frequency, United States**

	CUM. 1978		CUM. 1978
Anthrax	—	Poliomyelitis: Total	25
Botulism	26	Paralytic	21
Cholera	1	Paittacosis (Ark. 1, Utah 2, Calif. 2)	88
Congenital rubella syndrome	39	Rabies in man	3
Leprosy (Mo. 1, Hawaii 1)	149	Trichinosis †	128
Leptospirosis (Fla. 1)	42	Typhus fever, flea-borne (endemic, murine)	52
Plague	10		

\* Delayed reports received for calendar year 1978 are used to update last year's weekly and cumulative totals.

\*\* Medians for gonorrhea and syphilis are based on data for 1976-1978.

† The following delayed report will be reflected in next week's cumulative total: Trichinosis: W. Va. +1

TABLE III. Cases of specified notifiable diseases, United States, weeks ending November 3, 1979, and November 4, 1978 (44th week)

REPORTING AREA	ASEPTIC MENIN- GITIS	BRU- CEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-in- fectious	B	A	Unspecified		
						1979	CUM. 1979	1979	1978*	1979	1978		
UNITED STATES	201	2	1,214	-	64	16	18	3	325	563	234	9	626
NEW ENGLAND	10	-	161	-	-	-	1	-	13	9	6	1	40
Maine	-	-	68	-	-	-	-	-	-	-	-	-	3
N.H.†	-	-	-	-	-	-	-	-	1	1	-	-	1
Vt.†	-	-	-	-	-	-	-	-	1	1	-	-	-
Mass.	4	-	37	-	-	-	-	-	5	1	5	1	12
R.I.	1	-	4	-	-	-	-	-	-	2	-	-	9
Conn.†	5	-	52	-	-	-	1	-	6	4	1	-	15
MID. ATLANTIC	47	-	55	-	-	2	3	-	61	47	13	1	85
Upstate N.Y.	30	-	13	-	-	1	1	-	17	14	6	-	13
N.Y. City	NA	NA	NA	NA	NA	NA	1	-	NA	NA	NA	NA	39
N.J.	12	-	NN	-	-	-	-	-	24	18	5	1	15
Pa.†	5	-	42	-	-	2	1	-	20	15	2	-	18
E.N. CENTRAL	11	-	464	-	2	7	4	1	51	122	8	-	47
Ohio†	-	-	33	-	4	4	1	1	18	45	-	-	12
Ind.†	-	-	56	-	1	-	-	-	6	16	3	-	1
Ill.	-	-	36	-	-	-	-	-	13	22	-	-	20
Mich.	9	-	183	-	3	4	-	-	13	21	5	-	12
Wis.†	2	-	156	-	1	-	-	-	1	18	-	-	2
W.N. CENTRAL	23	1	203	-	1	1	1	-	10	20	5	-	22
Minn.	-	-	-	-	-	-	-	-	-	3	-	-	9
Iowa	3	-	71	-	-	1	1	-	2	-	1	-	2
Mo.	2	-	-	-	1	-	-	-	4	7	4	-	3
N. Dak.†	-	-	4	-	-	-	-	-	-	-	-	-	2
S. Dak.	-	-	4	-	-	-	-	-	-	-	-	-	1
Nebr.	7	1	-	-	-	-	-	-	4	6	-	-	2
Kans.	11	-	124	-	-	-	-	-	-	4	-	-	3
S. ATLANTIC	22	1	126	-	1	1	2	1	63	88	44	3	74
Del.	-	-	1	-	-	-	-	-	2	-	-	-	1
Md.	-	-	25	-	-	-	1	-	21	16	18	-	12
D.C.	-	-	-	-	-	-	-	-	1	-	-	-	6
Va.	9	-	1	-	1	-	-	-	8	4	5	2	24
W. Va.†	-	-	77	-	-	-	-	-	1	4	2	1	3
N.C.	5	-	NN	-	-	-	1	-	9	8	6	-	6
S.C.	-	-	-	-	-	-	-	-	2	-	-	-	1
Ge.†	-	-	-	-	-	-	-	-	9	15	-	-	2
Fla.	8	1	22	-	-	1	-	1	10	41	13	-	19
E.S. CENTRAL	17	-	10	-	-	-	1	-	26	27	7	-	11
Ky.	1	-	7	-	-	-	-	-	2	5	1	-	-
Tenn.	4	-	NN	-	-	-	1	-	16	9	2	-	-
Ala.	12	-	1	-	-	-	-	-	6	9	4	-	3
Miss.	-	-	2	-	-	-	-	-	2	4	-	-	8
W.S. CENTRAL	20	-	70	-	-	1	2	-	27	72	63	-	39
Ark.	-	-	-	-	-	-	1	-	2	5	2	-	-
La.	-	-	NN	-	-	-	-	-	10	11	11	-	5
Okla.†	2	-	-	-	-	-	-	-	2	1	3	-	6
Tex.	18	-	70	-	-	1	1	-	13	55	47	-	28
MOUNTAIN	4	-	11	-	1	-	-	-	13	65	43	-	17
Mont.	-	-	5	-	-	-	-	-	-	3	-	-	2
Idaho	1	-	-	-	-	-	-	-	-	1	-	-	-
Wyo.	1	-	-	-	-	-	-	-	-	2	-	-	1
Colo.†	1	-	-	-	-	-	-	-	7	8	3	-	7
N. Mex.	-	-	5	-	-	-	-	-	-	9	-	-	1
Ariz.	-	-	-	-	1	-	-	-	-	18	27	-	5
Utah	1	-	1	-	-	-	-	-	1	1	5	-	-
Nev.	-	-	-	-	-	-	-	-	5	23	8	-	1
PACIFIC	47	-	114	-	59	4	4	1	61	113	45	4	291
Wash.†	7	-	110	-	56	-	-	-	3	3	3	-	12
Oreg.	4	-	-	-	-	-	-	-	8	17	2	-	12
Calif.†	32	-	-	-	3	4	4	1	45	86	40	4	262
Alaska	2	-	4	-	-	-	-	-	-	2	-	-	-
Hawaii	2	-	-	-	-	-	-	-	5	5	-	-	5
Guam	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-
P.R.	NA	NA	10	NA	-	-	-	-	4	5	-	-	2
V.I.	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-
Fsc. Trust Terr.	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-

NA: Not notifiable.

-: Not available.

\*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Asep. meng.: N.H. +1, Vt. +11, Ohio +49, Ind. +9, Wash. -4; Bruc.: Ohio +1; Chickenpox: Ohio +6, Wash. +29, Calif. +14; Enceph., prim.: Pa. -2, Ohio +9, Ind. +4, Wis. +1; Enceph., post: Ohio +2; Hep. B: Conn. -2, Pa. +7, Ohio +12, N. Dak. +1, Ga. +10; Hep. A: Vt. +1, Pa. +7, Ohio +29, W. Va. -1, Ga. +10; Hep. unsp.: Pa. +1, Va. -2, Okla. +1, Colo. +2.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending November 3, 1979, and November 4, 1978 (44th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1979	CUM. 1978	CUM. 1978*	1979	CUM. 1979	CUM. 1978*	1979	CUM. 1979	1979	1979	CUM. 1979	CUM. 1978
UNITED STATES	73	12,577	24,826	23	2,161	2,063	167	12,011	20	45	11,030	60
NEW ENGLAND	-	288	2,006	2	115	116	23	512	1	-	1,420	5
Maine†	-	17	1,316	-	7	8	17	200	1	-	61	1
N.H.†	-	32	55	-	13	9	-	5	-	-	125	-
Vt.†	-	119	51	-	7	2	-	9	-	-	398	-
Mass.	-	14	248	1	35	46	5	65	-	-	487	3
R.I.	-	102	8	-	8	17	1	43	-	-	93	-
Conn.†	-	4	328	1	45	34	-	190	-	-	256	1
MID. ATLANTIC	1	1,507	2,211	4	344	319	6	1,158	-	3	1,953	9
Upstate N.Y.	-	421	1,407	2	116	103	4	170	-	2	1,093	2
N.Y. City	NA	782	372	-	78	74	NA	126	NA	NA	2,699	4
N.J.	1	58	74	1	85	63	1	566	-	1	326	1
Pa.†	-	46	358	1	65	79	1	296	-	-	265	2
E.N. CENTRAL	19	3,285	11,064	-	222	289	64	5,122	6	12	2,571	4
Ohio †	-	282	487	-	78	76	24	1,825	-	-	140	3
Ind.	8	224	206	-	42	47	3	303	1	2	747	-
Ill.	6	1,447	1,132	-	20	91	20	914	3	2	189	-
Mich.	2	838	7,759	-	65	63	7	935	2	4	1,222	1
Wis.	3	494	1,480	-	17	12	10	1,145	-	4	273	-
W.N. CENTRAL	15	1,794	402	-	64	81	4	687	-	3	485	2
Minn.	-	1,218	40	-	14	23	1	21	-	2	43	-
Iowa	-	16	57	-	11	10	1	235	-	-	52	-
Mo.	-	420	12	-	29	31	-	195	-	-	65	1
N. Dak.	-	21	198	-	1	3	-	2	-	-	8	1
S. Dak.	-	2	-	-	2	3	-	7	-	-	5	-
Nebr.	10	45	5	-	-	-	-	7	-	-	202	-
Kans.	5	72	90	-	7	11	2	220	-	1	110	-
S. ATLANTIC	14	1,939	5,315	7	528	492	6	631	4	6	1,243	11
Del.	-	1	7	-	3	2	3	56	-	-	5	-
Md.	-	16	52	-	46	35	2	168	-	-	28	1
D.C.	-	-	48	-	2	2	-	2	-	-	1	-
Va.	-	275	2,830	-	76	58	1	88	-	1	204	1
W. Va.†	3	60	1,059	-	8	13	-	104	-	1	109	-
N.C.	1	114	121	3	84	95	-	77	-	2	532	3
S.C.	5	174	199	-	59	33	-	3	-	-	64	-
Ga.†	-	494	34	3	80	56	-	7	2	-	11	-
Fla.	5	805	965	1	170	198	-	126	2	2	289	6
E.S. CENTRAL	-	214	1,426	1	161	160	29	1,412	1	2	304	8
Ky.	-	37	120	1	34	30	29	1,168	-	1	69	1
Tenn.	-	68	959	-	44	41	-	103	1	1	99	-
Ala.	-	85	101	-	38	47	-	24	-	-	44	5
Miss.	-	24	246	-	45	42	-	117	-	-	92	2
W.S. CENTRAL	6	938	1,178	2	330	288	7	1,368	2	6	258	17
Ark.	-	9	16	-	27	22	6	487	1	-	7	4
La.	4	254	344	-	118	118	-	36	-	-	30	3
Okla.†	-	22	14	-	32	17	-	-	-	1	24	-
Tex.	2	653	804	2	153	131	1	845	1	5	197	10
MOUNTAIN	3	329	265	1	88	49	9	303	-	1	535	-
Mont.	3	60	106	-	10	4	-	10	-	-	70	-
Idaho	-	18	1	1	9	4	-	9	-	-	204	-
Wyo.	-	36	-	-	1	-	-	-	-	-	-	-
Colo.	-	68	38	-	5	3	6	99	-	1	67	-
N. Mex.	-	39	-	-	6	12	-	13	-	-	11	-
Ariz.	-	77	56	-	36	15	3	62	-	-	143	-
Utah	-	19	44	-	9	6	-	96	-	-	38	-
Nev.	-	12	20	-	12	5	-	14	-	-	2	-
PACIFIC	15	2,283	959	6	309	269	19	818	6	12	2,261	4
Wash.	6	1,141	224	-	54	44	3	204	1	3	191	-
Oreg.	1	62	148	-	24	29	2	96	-	3	112	-
Calif.	7	995	577	6	215	183	9	395	5	6	1,935	4
Alaska	-	17	1	-	6	9	-	12	-	-	4	-
Hawaii	1	68	9	-	10	4	5	111	-	-	19	-
Guam	NA	11	26	-	1	2	NA	11	NA	NA	4	-
P.R.	3	367	279	-	5	7	3	575	-	-	38	11
V.I.	NA	4	6	-	3	1	NA	20	NA	NA	-	-
Pac. Trust Terr.	NA	9	619	-	1	3	NA	40	NA	NA	1	-

NA: Not available.

\*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Measles: Ga. +6, Men. inf.: Pa. -3, Ohio +6, Ga. +1; Mumps: Maine -1, Conn. -2, Ohio +1, W. Va. +1; Pertussis: Okla. +2; Rubella: N.H. +1, Vt. 9.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending  
November 3, 1979, and November 4, 1978 (44th week)

REPORTING AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)	
								GONORRHEA			SYPHILIS (Pri. & Sec.)				
	1978	CUM. 1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	CUM. 1978*	1978	CUM. 1978	CUM. 1978*	CUM. 1978	
UNITED STATES	534	23,640	177	6	418	10	988	18,989	846,968	859,152	363	20,970	18,293	4,281	
NEW ENGLAND	24	683	3	2	20	-	9	428	20,898	22,076	9	416	501	46	
Maine †	1	51	-	-	1	-	-	41	1,473	1,793	-	10	8	28	
N.H. †	-	16	-	-	-	-	-	16	772	1,014	-	18	5	4	
Vt.	-	29	-	-	-	-	-	21	525	528	-	1	3	-	
Mass.	20	363	3	2	12	-	4	136	8,268	9,670	8	233	308	10	
R.I.	-	57	-	-	2	-	-	37	1,682	1,586	-	16	20	2	
Conn.	3	167	-	-	5	-	4	177	8,178	7,485	1	138	157	2	
MID. ATLANTIC	58	3,661	1	-	67	-	44	1,495	92,283	92,503	19	3,111	2,413	67	
Upstate N.Y.	6	654	1	-	13	-	27	373	16,095	15,675	10	233	163	47	
N.Y. City	NA	1,352	-	NA	29	NA	1	NA	35,399	35,120	NA	2,089	1,680	-	
N.J.	27	691	-	-	16	-	5	597	16,448	17,395	5	415	296	5	
Pa.	25	964	-	-	9	-	11	525	24,341	24,513	4	374	274	15	
E.N. CENTRAL	89	3,494	-	-	27	-	58	3,032	131,910	133,477	44	2,644	2,071	386	
Ohio †	14	612	-	-	3	-	21	1,058	35,786	34,654	12	518	377	33	
Ind.	8	444	-	-	-	-	2	164	11,188	13,925	2	187	145	64	
Ill. †	48	1,422	-	-	8	-	31	1,043	41,977	42,246	26	1,487	1,311	184	
Mich. †	14	852	-	-	12	-	3	767	31,087	30,988	4	382	182	13	
Wis. †	5	164	-	-	4	-	1	NA	11,872	11,664	NA	70	56	92	
W.N. CENTRAL	12	791	24	-	20	-	53	1,057	42,135	43,448	5	272	375	844	
Minn.	4	125	-	-	4	-	2	63	6,830	7,286	-	73	137	146	
Iowa	2	61	1	-	5	-	14	111	5,030	4,766	1	29	32	164	
Mo.	3	425	20	-	8	-	25	524	18,250	19,302	2	125	119	260	
N. Dak.	-	18	-	-	-	-	-	31	723	756	-	2	3	68	
S. Dak.	-	46	2	-	-	-	-	23	1,397	1,481	-	2	3	88	
Nebr.	-	22	1	-	-	-	4	86	3,005	3,136	1	6	13	-	
Kans.	3	94	-	-	2	-	8	219	6,900	6,721	1	35	68	118	
S. ATLANTIC	125	5,329	11	1	42	7	566	5,553	205,530	209,155	127	4,997	4,851	597	
Del.	2	48	-	-	-	-	3	56	3,378	2,933	-	24	10	-	
Md. †	7	670	-	-	7	-	75	657	25,306	26,826	12	323	369	37	
D.C.	6	255	2	-	1	-	2	307	13,518	14,086	10	383	370	-	
Va. †	11	630	2	-	4	-	91	584	19,763	20,240	10	409	409	19	
W. Va. †	3	202	-	1	5	-	9	48	2,790	2,868	-	45	25	-	
N.C. †	27	842	-	-	2	3	220	767	29,647	29,645	5	385	510	24	
S.C.	13	412	1	-	3	4	77	770	19,182	20,491	12	259	249	164	
Ge.	26	850	6	-	2	-	81	926	38,882	40,239	27	1,392	1,213	306	
Fla.	30	1,420	-	-	18	-	8	1,438	53,064	51,827	51	1,777	1,696	47	
E.S. CENTRAL	45	2,152	14	-	21	1	133	1,534	72,124	72,631	26	1,401	970	290	
Ky. †	19	563	2	-	7	-	19	146	9,549	9,733	3	141	128	120	
Tenn.	9	618	12	-	3	-	75	664	26,090	26,706	1	581	329	98	
Ala.	8	512	-	-	8	-	19	412	21,368	20,784	6	256	166	71	
Miss.	9	459	-	-	3	1	20	312	15,117	15,408	16	423	347	1	
W.S. CENTRAL	77	2,855	73	-	71	-	102	2,249	108,353	115,316	43	3,825	2,925	1,592	
Ark.	9	249	46	-	5	-	22	192	8,495	8,672	4	135	61	294	
La.	12	565	5	-	5	-	3	244	19,150	18,609	4	975	613	26	
Okl.	1	312	14	-	-	-	61	265	10,781	10,826	2	78	86	248	
Tex.	55	1,729	8	-	61	-	16	1,548	69,927	77,209	33	2,637	2,165	1,024	
MOUNTAIN	9	706	43	-	25	1	17	676	33,971	32,893	4	419	377	139	
Mont.	-	32	14	-	-	-	5	NA	1,630	1,879	NA	8	7	8	
Idaho	-	13	1	-	1	1	3	50	1,525	1,339	-	25	13	8	
Wyo.	-	7	-	-	1	-	-	24	981	796	-	8	8	-	
Colo.	-	103	12	-	14	-	4	199	9,051	9,031	2	83	105	51	
N. Mex.	6	125	4	-	4	-	1	51	4,130	4,827	-	75	78	39	
Ariz.	3	349	-	-	3	-	-	163	9,460	8,492	2	125	91	23	
Utah	-	27	10	-	-	-	1	39	1,740	1,770	-	4	12	10	
Nev.	-	50	2	-	2	-	3	150	5,454	4,759	-	91	63	-	
PACIFIC	95	3,969	8	3	125	1	6	2,965	139,764	137,653	86	3,885	3,810	320	
Wash.	9	240	5	-	7	-	-	286	12,327	11,334	NA	166	224	-	
Oreag.	3	171	-	-	2	-	-	202	8,764	9,540	-	148	143	15	
Calif.	70	3,211	3	3	107	1	6	2,346	111,710	110,134	84	3,467	3,393	303	
Alaska	5	68	-	-	2	-	-	67	4,277	4,229	1	22	11	2	
Hawaii	8	279	-	-	7	-	-	64	2,686	2,416	1	82	39	-	
Guam	NA	53	-	NA	-	NA	-	NA	88	128	NA	1	-	-	
P.R.	2	258	-	-	5	-	-	32	1,859	1,910	9	488	418	20	
V.I.	NA	4	-	NA	1	NA	-	NA	135	172	NA	7	16	-	
Pac. Trust Terr.	NA	32	-	NA	-	NA	-	NA	370	382	NA	1	-	-	

NA: Not available.

\*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: TB: Ohio +22, Mich. -1, Md. -1, N.C. -1, Ky. -1; RMSF: Va. -1, W. Va. +3; GC: Maine +1 civ., N.H. -1 civ., Ohio +1090 civ. +1 mil., Wis. -35; An. rabies: Ill. +7.

TABLE IV. Deaths in 121 U.S. cities,\* week ending  
November 3, 1979 (44th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL	REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1			ALL AGES	>65	45-64	25-44	<1	
<b>NEW ENGLAND</b>	657	433	149	40	20	34	<b>S. ATLANTIC</b>	1,346	743	380	88	82	51
Boston, Mass.	188	113	42	16	8	6	Atlanta, Ga.	152	63	43	20	21	3
Bridgeport, Conn.	43	25	13	2	3	6	Baltimore, Md.	369	192	120	25	17	4
Cambridge, Mass.	20	13	5	1	1	2	Charlotte, N.C.	77	43	26	4	2	7
Fall River, Mass.	24	21	2	1	-	-	Jacksonville, Fla.	102	60	27	7	5	5
Hartford, Conn.	43	30	10	3	-	1	Miami, Fla.	98	54	25	9	4	3
Lowell, Mass.	35	29	4	1	-	1	Norfolk, Va.	66	41	19	1	3	3
Lynn, Mass.	23	15	6	2	-	-	Richmond, Va.	79	48	22	2	4	3
New Bedford, Conn.	28	24	3	1	-	-	Savannah, Ga.	34	23	6	1	1	6
New Haven, Conn.	41	21	16	-	3	-	St. Petersburg, Fla.	72	60	11	-	-	3
Providence, R.I.	74	44	19	6	3	10	Tampa, Fla.	53	32	17	2	1	8
Somerville, Mass.	8	5	2	1	-	2	Washington, D.C.	201	101	59	15	15	5
Springfield, Mass.	47	32	12	2	1	1	Wilmington, Del.	43	26	5	2	9	1
Waterbury, Conn.	25	21	2	1	-	1							
Worcester, Mass.	58	40	13	3	1	4							
							<b>E.S. CENTRAL</b>	695	421	181	41	22	30
<b>MID. ATLANTIC</b>	2,658	1,733	623	171	61	116	Birmingham, Ala.	108	69	30	6	2	2
Albany, N.Y.	46	32	7	1	4	2	Chattanooga, Tenn.	51	32	6	4	5	4
Allentown, Pa.	18	11	7	-	-	-	Knoxville, Tenn.	54	41	9	2	1	1
Buffalo, N.Y.	169	116	39	8	4	10	Louisville, Ky.	101	61	30	3	2	7
Camden, N.J.	35	19	12	3	1	-	Memphis, Tenn.	163	97	47	9	7	6
Elizabeth, N.J.	31	20	10	-	-	2	Mobile, Ala.	65	34	18	7	1	5
Erie, Pa.	24	15	6	1	2	-	Montgomery, Ala.	29	16	8	3	1	2
Jersey City, N.J.	58	41	14	1	-	-	Nashville, Tenn.	124	71	33	7	3	3
Newark, N.J.	67	27	22	6	6	3							
N.Y. City, N.Y.	1,302	870	284	87	23	51	<b>W.S. CENTRAL</b>	1,096	616	269	96	50	35
Paterson, N.J.	34	17	12	3	2	-	Austin, Tex.	39	26	9	2	-	1
Philadelphia, Pa.	396	230	112	33	10	23	Baton Rouge, La.	41	25	11	3	-	1
Pittsburgh, Pa.	79	52	19	6	2	4	Corpus Christi, Tex.	31	15	7	5	-	1
Reading, Pa.	39	30	7	1	1	2	Dallas, Tex.	177	82	51	23	11	3
Rochester, N.Y.	126	84	29	5	4	7	El Paso, Tex.	59	39	6	4	-	4
Schenectady, N.Y.	37	28	8	1	-	2	Fort Worth, Tex.	78	50	20	6	-	4
Scranton, Pa.	23	15	3	5	-	2	Houston, Tex.	203	104	50	21	15	4
Syracuse, N.Y.	81	57	16	3	2	1	Little Rock, Ark.	71	40	18	6	6	1
Trenton, N.J.	37	26	8	3	-	3	New Orleans, La.	123	67	32	13	6	1
Utica, N.Y.	24	18	3	2	-	2	San Antonio, Tex.	154	91	38	9	7	6
Yonkers, N.Y.	32	25	5	2	-	2	Shreveport, La.	29	16	6	-	2	-
							Tulsa, Okla.	91	61	21	4	3	10
<b>E.N. CENTRAL</b>	2,351	1,424	578	157	94	66	<b>MOUNTAIN</b>	540	321	145	32	23	20
Akron, Ohio	55	40	13	1	1	-	Albuquerque, N. Mex.	69	36	21	4	6	3
Canton, Ohio	29	22	6	1	-	1	Colo. Springs, Colo.	35	20	13	1	-	4
Chicago, Ill.	556	318	153	42	19	7	Denver, Colo.	107	67	23	10	3	3
Cincinnati, Ohio	142	86	28	17	5	4	Las Vegas, Nev.	50	21	20	3	-	3
Cleveland, Ohio	182	111	51	14	2	-	Ogden, Utah	17	13	3	1	-	1
Columbus, Ohio	142	78	41	11	4	6	Phoenix, Ariz.	125	81	28	9	4	4
Dayton, Ohio	119	77	28	4	4	3	Pueblo, Colo.	25	17	5	2	-	4
Detroit, Mich.	274	151	70	27	9	3	Salt Lake City, Utah	51	24	17	1	8	1
Evansville, Ind.	40	24	12	2	-	1	Tucson, Ariz.	61	42	15	1	2	1
Fort Wayne, Ind.	67	44	20	-	2	3							
Gary, Ind.	22	13	-	2	1	-							
Grand Rapids, Mich.	56	37	9	4	6	6							
Indianapolis, Ind.	146	87	36	11	8	3	<b>PACIFIC</b>	1,752	1,054	453	117	55	66
Madison, Wis.	31	15	8	1	5	3	Berkeley, Calif.	19	15	4	-	-	1
Milwaukee, Wis.	143	98	32	5	8	4	Fresno, Calif.	52	29	18	1	2	4
Peoria, Ill.	66	40	11	2	10	13	Glendale, Calif.	15	12	3	-	-	2
Rockford, Ill.	51	33	10	1	2	5	Honolulu, Hawaii	55	35	11	3	4	4
South Bend, Ind.	47	26	10	5	3	2	Long Beach, Calif.	101	62	31	5	1	4
Toledo, Ohio	103	66	25	4	3	2	Los Angeles, Calif.	556	320	142	46	17	23
Youngstown, Ohio	80	58	15	3	2	-	Oakland, Calif.	76	41	20	7	3	7
							Pasadena, Calif.	32	25	5	2	1	4
							Portland, Ore.	111	65	35	4	2	4
<b>W.N. CENTRAL</b>	728	471	144	43	35	28	Sacramento, Calif.	72	42	19	5	2	4
Des Moines, Iowa	69	47	12	4	3	3	San Diego, Calif.	133	75	35	7	7	5
Duluth, Minn.	17	12	5	-	-	3	San Francisco, Calif.	155	99	38	14	3	5
Kansas City, Kans.	27	14	7	4	1	1	San Jose, Calif.	143	81	37	9	12	2
Kansas City, Mo.	108	66	21	9	6	4	Seattle, Wash.	135	87	31	10	2	6
Lincoln, Nebr.	28	21	4	1	1	2	Spokane, Wash.	44	32	9	2	1	3
Minneapolis, Minn.	104	70	19	5	3	3	Tacoma, Wash.	53	34	15	2	-	3
Omaha, Nebr.	80	54	17	4	3	3							
St. Louis, Mo.	167	102	34	9	15	-							
St. Paul, Minn.	74	55	13	1	2	4	<b>TOTAL</b>	11,823	7,216	2,922	785	442	448
Wichita, Kans.	54	30	12	6	1	5							

\*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

\*\*Pneumonia and influenza

†Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

Epidemiologic Notes and Reports**Tularemia — Montana, Colorado, Alaska, and Georgia**

Through October 13 of this year, 166 cases of tularemia were reported to CDC. Five recent reports exemplify several of the clinical and epidemiologic characteristics commonly observed with this disease.

**Montana:** From May 30 to July 3, 1979, 3 serologically confirmed\* and 8 presumptive† cases of tularemia occurred on the Crow Indian Reservation in southcentral Montana. Nine cases were in children. Illness was mild, consisting primarily of fever and lymphadenopathy localized in the neck. All patients recovered; most improved before therapy with streptomycin was initiated. The presumed mode of transmission was ticks. No cases occurred after July 3, a finding consistent with the sudden decrease in free-living ticks normally observed in this area during the hot summer months. *Francisella tularensis* (type B) was isolated from 8 of 14 lots of ticks (*Dermacentor variabilis*) taken off dogs in early August, and 29 of 31 dogs from the reservation had tularemia agglutinating antibody titers  $\geq 1:40$ .

**Colorado:** During the week of April 23, 4 of 9 members of a sheep-shearing crew working west of Rangely became ill with fever and headache. Three persons developed left axillary lymphadenopathy with lesions on the dorsum of the left hand. The other patient, who did not have adenopathy or a skin lesion, suffered a more severe illness associated with a pulmonary infiltrate. All patients consulted a physician approximately 10 days after onset of illness and recovered with tetracycline therapy. One patient had a 4-fold rise in antibody to *F. tularensis*, while the other 3 had single titers of  $\geq 1:160$ . Before becoming ill, these men had sheared sheep that had appeared ill and were covered with wood ticks (*D. andersoni*). The presence of lesions on only the left hand is explained by the procedure the workers use in shearing sheep. The men part fleece with their bare left hand, while shearing with the right hand—often rupturing ticks in the process, spilling blood onto the left hand.

In late June, a 31-year-old laboratory technician was hospitalized in Grand Junction, with an illness of 2 weeks' duration that had begun several days after working with an isolate of *F. tularensis*. Symptoms included fever to 105.8 F (41 C), headache, and pleuritic chest pain; pneumonitis and pleural effusion were confirmed by X ray. A diagnosis of tularemia was made, based on a 16-fold rise in titer. The patient recovered with streptomycin therapy.

**Alaska:** On August 31, a 49-year-old man in Fairbanks became ill 3 days after dressing a rabbit killed by his dog. Initial symptoms were a fever of 105 F (40.5 C) and vomiting; within 2 days he developed bilateral axillary adenopathy with 2 ulcerations just proximal to a cut on his left hand. Culture of a lymph node aspirate grew *F. tularensis*, and the patient made an uneventful recovery with tetracycline therapy. A number of dead rabbits had been recently observed in the area.

**Georgia:** In mid-September, 2 boys aged 10 and 11, from Calhoun, became ill after handling a dead rabbit they had found. Both boys developed fever, epitrochlear and axillary adenopathy, and ulcerative lesions on their hands. When seen on October 1, both patients were still ill, and cultures of both hand lesions and 1 lymph node aspirate grew

\* $\geq 4$ -fold change in agglutinating antibody titer between acute and convalescent serum specimens, with 1 titer being  $\geq 1:160$ .

† $\leq 4$ -fold change with 1 titer being  $\geq 1:160$ .

### *Tularemia* — Continued

*F. tularensis* (type A). Both patients are recovering with streptomycin therapy. No evidence of a tularemia epizootic among rabbits was observed in the area.

Reported by CA Connors, MD, PR Strange, MD, MS Myers, MD, GA Ostahowski, MD, GK Call, MD, Crow Agency, Montana; JD Carney, Billings Area Office, Indian Health Service; MD Skinner, MD, State Epidemiologist, Montana State Dept of Health and Environmental Sciences; CT Frey, MD, Cedaredge, Colorado; C Lindes, MD, Paonia, Colorado; RD Schmidt, Grand Junction, Colorado; RS Hopkins, MD, State Epidemiologist, JK Emerson, DVM, MPH, Public Health Veterinarian, Colorado State Dept of Health; RJ Burger, MD, R Zeimis, MS, Fairbanks, Alaska; DF Tirador, MD, State Epidemiologist, Alaska State Dept of Health and Social Services; R Ingraham, MD, Dalton, Georgia; RK Sikes, DVM, JS Terry, MD, Acting State Epidemiologist, Georgia Dept of Human Resources; Vector-borne Diseases Div, Bur of Laboratories, Field Services Div, and Bacterial Zoonoses Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

**Editorial Note:** Tularemia is an uncommon disease in the United States. An average of 157 cases were reported annually for the years 1969-1978, although in previous decades the average annual incidence was severalfold higher.

The 5 cases reported here illustrate part of the clinical spectrum of tularemia as well as at least 3 different modes of transmission. Clinical illness ranges from a mild, self-limited illness similar to that seen in the Montana cases to more severe and lingering illness, which can include pneumonia, meningitis, and death. Symptoms normally appear first at the site of inoculation and include ulceration and regional adenopathy (with cutaneous inoculation) or pneumonia (with inhalation exposure). In the case of the fourth sheep shearer, the infection probably resulted in typhoidal tularemia, with pneumonia occurring secondary to bacteremia, although inhalation as a route of infection cannot be excluded. The laboratory technician may have developed pneumonia following inhalation of infectious aerosols generated during examination of the *F. tularensis* isolate, but other modes of transmission have not been ruled out. This case illustrates the hazards associated with culturing *F. tularensis*.

In addition to factors such as host susceptibility, route of infection, and inoculum size, severity of disease is also partially dependent on the virulence of the infecting strain. Although elaborate animal inoculation tests may be done to determine virulence, strains capable of fermenting glycerol are more pathogenic than those that do not (7). The strains isolated in Montana were glycerol-negative (type B), while those in Georgia were glycerol-positive (type A).

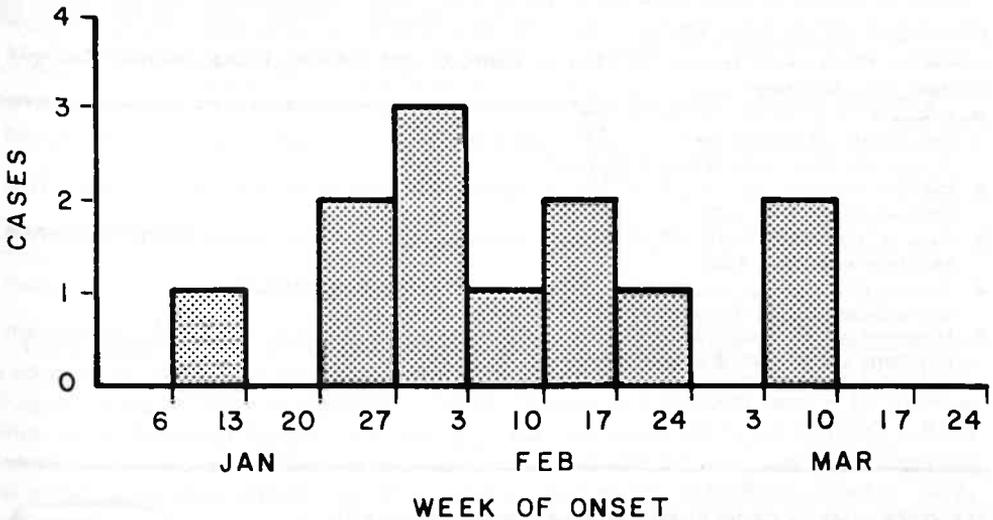
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### Adenovirus Type 16 — Long Island, New York

From January 16 to March 12, 1979, adenovirus type 16 (AV-16) was isolated from 12 Long Island, New York, patients by the Nassau County Medical Center (NCMC). In the previous 10 years, AV-16 had been isolated from only 3 patients at NCMC; all 3 isolations were in 1977.

The first patient this year had onset of symptoms on January 12. Most of the subsequent cases occurred in the fourth through eighth week of 1979 (Figure 1). Eighty-three percent (10/12) were children <6 years of age (mean age, 5.5 years; age range,

*Adenovirus Type 16 - Continued***FIGURE 1. Persons culture positive for adenovirus type 16, by week of onset of illness, Long Island, New York, January 1-March 24, 1979**

1-18 years). Seven patients were boys, and 5 were girls. A review of medical records for the 12 patients showed that the most common findings were a history of fever (100%), injected pharynx (92%), nausea and/or vomiting (67%), lymphadenopathy (58%), and nasal congestion (58%). Conjunctivitis was present in 6 cases. Cough, myalgia, abdominal pain, headache, diarrhea, rash, hypertrophied tonsils, injected tympanic membranes, and rhonchi were noted, but less frequently. The average recorded temperature was 38.6 C (range 36.6-40.6 C), and the white blood cell count was mildly elevated in 3 of 5 patients tested. Three persons required hospitalization. AV-16 was recovered from the pharynx of 11 patients and from the rectum of 2 of 3 persons cultured. Nine persons resided in southern Nassau County and 3 in nearby Suffolk County. Telephone interviews in September with 8 of the 12 patients' mothers failed to identify any common exposure.

The secondary attack rate among household contacts was 28% (7 of 25 persons at risk). Three of the 7 were parents of the cases, and 4 were siblings. The incubation period for the secondary cases was 1 to 6 days (mean, 2.5 days).

*Reported by SW Klein, MD, J McPhee, Virology Laboratory, NCMC; TC Abruzzo, MD, MPH, Nassau County Health Dept; Bureau of Disease Control, New York State Dept of Health; Viral Diseases Div, Bur of Epidemiology, CDC.*

**Editorial Note:** AV-16 was first isolated in Saudi Arabia in persons with conjunctivitis (7). Although little information is available regarding the occurrence of this virus, it

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*Adenovirus Type 16 – Continued*

appears to be uncommon. It only rarely causes conjunctivitis (2-4), and it was cultured from only 6 of 7,509 patients with pharyngitis over a 4-year period (5). The 3 AV-16 isolates at NCMC in 1977 occurred in persons who had conjunctivitis (in 2 persons) and pharyngitis (in 1). Since the cases detailed here, NCMC has isolated AV-16 from 4 other persons with conjunctivitis or fever. There have been no other reported isolates of AV-16 in New York this year.

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