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Epidemiologic Notes and Reports
377 Coxsackievirus — New York
383 Paralytic Shellfish Poisoning — Alaska
International Notes
378 Follow-up on Viral Hemorrhagic Fever — Zaire, United Kingdom
Current Trends
383 Influenza — Worldwide

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Epidemiologic Notes and Reports

Coxsackievirus Outbreak — New York

During the 3-month interval June 28-September 30, 1976, 151 isolates of coxsackieviruses A9, B2, B3, and B4 were made from 117 patients at the Nassau County (New York) Medical Center. This compares with an average annual incidence of 44 isolations of these same agents for the years 1970-1975 (Table 1). Coxsackie B3 was isolated from 52 of the 117 patients, B4 from 51.

Eighty-two percent of the cases were in children less than 10 years of age, 25% occurring in children under 1 year old. Although mild symptomology was most common, more severe symptoms and diseases, such as paralysis and hepatitis, occasionally were seen (Table 2).

Twenty-six patients (22%) were diagnosed clinically as having aseptic meningitis. Virus was isolated from cerebrospinal fluid in 6, and from the throat, nasopharynx, or rectum in the remaining 20. One patient, a 13-year-old girl, presented with temporary bilateral paralysis to the mid-thigh; coxsackie B4 was isolated from her rectal swabs. Three children presented with jaundice. Coxsackie B3 was isolated from 2 of the children initially: from the throat and nasopharynx of a 5-day-old male, and from throat swabs of a 4-week-old female. Coxsackie B4 was isolated from rectal swabs of the third child at age 4 weeks, and coxsackie B3 from rectal and nasopharyngeal swabs at 6 weeks.

Two children, aged 7 and 10 days, died of coxsackievirus infection. In the first case, the mother developed a fever on the second postpartum day, and the next day her male infant developed fever and aseptic meningitis; he died 4 days thereafter. Rectal swabs of the mother and throat, nasopharyngeal, and rectal swabs, and lung tissue of the infant all grew coxsackie B4. In the second case a 10-day-old male infant presented with a history of poor feeding, fever, and cyanotic episodes; he died on the day of admission. The baby's mother had had fever shortly after delivery but was not cultured. Nasopharyngeal swabs of the infant grew coxsackie B2, and autopsy confirmed a diagnosis of acute myocarditis.

Reported by MH Kaplan, MD, SW Klein, MD, and J McPhee, MS, Nassau County Medical Center; DO Lyman, MD, State Epidemiologist, New York State Dept of Health; and Enteric Viral Diseases Section, Viral Diseases Div, Bur of Epidemiology, CDC.

TABLE 1. Isolation of four coxsackieviruses Nassau County Medical Center, 1970-1976

Year	Coxsackie A9	Coxsackie B2	Coxsackie B3	Coxsackie B4	Total
1970	10	4	0	0	14
1971	1	10	14	7	32
1972	10	3	5	12	30
1973	30	38	36	22	126
1974	0	16	3	3	22
1975	6	12	8	13	39
1976	8	6	52	51	117

TABLE 2. Clinical symptoms of 117 cases of coxsackievirus infection New York, 1976

Clinical Symptoms	Coxsackie A9 (N=8)	Coxsackie B2 (N=6)	Coxsackie B3 (N=52)	Coxsackie B4 (N=51)	All Isolates (N=117)
Fever	75	83	77	78	78
Pharyngitis/Tonsilitis	63	17	62	41	50
Nausea, Vomiting, Abdominal Pain	38	17	15	31	24
Aseptic Meningitis	50	17	19	22	22
Diarrhea	0	17	10	14	11
Headache	63	17	6	8	11
Jaundice	0	0	6	2	3
Pneumonia	0	0	6	2	3
Pleurisy/Pleurodynia	0	0	6	0	3
Paralysis	0	0	0	2	1

Editorial Note: Most of the 60 "common" enterovirus serotypes that are prevalent during the summer months appear to cause localized or occasional national epidemics at irregular intervals. The clinical spectrum of disease caused by the different agents is remarkably similar, though there are notable exceptions, such as the association of cardiac disease with coxsackie B viruses, and vesicular exanthema with coxsackie A viruses.

In addition to the clinical syndromes already mentioned, rash is frequently noted and may be of a considerable aid in diagnosis. It is commonly pink, discrete, and maculopapular, although occasionally it is petechial, urticarial, or telangiectatic, and especially with some coxsackie A infections, vesicular. Other syndromes include pericarditis and various types of respiratory tract disease such as upper respiratory infection, croup, and bronchiolitis. Paralysis is a rare but well-recognized complication of infection. Hepatitis is also uncommon, occurring primarily in infants with generalized severe infection.

Coxsackievirus — Continued

Based on viral isolation data reported to CDC by state and territorial health departments, occurrence of enteroviral disease appears to be inversely related to age and more common in males than in females. There is evidence to suggest that while enterovirus infection is relatively benign in older children and adults, it may be much more serious in infancy, especially during the neonatal period when clinical presentation is often nonspecific, and may include jaundice, apnea, cyanosis, failure to gain, lethargy, meningitis, "sepsis," and sudden infant death. Such severe neonatal disease may be more common than is currently recognized.

International Notes

Follow-up on Viral Hemorrhagic Fever — Zaire, United Kingdom

Zaire: The Zaire Ministry of Health has arranged for an international commission to assist in the control and further understanding of the outbreak of hemorrhagic fever which began September 3, 1976, in the village of Yambuku. By November 1, at least 358 cases, 325 fatal, had occurred in an area of approximately 13,000 sq. km. However, subsequent investigations have shown that the case-fatality ratio is much less than these figures would indicate. Movement of persons into and out of the area has been strictly controlled since the disease was first reported. Public health teams have visited the area, including Zambuku, several times.

An investigation in the Yandongi community has revealed an attack rate of 8 per 1,000 population. The secondary attack rate among families in rural villages is about 15%, which suggests that the virus is not as highly transmissible as previously thought. Although information is incomplete, the epidemic appears to be diminishing because of selective isolation of patients, families, and villages affected with the disease. House-to-house visits in the infected area by active surveillance teams have been in operation and, in the period October 25-November 1, 8 cases and 7 deaths have been reported from the epidemic zone. Four persons with antibodies to the causative agent have been identified by fluorescent antibody tests done in Kinshasa, and 2 units of immune serum have been obtained.

United Kingdom: A research worker at the Microbiological Research Establishment, Porton Down, Salisbury, is believed to have been infected with the viral agent responsible for the outbreak of hemorrhagic fever in northern Zaire and southern Sudan. The man pricked his finger through his protective gloves with a needle while carrying out tests with the virus on November 5 and developed fever and some symptoms consistent with the disease. He has

(Continued on page 383)

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

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

DISEASE	47th WEEK ENDING		MEDIAN 1971–1975	CUMULATIVE, FIRST 47 WEEKS		MEDIAN 1971–1975
	November 27, 1976	November 22, 1975		November 27, 1976	November 22, 1975	
Aseptic meningitis	48	73	78	2,915	3,764	3,894
Brucellosis	8	8	2	247	237	166
Chickenpox	2,403	2,322	---	159,539	128,080	---
Diphtheria	-	7	7	133	268	174
Encephalitis: Primary	17	85	23	1,291	2,406	1,396
Encephalitis: Post-Infectious	-	7	4	243	278	255
Hepatitis, Viral: Type B	240	267	178	13,241	10,622	8,117
Hepatitis, Viral: Type A	563	633	873	29,950	31,529	46,741
Hepatitis, Viral: Type unspecified	114	187		7,613	7,440	
Malaria	5	6	5	419	377	377
Measles (rubeola)	235	274	274	36,375	22,754	25,532
Meningococcal infections, total	23	20	28	1,370	1,303	1,233
Civilian	22	20	20	1,360	1,276	1,213
Military	1	-	-	10	27	28
Mumps	279	1,047	1,177	35,429	53,012	62,880
Pertussis	13	17	---	869	1,449	---
Rubella (German measles)	102	89	135	11,432	15,673	23,266
Tetanus	1	1	1	57	92	92
Tuberculosis	379	652	---	29,547	29,945	---
Tularemia	4	7	2	127	104	132
Typhoid fever	7	10	7	365	322	384
Typhus, tick-borne (Rky. Mt. spotted fever)	6	6	3	854	797	622
Venereal Diseases:						
Gonorrhea: Civilian	16,301	18,928	---	909,249	902,017	---
Gonorrhea: Military	366	541	---	26,391	26,437	---
Syphilis, primary and secondary: Civilian	295	476	---	21,651	23,168	---
Syphilis, primary and secondary: Military	4	10	---	311	319	---
Rabies in animals	28	27	45	2,675	2,209	3,082

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	2	Poliomyelitis, total:	8
Botulism:	27	Paralytic:	7
Congenital rubella syndrome:	21	Psittacosis:	61
Leprosy: Ore. 1, Calif. 1	121	Rabies in man:	2
Leptospirosis:	41	Trichinosis:	80
Plague:	15	Typhus, murine: Calif. 1	49

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending November 27, 1976 and November 22, 1975 — 47th Week

AREA REPORTING	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified		
	1976	1976	1976	1976	CUM. 1976	1976	1975	1976	1976	1976	1976	1976	CUM. 1976
UNITED STATES	48	8	2,403	-	133	17	85	-	240	563	114	5	419
NEW ENGLAND	2	-	219	-	-	1	-	-	9	14	3	1	21
Maine	-	-	12	-	-	-	-	-	-	2	-	-	-
New Hampshire	-	-	16	-	-	-	-	-	1	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-	-	1	-	-
Massachusetts	-	-	123	-	-	1	-	-	4	2	2	-	11
Rhode Island	1	-	30	-	-	-	-	-	2	-	-	-	4
Connecticut	1	-	38	-	-	-	-	-	2	10	-	1	6
MIDDLE ATLANTIC	6	-	96	-	-	-	5	-	41	53	4	-	91
Upstate New York	2	-	59	-	-	-	1	-	3	11	-	-	21
New York City	2	-	14	-	-	-	-	-	12	22	-	-	40
New Jersey*	1	-	NN	-	-	-	-	-	14	16	4	-	14
Pennsylvania	1	-	23	-	-	-	4	-	12	4	-	-	16
EAST NORTH CENTRAL	8	-	1,354	-	1	1	55	-	48	71	8	1	22
Ohio	-	-	89	-	1	-	5	-	14	27	-	-	7
Indiana	1	-	186	-	-	-	40	-	3	-	1	-	-
Illinois	2	-	326	-	-	-	4	-	20	15	2	1	4
Michigan	1	-	442	-	-	1	6	-	7	24	5	-	9
Wisconsin	4	-	311	-	-	-	-	-	4	5	-	-	2
WEST NORTH CENTRAL	1	6	222	-	4	-	6	-	9	13	3	-	27
Minnesota	-	-	1	-	-	-	3	-	-	-	-	-	4
Iowa	-	2	177	-	-	-	1	-	4	2	1	-	-
Missouri*	1	-	1	-	1	-	-	-	3	3	1	-	9
North Dakota	-	-	24	-	-	-	-	-	-	3	-	-	1
South Dakota	-	-	1	-	3	-	-	-	-	-	-	-	3
Nebraska	-	2	11	-	-	-	-	-	1	2	-	-	5
Kansas	-	2	7	-	-	-	2	-	1	3	1	-	5
SOUTH ATLANTIC	5	-	125	-	1	7	1	-	37	82	39	-	67
Delaware	-	-	2	-	-	-	-	-	-	-	-	-	-
Maryland	-	-	29	-	-	-	-	-	7	5	4	-	12
District of Columbia	-	-	-	-	-	-	-	-	-	1	1	-	9
Virginia*	-	-	23	-	-	4	-	-	-	5	6	-	10
West Virginia	-	-	25	-	1	1	-	-	-	8	-	-	3
North Carolina	4	-	NN	-	-	2	1	-	6	14	4	-	6
South Carolina	-	-	6	-	-	-	-	-	-	4	5	-	1
Georgia	-	-	2	-	-	-	-	-	-	15	-	-	5
Florida	1	-	42	-	-	-	-	-	24	30	19	-	21
EAST SOUTH CENTRAL	3	-	26	-	-	4	8	-	10	33	2	-	3
Kentucky	1	-	23	-	-	-	-	-	-	-	-	-	-
Tennessee	2	-	NN	-	-	1	5	-	10	20	2	-	-
Alabama	-	-	2	-	-	3	2	-	-	2	-	-	2
Mississippi	-	-	1	-	-	-	1	-	-	11	-	-	1
WEST SOUTH CENTRAL	3	1	99	-	1	2	10	-	18	34	12	-	21
Arkansas	-	-	-	-	-	1	-	-	1	5	-	-	2
Louisiana	-	-	NN	-	-	1	-	-	2	4	4	-	2
Oklahoma	-	-	8	-	-	-	-	-	2	12	8	-	3
Texas	3	1	91	-	1	-	10	-	13	13	-	-	14
MOUNTAIN	-	-	103	-	4	-	-	-	19	42	11	1	16
Montana	-	-	12	-	-	-	-	-	1	1	2	-	-
Idaho	-	-	5	-	-	-	-	-	1	1	5	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	-	-	81	-	3	-	-	-	12	18	1	-	9
New Mexico	-	-	5	-	1	-	-	-	-	5	1	-	1
Arizona	-	-	NN	-	-	-	-	-	5	16	2	1	5
Utah	-	-	-	-	-	-	-	-	-	-	-	-	-
Nevada*	-	-	-	-	-	-	-	-	-	1	-	-	1
PACIFIC	20	1	155	-	122	2	-	-	49	221	32	2	151
Washington	1	1	145	-	114	-	-	-	2	4	-	-	3
Oregon	2	-	1	-	-	-	-	-	5	17	1	1	7
California*	15	-	-	-	1	2	-	-	41	118	30	1	140
Alaska	-	-	3	-	6	-	-	-	1	78	-	-	-
Hawaii	2	-	6	-	1	-	-	-	-	4	1	-	1
Guam*	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	NA	NA	NA	NA	1	NA	-	-	NA	NA	NA	NA	1
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-	-	-

NN: Not notifiable
NA: Not available
*Delayed reports: Chickenpox: Calif. add 7, Guam add 2; Enceph.: Mo. add 1; Hep. B: Va. delete 1; Hep. A: Nev. add 5; Malaria: N.J. 1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending November 27, 1976 and November 22, 1975 — 47th Week

REPORTING AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1976	CUMULATIVE 1976	CUMULATIVE 1975	1976	CUMULATIVE 1976	CUMULATIVE 1975	1976	CUM. 1976	1976	1976	CUM. 1976	CUM. 1976
UNITED STATES	235	36,375	22,754	23	1,370	1,303	279	35,429	13	102	11,432	57
NEW ENGLAND	12	493	349	1	65	72	17	1,493	1	1	305	2
Maine	-	9	16	-	1	6	1	126	-	-	13	-
New Hampshire	-	9	22	-	5	3	-	27	-	-	12	-
Vermont	11	138	75	1	6	2	-	42	-	-	6	-
Massachusetts	-	38	111	-	18	26	5	173	1	-	143	1
Rhode Island	-	15	3	-	7	5	4	479	-	1	6	-
Connecticut	1	284	122	-	28	30	7	646	-	-	125	1
MIDDLE ATLANTIC	2	7,142	2,178	7	206	135	6	3,242	2	3	2,330	8
Upstate New York	1	2,956	940	2	79	42	1	407	1	1	612	4
New York City	1	481	164	2	53	35	1	1,712	1	1	153	3
New Jersey	-	620	475	1	31	20	2	543	-	-	1,352	-
Pennsylvania	-	3,085	599	2	43	38	2	580	-	1	213	1
EAST NORTH CENTRAL	162	15,673	6,782	-	172	191	107	14,432	2	32	4,336	4
Ohio	-	579	106	-	68	64	3	2,057	-	-	316	2
Indiana	35	3,644	470	-	12	10	4	1,535	-	4	900	-
Illinois	11	1,729	1,653	-	20	24	5	1,833	1	3	1,200	-
Michigan	31	5,982	3,140	-	61	71	24	5,155	1	19	1,454	2
Wisconsin	85	3,739	1,213	-	11	22	71	3,852	-	6	466	-
WEST NORTH CENTRAL	-	1,216	5,097	-	83	88	59	3,742	-	2	428	7
Minnesota	-	425	221	-	12	19	-	549	-	-	31	2
Iowa	-	37	646	-	10	7	53	1,462	-	-	85	-
Missouri*	-	24	271	-	36	45	2	358	-	1	45	2
North Dakota	-	3	1,061	-	3	2	-	127	-	-	3	1
South Dakota	-	4	356	-	3	1	2	11	-	-	21	1
Nebraska	-	55	395	-	5	3	2	108	-	-	3	-
Kansas	-	668	2,147	-	14	11	-	1,127	-	1	240	1
SOUTH ATLANTIC	9	2,196	403	7	263	260	12	2,671	-	10	1,324	9
Delaware	-	130	35	-	9	7	-	69	-	-	36	-
Maryland	-	715	54	-	22	31	3	704	-	-	3	3
District of Columbia	-	13	1	-	3	5	-	107	-	-	46	-
Virginia	7	787	38	1	31	21	3	210	-	1	241	1
West Virginia	1	204	184	-	8	5	3	811	-	1	320	-
North Carolina	-	17	2	2	52	49	1	386	-	-	18	-
South Carolina	-	4	-	-	36	37	1	46	-	8	598	-
Georgia	1	4	40	-	29	15	-	1	-	-	2	-
Florida	-	322	49	4	73	90	1	337	-	-	60	5
EAST SOUTH CENTRAL	2	911	326	3	128	181	27	2,978	3	7	391	9
Kentucky	-	754	117	-	23	76	-	984	-	6	179	2
Tennessee	2	140	178	3	56	60	24	1,613	2	1	200	6
Alabama	-	-	5	-	35	31	2	321	-	-	1	1
Mississippi	-	17	26	-	14	14	1	60	1	-	11	-
WEST SOUTH CENTRAL	7	833	399	2	202	196	23	2,561	3	18	592	11
Arkansas	-	1	-	1	14	13	-	81	2	-	190	-
Louisiana	2	283	2	-	38	38	-	26	-	-	92	2
Oklahoma	2	303	147	-	21	13	15	773	-	-	79	-
Texas	3	246	250	1	129	132	8	1,681	1	18	231	9
MOUNTAIN	2	5,178	1,500	1	47	38	5	1,190	-	11	497	1
Montana	1	287	50	1	6	7	1	25	-	1	236	-
Idaho	-	2,020	12	-	7	5	1	453	-	-	18	-
Wyoming	-	4	3	-	-	1	-	1	-	-	2	-
Colorado	-	320	1,159	-	12	10	3	257	-	7	31	-
New Mexico	-	16	15	-	4	4	-	127	-	2	33	-
Arizona	1	228	82	-	10	3	-	-	-	-	-	1
Utah	-	2,237	151	-	6	7	-	210	-	1	158	-
Nevada	-	66	28	-	2	1	-	117	-	-	19	-
PACIFIC	39	2,733	5,720	2	204	142	23	3,120	2	18	1,229	6
Washington	-	355	293	-	34	19	6	908	1	4	211	1
Oregon	2	175	199	-	17	8	2	395	-	1	137	1
California	35	2,189	5,163	2	128	106	10	1,746	1	13	858	4
Alaska	2	11	-	-	22	7	4	33	-	-	3	-
Hawaii	-	3	65	-	3	2	1	38	-	-	20	-
Guam	-	16	33	-	1	3	-	22	-	-	6	-
Puerto Rico	NA	448	697	-	4	1	NA	752	NA	NA	10	7
Virgin Islands	-	17	8	-	1	-	6	53	-	4	12	2

NA: Not available
*Delayed reports: Men. Inf.: Mo. add 3

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending November 27, 1976 and November 22, 1975 — 47th Week

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
									CUMULATIVE			CUMULATIVE		
	1976	CUM. 1976	CUM. 1976	1976	CUM. 1976	1976	CUM. 1976	1976	1976	1975	1976	1976	1975	CUM. 1976
UNITED STATES	379	29,547	127	7	365	6	854	16,301	909,249	902,017	295	21,651	23,168	2,675
NEW ENGLAND	26	1,026	1	-	24	-	9	470	25,934	25,111	4	742	803	73
Maine	2	72	-	-	-	-	-	29	2,185	2,027	-	21	31	35
New Hampshire	2	41	-	-	2	-	-	27	791	651	-	10	15	1
Vermont	4	31	-	-	-	-	-	14	648	640	-	9	7	-
Massachusetts	8	602	1	-	15	-	4	243	12,293	11,718	-	539	529	24
Rhode Island	4	78	-	-	-	-	3	67	1,853	1,922	1	18	22	5
Connecticut*	6	202	-	-	7	-	2	90	8,164	8,153	3	145	199	8
MIDDLE ATLANTIC	39	5,418	3	1	64	-	65	1,818	104,787	103,261	64	3,582	4,209	70
Upstate New York	10	843	2	-	9	-	26	378	17,030	18,662	13	230	381	16
New York City	11	2,119	1	-	34	-	5	728	46,064	43,073	39	2,223	2,463	-
New Jersey	18	1,106	-	1	13	-	13	219	16,386	15,083	6	538	666	31
Pennsylvania	-	1,350	-	-	8	-	21	493	25,307	26,443	6	591	699	23
EAST NORTH CENTRAL	101	4,264	1	-	40	-	23	3,364	145,338	148,996	33	1,970	1,888	178
Ohio*	33	830	-	-	12	-	18	873	36,505	41,751	14	457	457	34
Indiana	11	474	-	-	4	-	-	368	14,330	12,248	-	102	136	23
Illinois	32	1,488	1	-	12	-	-	1,060	49,763	52,040	14	1,090	914	27
Michigan*	22	1,227	-	-	9	-	5	807	31,309	28,606	4	217	308	7
Wisconsin	3	245	-	-	3	-	-	256	13,431	14,351	1	104	73	87
WEST NORTH CENTRAL	9	1,087	30	-	21	-	28	912	47,795	45,785	12	410	563	638
Minnesota	2	182	3	-	11	-	-	122	8,467	9,147	4	94	105	153
Iowa	1	105	1	-	1	-	3	85	5,902	6,576	-	40	60	125
Missouri*	4	543	22	-	5	-	15	433	19,127	16,672	4	165	252	64
North Dakota	-	31	-	-	-	-	-	16	750	728	-	-	5	122
South Dakota*	-	53	1	-	1	-	3	18	1,419	1,753	-	5	5	94
Nebraska	-	47	-	-	2	-	-	65	4,030	4,040	4	37	19	15
Kansas	2	126	3	-	1	-	7	173	8,100	6,869	-	69	117	65
SOUTH ATLANTIC	75	6,234	10	1	47	2	421	3,176	218,266	220,790	70	6,182	7,130	410
Delaware	-	63	-	-	-	-	1	23	3,105	3,178	-	61	83	18
Maryland	14	857	1	-	5	-	21	385	28,719	26,885	1	491	516	11
District of Columbia	3	283	-	-	2	-	-	252	12,333	12,674	4	536	627	-
Virginia	10	925	3	-	5	-	98	259	22,921	21,678	2	628	560	55
West Virginia*	5	246	-	-	5	-	8	89	2,851	2,844	-	22	54	14
North Carolina	17	1,155	3	-	2	2	184	710	32,557	31,759	10	1,113	943	14
South Carolina	3	456	-	1	5	-	50	361	20,504	20,666	13	345	503	5
Georgia	11	792	2	-	4	-	56	421	42,330	41,481	18	720	976	207
Florida	12	1,457	1	-	19	-	3	676	52,946	59,625	22	2,266	2,868	86
EAST SOUTH CENTRAL	49	2,561	18	-	15	1	159	950	80,058	76,230	5	834	1,065	123
Kentucky*	4	540	1	-	6	-	34	236	10,640	9,857	1	117	158	60
Tennessee	22	841	17	-	8	1	91	332	31,982	30,159	2	285	394	42
Alabama	10	742	-	-	1	-	14	191	22,257	21,141	-	171	240	21
Mississippi	13	438	-	-	-	-	20	191	15,179	15,073	2	261	273	-
WEST SOUTH CENTRAL	23	3,543	47	1	18	3	139	1,937	114,557	111,206	35	2,597	2,058	598
Arkansas	6	435	27	1	5	1	21	376	10,809	11,595	-	93	61	143
Louisiana	-	559	3	-	3	-	-	206	16,487	19,358	6	535	484	7
Oklahoma	4	351	8	-	1	2	97	161	11,217	10,897	3	91	84	157
Texas	13	2,198	9	-	9	-	21	1,194	76,044	69,356	26	1,878	1,429	291
MOUNTAIN	4	830	5	-	20	-	4	578	35,507	36,521	6	714	530	193
Montana	-	45	2	-	2	-	1	49	1,865	1,926	-	12	5	85
Idaho	-	31	-	-	1	-	1	28	1,994	1,885	-	33	15	-
Wyoming	-	18	1	-	-	-	-	17	756	857	-	10	10	1
Colorado	-	133	1	-	5	-	1	118	9,366	9,783	3	152	93	53
New Mexico	-	160	-	-	2	-	1	89	6,674	6,443	3	267	145	4
Arizona	4	367	-	-	9	-	-	181	10,381	9,637	-	194	194	29
Utah	-	43	1	-	1	-	-	24	2,037	2,287	-	20	15	21
Nevada	-	33	-	-	-	-	-	72	2,434	3,703	-	26	53	-
PACIFIC	53	4,584	12	4	116	-	6	3,096	137,007	134,117	66	4,620	4,922	392
Washington	-	360	2	-	5	-	3	303	11,489	12,194	-	129	164	8
Oregon	1	180	1	1	1	-	-	221	9,652	10,189	-	99	133	11
California	41	3,387	9	3	104	-	3	2,418	108,973	106,211	64	4,280	4,567	331
Alaska	-	80	-	-	-	-	-	56	3,918	3,320	2	24	6	42
Hawaii	11	577	-	-	6	-	-	98	2,975	2,203	-	88	52	-
Guam*	-	40	-	-	1	-	-	-	280	376	-	2	17	-
Puerto Rico	NA	363	-	NA	1	NA	-	NA	2,316	2,641	NA	521	653	40
Virgin Islands	1	6	-	-	-	-	-	-	214	205	3	51	40	-

NA: Not available

*Delayed reports: TB: Ohio delete 1, Mich. delete 1, Mo. delete 2, Ky. delete 1; GC: S. Dak. delete 1, Guam add 5; Syphilis: Ky. delete 1; An. rabies: Conn. delete 4, W. Va. add 1

Table IV
Deaths in 121 United States Cities*
Week Ending November 27, 1976 – 47th Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	ALL AGES
NEW ENGLAND	582	372	161	16	20	25
Boston, Mass.	153	79	54	8	9	5
Bridgeport, Conn.	48	30	18	-	-	3
Cambridge, Mass.	18	14	3	-	1	-
Fall River, Mass.	25	19	6	-	-	-
Hartford, Conn.	50	36	12	-	1	1
Lowell, Mass.	25	15	8	1	-	-
Lynn, Mass.	10	7	2	-	1	1
New Bedford, Mass.	14	11	2	-	1	1
New Haven, Conn.	39	28	6	2	1	3
Providence, R.I.	57	39	14	1	3	4
Somerville, Mass.	16	10	3	-	-	1
Springfield, Mass.	48	30	14	2	1	3
Waterbury, Conn.	27	16	10	1	-	1
Worcester, Mass.	52	38	9	1	2	2
MIDDLE ATLANTIC	2,412	1,568	558	139	84	102
Albany, N. Y.	50	35	10	3	2	2
Allentown, Pa.	33	23	8	2	-	2
Buffalo, N. Y.	80	51	15	5	6	5
Camden, N. J.	23	18	4	-	1	1
Elizabeth, N. J.	17	8	6	1	2	1
Erie, Pa.	35	22	7	3	-	1
Jersey City, N. J.	27	18	8	1	-	1
Newark, N. J.	46	26	9	5	3	7
New York City, N. Y.	1,226	812	274	74	34	40
Paterson, N. J.	31	19	9	-	3	2
Philadelphia, Pa.	395	239	105	22	17	17
Pittsburgh, Pa.	110	64	28	6	9	6
Reading, Pa.	38	31	5	2	-	1
Rochester, N. Y.	100	63	26	6	1	5
Schenectady, N. Y.	23	15	4	1	1	1
Scranton, Pa.	27	21	5	1	-	1
Syracuse, N. Y.	68	41	20	2	4	5
Trenton, N. J.	26	18	4	3	1	-
Utica, N. Y.	16	12	4	-	-	1
Yonkers, N. Y.	41	32	7	2	-	3
EAST NORTH CENTRAL	1,939	1,098	546	121	94	53
Akron, Ohio	31	18	6	3	2	-
Canton, Ohio	38	21	11	1	2	4
Chicago, Ill.	495	267	150	32	28	7
Cincinnati, Ohio	146	93	38	6	3	3
Cleveland, Ohio	196	90	67	15	12	2
Columbus, Ohio	137	76	41	10	8	8
Dayton, Ohio	53	28	14	5	4	-
Detroit, Mich.	252	159	57	14	11	6
Evansville, Ind.	39	23	9	3	2	1
Fort Wayne, Ind.	37	21	10	2	-	6
Gary, Ind.	15	6	5	3	1	1
Grand Rapids, Mich.	37	20	9	2	2	2
Indianapolis, Ind.	133	80	36	7	4	1
Madison, Wis.	34	17	10	3	3	5
Milwaukee, Wis.	84	59	18	4	2	5
Peoria, Ill.	17	10	3	1	2	-
Rockford, Ill.	24	6	12	2	-	-
South Bend, Ind.	36	16	16	3	-	1
Toledo, Ohio	76	53	12	3	8	-
Youngstown, Ohio	59	35	22	2	-	1
WEST NORTH CENTRAL	609	414	126	27	19	15
Des Moines, Iowa	33	26	4	2	-	1
Duluth, Minn.	27	17	7	-	1	4
Kansas City, Kans.	27	14	6	3	2	1
Kansas City, Mo.	98	63	25	5	2	3
Lincoln, Nebr.	18	13	3	2	-	-
Minneapolis, Minn.	77	54	17	2	3	1
Omaha, Nebr.	59	38	18	-	-	-
St. Louis, Mo.	160	111	27	7	9	1
St. Paul, Minn.	56	41	7	3	1	1
Wichita, Kans.	54	37	12	3	1	3
SOUTH ATLANTIC	1,063	625	299	65	42	33
Atlanta, Ga.	160	80	50	14	9	5
Baltimore, Md.	211	127	57	12	10	2
Charlotte, N. C.	65	36	14	7	5	3
Jacksonville, Fla.	29	13	13	1	2	1
Miami, Fla.	142	97	32	8	3	3
Norfolk, Va.	46	26	14	2	1	4
Richmond, Va.	82	53	19	3	2	5
Savannah, Ga.	26	11	12	2	1	1
St. Petersburg, Fla.	57	41	15	1	-	3
Tampa, Fla.	40	24	10	3	1	1
Washington, D. C.	157	84	52	11	5	4
Wilmington, Del.	48	33	11	1	3	1
EAST SOUTH CENTRAL	508	301	133	33	23	20
Birmingham, Ala.	81	45	21	4	7	2
Chattanooga, Tenn.	29	15	8	3	3	-
Knoxville, Tenn.	30	22	5	3	-	-
Louisville, Ky.	69	46	18	3	1	6
Memphis, Tenn.	123	80	27	6	4	1
Mobile, Ala.	51	23	18	4	5	-
Montgomery, Ala.	35	21	9	3	2	4
Nashville, Tenn.	90	49	27	7	1	7
WEST SOUTH CENTRAL	820	458	231	53	41	18
Austin, Tex.	19	12	5	2	-	1
Baton Rouge, La.	43	25	8	6	3	4
Corpus Christi, Tex.	26	17	6	-	1	-
Dallas, Tex.	148	71	51	9	9	2
El Paso, Tex.	39	20	9	2	5	1
Fort Worth, Tex.	85	56	18	5	4	3
Houston, Tex.	158	83	46	13	4	2
Little Rock, Ark.	43	22	17	1	1	1
New Orleans, La.	82	53	20	3	5	-
San Antonio, Tex.	111	62	30	10	6	2
Shreveport, La.	24	13	10	-	1	-
Tulsa, Okla.	42	24	11	2	2	2
MOUNTAIN	443	272	92	31	31	15
Albuquerque, N. Mex.	36	23	6	2	1	5
Colorado Springs, Colo.	21	16	3	1	1	1
Denver, Colo.	104	65	24	8	3	4
Las Vegas, Nev.	23	8	11	2	2	2
Ogden, Utah	18	8	5	-	3	-
Phoenix, Ariz.	96	62	19	6	8	1
Pueblo, Colo.	18	15	2	-	1	-
Salt Lake City, Utah	59	33	11	5	10	2
Tucson, Ariz.	68	42	11	7	2	-
PACIFIC	1,342	861	328	82	37	33
Berkeley, Calif.	21	15	4	2	-	-
Fresno, Calif.	50	26	14	5	4	1
Glendale, Calif.	30	22	6	2	-	3
Honolulu, Hawaii	45	23	12	5	3	2
Long Beach, Calif.	98	59	31	5	3	1
Los Angeles, Calif.	380	258	97	16	6	8
Oakland, Calif.	60	40	13	3	1	-
Pasadena, Calif.	26	20	2	1	3	1
Portland, Oreg.	128	86	25	10	4	-
Sacramento, Calif.	48	25	20	-	1	3
San Diego, Calif.	94	49	25	11	3	1
San Francisco, Calif.	123	77	33	10	2	2
San Jose, Calif.	42	29	8	1	1	-
Seattle, Wash.	141	89	28	9	5	3
Spokane, Wash.	38	29	8	-	1	7
Tacoma, Wash.	18	14	2	2	-	1
TOTAL	9,718	5,969	2,474	567	391	314
Expected Number	11,734	7,118	3,052	747	406	405

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

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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.

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Viral Hemorrhagic Fever — Continued

been hospitalized in isolation, and all known contacts have been placed under surveillance. He received immune plasma, and his condition has improved.

Reported by the World Health Organization in the Weekly Epidemiological Record 51(46,47):354, 363, 1976.

Current Trends

Influenza — Worldwide

Worldwide: A small, localized outbreak of influenza-like illness among sugar workers in Jamaica has been confirmed as influenza B by serologic testing.

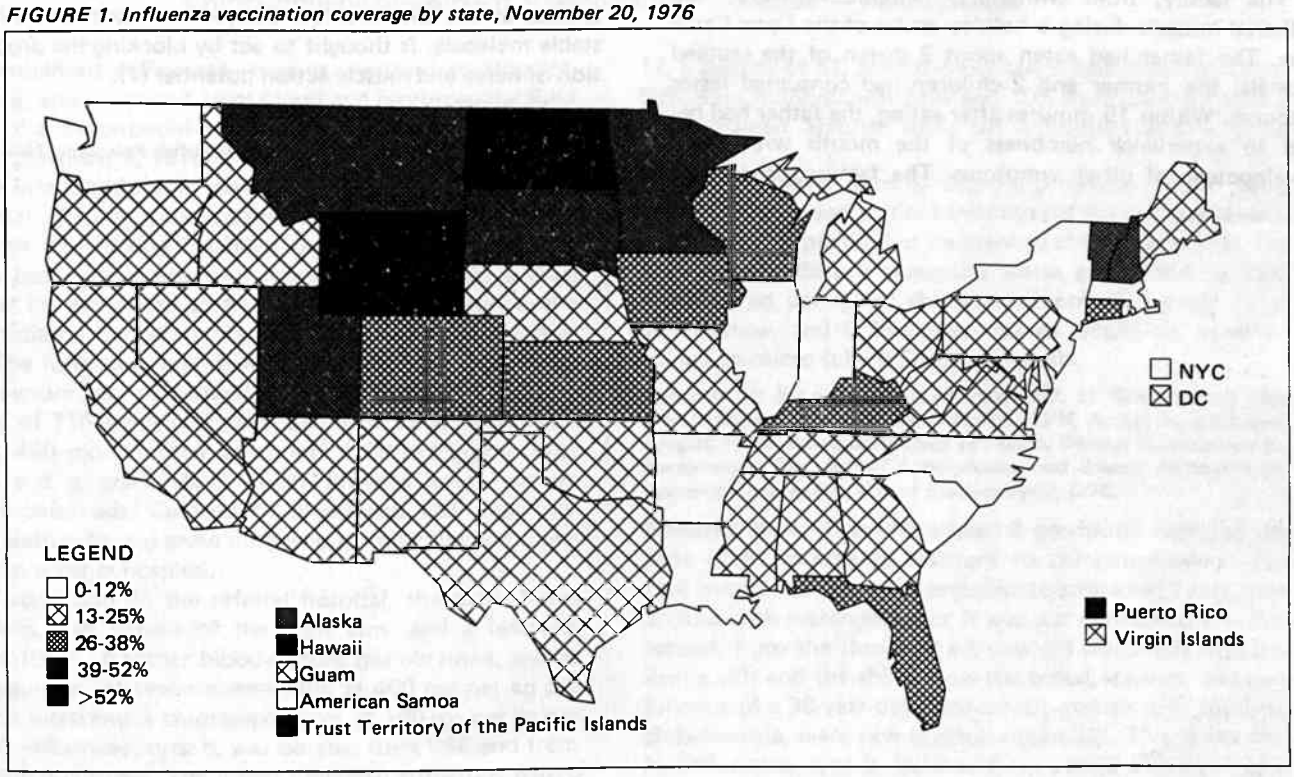
Reported by the World Health Organization in the Weekly Epidemiological Record 51(47): 363, 1976.

United States: As previously reported (MMWR 25 [46]), serologic tests of blood specimens from a 32-year-old Missouri man confirmed a 4-fold rise in titer to A/New Jersey/76. There has been no evidence of secondary cases. Investigation is continuing.

A total of 6,186,866 influenza inoculations were administered during the week ending November 20, for a cumulative total of 25,376,438 vaccinations. Currently Wyoming, Hawaii, the Trust Territories of the Pacific Islands, Puerto Rico, North Dakota, and New Hampshire have immunized over half of their eligible populations. The accompanying map illustrates the percentage of the population 18 and over immunized nationwide, as of November 20.

Reported by the National Influenza Immunization Program, CDC.

FIGURE 1. Influenza vaccination coverage by state, November 20, 1976



Epidemiologic Notes and Reports

Paralytic Shellfish Poisoning — Alaska

Three incidents of paralytic shellfish poisoning (PSP) involving at least 6 persons were reported in a 1-month period last summer in southeastern Alaska.

The first incident involved a Washington-based fisherman who was admitted to the Juneau Hospital on June 30 with typical PSP symptoms of oral numbness, vomiting, double vision, and loss of equilibrium. The day before, the patient had ingested 2-3 dozen steamed butter clams, dug on June 25 in the area of Montague Island in Prince William Sound. The patient recovered after a week, although general weakness persisted. Another crew member had milder symptoms and was not hospitalized. Clam samples were not available for laboratory testing.

The second incident occurred on July 14, when a 66-year-old woman was admitted to the Juneau Hospital with symptoms similar to those of the first patient. The woman was a member of a 3-party group from Texas on a sailing cruise of southeastern Alaska. The group had dug several dozen butter clams on July 14 at Funter Bay on Admirality Island, about 20 air miles from Juneau, and had prepared a clam chowder. The patient was the only one who consumed any of the chowder. About 2 hours after eating, she experienced severe vomiting. The group immediately sailed back to Juneau, and during the 5-hour cruise her other symptoms developed. The patient recovered and was released from the hospital several days later. Clams remaining from those dug were available, and mouse bioassay showed a level of 1,464 micrograms of PSP toxin per 100 grams of clam meat.

Paralytic Shellfish Poisoning — Continued

The last reported outbreak occurred July 18, when a local physician in Haines performed mouth-to-mouth resuscitation and an emergency tracheotomy on a 39-year-old male and treated 3 other members of the patient's family, all of whom had symtoms of PSP — including oral numbness, vomiting, double vision, loss of equilibrium, and varying degrees of respiratory paralysis — after consuming a meal of local mussels. The family was immediately air-evacuated to Juneau for treatment and hospitalization. The father was placed on a respirator for 48 hours. Recovery was slow with muscular weakness persisting for several days. The 3 other family members were released after 2 days. PSP was the admitting diagnosis and confirmed by mouse bioassay of the stomach contents of the father with a report of 370 micrograms of PSP toxin per 100 grams of sample.

The family, from Whitehorse, Yukon Territory, had gathered mussels during a holiday cruise of the Lynn Canal area. The father had eaten about 2 dozen of the sautéed mussels; the mother and 2 children had consumed lesser amounts. Within 15 minutes after eating, the father had begun to experience numbness of the mouth with rapid development of other symptoms. The family rushed into Haines and was taken to the Juneau Hospital. Samples of the mussels from the same beach location were later obtained and tested; 6,107 micrograms of PSP toxin per 100 grams of meat were found.

Reported by D Gerber, Southeastern Regional Laboratory, Juneau; K Ballentine, M Bixby, PHN, J Cladouhos, R Fraser, MD, G Markham, JP Middaugh, MD, Acting State Epidemiologist, and FP Pauls, DrPH, Alaska State Dept of Health and Social Services; and Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Although PSP has been recognized in Alaska for at least 167 years, the incidence and severity of the phenomena increased dramatically during the summer of 1976. The majority of the cases involved non-residents of the state.

PSP is caused by ingestion of bivalve mollusks contaminated with neurotoxin (termed saxitoxin) produced by species of the dinoflagellate *Gonyaulax*. Saxitoxin, a heat-stable molecule, is thought to act by blocking the propagation of nerve and muscle action potential (*1*).

References

1. Hughes JM, Merson MH: Fish and Shellfish Poisoning. New Engl J Med 295:1117-1120, 1976

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