

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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Gastroenteritis Caused by *Vibrio parahaemolyticus* Aboard a Cruise Ship

An outbreak of gastrointestinal illness occurred aboard the S/S Statendam, a Caribbean cruise ship of Dutch registry, on its December 2-11 voyage. The outbreak was uncovered on December 8, 1977, when a U.S. Quarantine Officer boarded the ship in St. Thomas, U.S. Virgin Islands, to conduct a follow-up inspection of sanitary deficiencies noted during a previous voyage. A routine review of the physician's log revealed that 29 (4%) of 671 passengers and 7 (2%) of 388 crew members had reported illness between December 3 and 7. However, the ship had not notified health officials of the illness on board, as required by U.S. Quarantine Regulations, before docking in San Juan on December 7 or in St. Thomas the next day. Following these findings, an epidemiologic and environmental investigation was begun on December 8.

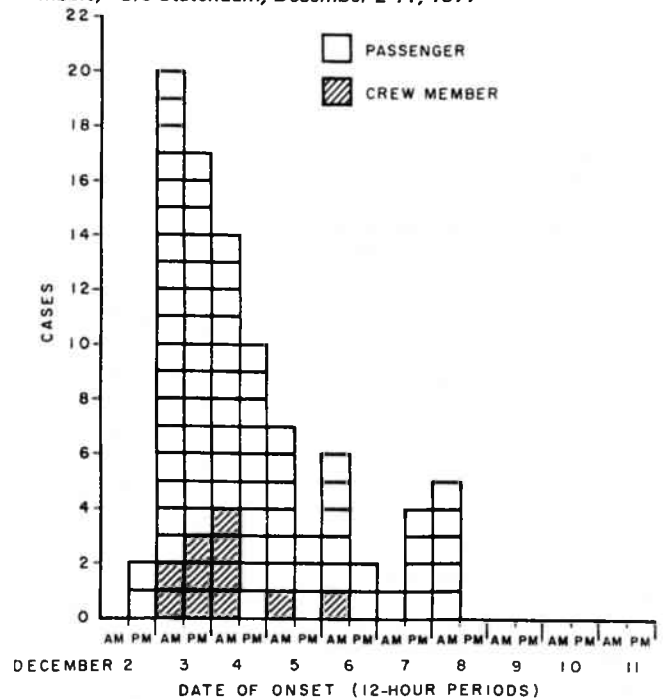
Eighty-six (13%) of 660 passengers and 12 (3%) of 376 crew members responding to a questionnaire survey on December 9 reported suffering a gastrointestinal illness (defined as at least 3 or more loose stools per day or vomiting and abdominal cramps). Most passengers and crew members became ill on December 3 and 4 (Figure 1), but cases occurred on each day of the cruise including December 8. The duration of illness ranged from 1 to 8 days with a median of 1 day.

Illness was equally distributed among male and female and Dutch and non-Dutch passengers as well as Indonesian and non-Indonesian crew members. It occurred with equal frequency among passengers from each deck and from each sitting in the dining room.

Analysis of food-specific attack rates for items consumed by passengers on the evening of December 2, the first evening of the voyage, showed a significant association between illness and consumption of seafood salad ($p=.02$). There was no association between illness and consumption of water or ice.

Laboratory analyses were performed on rectal swab specimens, food samples, and water samples. *Vibrio parahaemolyticus* was cultured at CDC from 8 of 10 rectal swabs from ill passengers but from none of 10 rectal swabs from well controls. Seven of the isolates were type 03:K33; 1 was type 05:K negative. All were Kanagawa positive. Samples of the actual seafood salad served on the evening of December 2 were not available for analysis; an attempt to

FIGURE 1. Gastrointestinal illness in 80 passengers and 11 crew members, * S/S Statendam, December 2-11, 1977



*Excludes 6 passengers and 1 crew member for whom date of onset was unknown.

isolate the organism from samples of the precooked seafood used in making the seafood salad was unsuccessful. Water samples obtained while the ship was in St. Thomas showed adequate levels of residual chlorine and were negative for coliform organisms.

An environmental inspection revealed several defects in food handling. Precooked, thawed seafood was stored before it was served in the same refrigerator with uncooked seafood, and leftover prepared foods were saved for use the next day. Other sanitary deficiencies, including the incorrect calibration of the ship's automatic chlorinator, which had been noted and brought to the attention of the ship's captain during a previous voyage, were also identified. Galley personnel denied using salt water from the ship's fire control system in the galley.

Gastroenteritis — continued

Reported by Quarantine Div, Field Services Div, Epidemiologic Investigations Laboratory Br, Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Outbreaks of *V. parahaemolyticus* gastroenteritis aboard cruise ships, though infrequent, have been reported (1). The common denominator in these previous episodes was the use of salt water from the ship's fire control system in the galley to thaw frozen seafood or to wash fresh seafood. Although galley personnel on the S/S Statendam denied such practices, the other food-handling deficiencies identified could have resulted in cross-contamina-

tion of the precooked frozen seafood used in the seafood salad.

According to the Public Health Service laws and regulations, the Master of the S/S Statendam was required to notify the San Juan Quarantine Station of the illness on board before arrival. Had the follow-up inspection not been conducted, this failure to comply could have resulted in the outbreak's going unrecognized. CDC has apprised the cruise ship company of the seriousness of the violation and has informed them that any future breach will result in further action, as provided by law.

Reference

1. MMWR 24:109-110, 1975

Current Trends

Surveillance of Childhood Lead Poisoning — United States

During the fourth quarter of fiscal year 1977, 60 Childhood Lead Poisoning Prevention Programs reported screening 101,648 children for undue lead absorption. This figure brought the cumulative total of children screened during fiscal year 1977 to 380,496.* In the fourth quarter, 9,287 children were found to have undue lead absorption. This is a confirmed positive ratio (CPR) of 9.1 per 100 screened,

*Programs are cautioned not to add quarterly figures published in the MMWR to obtain annual numbers. The published figures reflect only that data received by the close of the report period.

a substantial increase over the third quarter ratio of 6.6 per 100 screened. The annual CPR of 7.4, however, is less than that reported for fiscal year 1976 (8.6 per 100 screened). The ratio of children chelated remained approximately the same for both years (12.0 vs 11.8).

The ratio of hazards reduced to hazards found during the fourth quarter remained the same as in the previous quarter but decreased for fiscal year 1977 as compared to fiscal year 1976. However, improvement was shown in the ratio

(Continued on page 71)

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

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

DISEASE	8th WEEK ENDING		MEDIAN 1973-1977 ^{††}	CUMULATIVE, FIRST 8 WEEKS		
	February 25, 1978	February 26, 1977 [†]		February 25, 1978	February 26, 1977 [†]	MEDIAN 1973-1977 ^{††}
Aseptic meningitis	34	41	27	286	296	292
Brucellosis	1	6	4	17	30	21
Chickenpox	3,719	7,409	5,653	26,006	42,974	38,006
Diphtheria	-	3	4	11	5	23
Encephalitis	Primary	8	13	74	93	119
	Post-Infectious	1	6	6	16	32
Hepatitis, Viral	Type B	262	306	2,115	2,339	1,568
	Type A	465	570	3,888	5,083	5,428
	Type unspecified	172	186	727	1,225	1,411
Malaria	9	6	4	53	41	41
Measles (rubeola)	617	1,899	622	2,510	9,270	4,573
Meningococcal infections, total	68	45	41	384	320	270
Civilian	68	45	41	382	319	263
Military	-	-	-	2	1	3
Mumps	422	740	1,425	2,768	4,616	11,136
Pertussis	27	4	-	302	103	-
Rubella (German measles)	174	802	498	1,189	2,705	2,068
Tetanus	1	-	-	3	7	8
Tuberculosis	498	563	569	3,681	4,078	4,078
Tularemia	2	2	1	11	13	13
Typhoid fever	14	5	3	53	45	45
Typhus, tick-borne (Rky. Mt. spotted fever)	-	1	1	6	12	10
Venereal Diseases:						
Gonorrhea	Civilian	15,692	17,351	17,351	136,163	146,190
	Military	462	332	419	3,518	4,349
Syphilis, primary and secondary	Civilian	439	450	525	2,813	3,566
	Military	11	9	8	46	51
Rabies in animals	46	41	45	336	330	330

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	-	Poliomyelitis, total:	-
Botulism:	1	Paralytic:	-
Congenital rubella syndrome: Ups. NY 1, Calif. 1	7	Psittacosis: Del. 1, Vs. 1	6
Leprosy:	4	Rabies in man:	-
Leptospirosis: Calif. 1	5	Trichinosis:	6
Plague:	-	Typhus, murine: Tenn. 1	4

[†]Delayed reports received for calendar year 1977 are used to update last year's weekly and cumulative totals.

^{††}Medians for Gonorrhea and Syphilis are based on data for 1976-1977

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending February 25, 1978 and February 26, 1977 - 8th Week

AREA REPORTING	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1978	1977 [†]	1978	1978	1978	1978		
UNITED STATES	34	1	3,719	-	11	16	8	1	262	465	172	9	53
NEW ENGLAND	-	-	331	-	-	-	-	-	7	8	11	1	5
Maine	-	-	42	-	-	-	-	-	-	-	-	-	1
New Hampshire	-	-	9	-	-	-	-	-	-	-	-	-	1
Vermont	-	-	-	-	-	-	-	-	-	-	1	-	-
Massachusetts	-	-	185	-	-	-	-	-	3	3	10	-	1
Rhode Island	-	-	39	-	-	-	-	-	1	3	-	-	-
Connecticut	-	-	56	-	-	-	-	-	3	2	-	1	2
MIDDLE ATLANTIC	4	-	370	-	-	7	5	-	33	49	29	2	18
Upstate New York	-	-	249	-	-	1	1	-	7	13	11	-	-
New York City	1	-	56	-	-	1	1	-	7	10	2	-	10
New Jersey	-	-	NN	-	-	-	2	-	13	11	15	2	2
Pennsylvania	3	-	65	-	-	5	1	-	6	15	1	-	6
EAST NORTH CENTRAL	1	-	1,724	-	-	3	-	-	44	49	12	-	-
Ohio	-	-	354	-	-	-	-	-	3	16	-	-	-
Indiana *	-	-	83	-	-	1	-	-	2	4	6	-	-
Illinois	-	-	251	-	-	-	-	-	26	8	2	-	-
Michigan	1	-	713	-	-	2	-	-	12	17	3	-	-
Wisconsin *	-	-	323	-	-	-	-	-	1	4	1	-	-
WEST NORTH CENTRAL	-	-	442	-	-	2	-	-	20	37	10	1	5
Minnesota	-	-	-	-	-	-	-	-	6	14	-	-	1
Iowa	-	-	205	-	-	-	-	-	5	4	1	-	-
Missouri *	-	-	17	-	-	2	-	-	8	12	8	1	3
North Dakota	-	-	20	-	-	-	-	-	-	3	-	-	-
South Dakota	-	-	22	-	-	-	-	-	-	-	-	-	-
Nebraska	-	-	1	-	-	-	-	-	1	2	1	-	1
Kansas	-	-	177	-	-	-	-	-	-	2	-	-	-
SOUTH ATLANTIC	8	1	298	-	-	1	3	1	51	53	20	2	7
Delaware	-	-	5	-	-	-	-	-	-	-	-	1	1
Maryland	2	-	28	-	-	-	-	-	4	7	1	1	2
District of Columbia	-	-	-	-	-	-	-	-	8	1	-	-	-
Virginia	2	1	19	-	-	-	2	-	7	2	6	-	-
West Virginia	-	-	92	-	-	-	-	-	2	5	1	-	-
North Carolina	2	-	NN	-	-	1	1	-	4	2	2	-	-
South Carolina	-	-	3	-	-	-	-	-	4	4	2	-	1
Georgia	-	-	-	-	-	-	-	-	4	1	-	-	1
Florida *	2	-	151	-	-	-	-	1	18	31	8	-	2
EAST SOUTH CENTRAL	2	-	89	-	-	-	-	-	14	26	-	1	1
Kentucky	1	-	14	-	-	-	-	-	-	-	-	-	-
Tennessee *	1	-	NN	-	-	-	-	-	10	18	-	1	1
Alabama	-	-	63	-	-	-	-	-	1	2	-	-	-
Mississippi	-	-	12	-	-	-	-	-	3	6	-	-	-
WEST SOUTH CENTRAL	3	-	130	-	-	-	-	-	20	73	33	-	3
Arkansas	-	-	2	-	-	-	-	-	1	3	2	-	-
Louisiana	-	-	NN	-	-	-	-	-	2	13	5	-	2
Oklahoma	1	-	-	-	-	-	-	-	-	5	5	-	-
Texas	2	-	128	-	-	-	-	-	17	52	21	-	1
MOUNTAIN	1	-	163	-	-	-	-	-	12	47	18	-	1
Montana	-	-	39	-	-	-	-	-	3	4	1	-	-
Idaho	-	-	52	-	-	-	-	-	-	3	1	-	-
Wyoming	-	-	1	-	-	-	-	-	-	1	-	-	-
Colorado	-	-	69	-	-	-	-	-	6	14	4	-	1
New Mexico	1	-	1	-	-	-	-	-	-	9	1	-	-
Arizona	-	-	NN	-	-	-	-	-	2	16	11	-	-
Utah	-	-	-	-	-	-	-	-	-	-	-	-	-
Nevada *	-	-	1	-	-	-	-	-	1	-	-	-	-
PACIFIC	15	-	172	-	11	3	-	-	61	123	39	2	13
Washington *	1	-	156	-	11	-	-	-	7	15	1	-	1
Oregon	-	-	1	-	-	-	-	-	14	16	6	-	-
California *	8	-	-	-	-	2	-	-	37	90	32	1	11
Alaska	-	-	5	-	-	-	-	-	1	-	-	-	-
Hawaii	6	-	10	-	-	1	-	-	2	2	-	1	1
Guam *	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-
Puerto Rico	-	-	4	-	-	-	-	1	-	9	11	-	2
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-	-	-

†Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.

NA: Not available

†Delayed reports received for 1977 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 issue: Asep. meng.: Fla. +1, Nev. +1, Calif. +13; Bruc.: Calif. +1; Chickenpox: Ind. +200, Mo. +846, Wash. +129, Calif. +98, Guam +17; Diph.: Nev. +1; Hep. B: Wis. -1, Minn. -1, Fla. +3, Wash. +3, Calif. +45; Hep. A: Wis. -1, Minn. +1, Fla. -1, Tenn. +1, Nev. +1, Wash. +13, Calif. +77; Hep. unsp.: Wash. +4, Calif. +32; Malaria: Calif. +2.

Table III-Continued
 Cases of Specified Notifiable Diseases: United States
 Weeks Ending February 25, 1978 and February 26, 1977 - 8th Week

REPORTING AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1978	CUMULATIVE		1978	CUMULATIVE		1978	CUM. 1978	1978	1978	CUM. 1978	CUM. 1978
		1978	1977†		1978	1977†						
UNITED STATES	617	2,510	9,270	68	384	320	422	2,768	27	174	1,189	3
NEW ENGLAND	46	109	399	5	22	16	15	151	-	2	37	-
Maine	-	24	1	-	3	2	10	103	-	-	17	-
New Hampshire*	1	5	187	-	3	-	-	3	-	-	2	-
Vermont	-	5	104	1	1	1	-	-	-	-	-	-
Massachusetts	10	39	48	-	4	4	2	15	-	1	14	-
Rhode Island	-	-	-	1	4	-	1	7	-	-	1	-
Connecticut	35	36	59	3	7	9	2	23	-	1	3	-
MIDDLE ATLANTIC	89	227	1,014	6	53	41	31	160	2	31	152	-
Upstate New York	65	141	217	4	22	9	12	54	-	9	24	-
New York City	15	47	43	1	15	9	7	48	-	1	9	-
New Jersey*	-	1	26	-	7	15	9	40	-	12	60	-
Pennsylvania	9	38	728	1	9	8	3	18	2	9	59	-
EAST NORTH CENTRAL	300	1,210	2,648	1	26	37	158	1,024	3	65	513	-
Ohio	1	12	148	-	1	19	13	102	-	10	31	-
Indiana*	3	28	1,359	-	9	-	2	39	1	4	24	-
Illinois	85	199	301	-	-	9	47	338	1	15	16	-
Michigan	183	906	207	1	14	6	71	383	1	19	359	-
Wisconsin*	28	65	633	-	2	3	25	162	-	17	83	-
WEST NORTH CENTRAL	2	22	1,802	2	13	15	71	480	-	3	47	1
Minnesota*	-	1	250	1	3	1	2	6	-	-	1	-
Iowa	1	10	1,017	-	1	2	2	21	-	2	7	-
Missouri*	-	-	124	1	8	11	53	185	-	1	11	-
North Dakota	-	-	2	-	-	-	-	4	-	-	-	-
South Dakota	-	-	7	-	-	1	-	1	-	-	15	-
Nebraska	-	-	67	-	-	-	-	3	-	-	-	-
Kansas	1	11	335	-	1	-	14	258	-	-	13	1
SOUTH ATLANTIC	108	503	314	25	125	60	27	174	2	37	113	2
Delaware	-	3	-	-	-	1	1	11	-	-	1	-
Maryland	1	1	13	1	4	7	-	13	-	-	1	-
District of Columbia	-	-	-	-	-	-	-	-	-	1	1	-
Virginia*	68	299	199	3	13	3	1	35	-	2	22	-
West Virginia	31	108	28	1	4	6	8	33	-	31	74	-
North Carolina	2	25	1	7	29	13	5	26	-	2	5	-
South Carolina	5	43	2	1	11	4	-	7	-	-	-	-
Georgia	1	1	69	3	16	8	-	3	-	-	-	-
Florida	-	23	2	9	48	18	12	46	2	1	10	1
EAST SOUTH CENTRAL	32	213	143	7	29	29	43	262	6	7	51	-
Kentucky	1	33	77	2	10	13	3	37	1	3	16	-
Tennessee*	30	151	63	-	7	7	4	150	5	3	31	-
Alabama	-	1	-	2	8	7	34	65	-	1	1	-
Mississippi	1	28	3	3	4	2	2	10	-	-	3	-
WEST SOUTH CENTRAL	22	107	428	14	54	71	42	273	5	7	71	-
Arkansas	-	1	3	1	6	2	8	31	-	-	3	-
Louisiana	18	43	22	9	15	35	3	11	-	3	31	-
Oklahoma*	-	4	23	2	6	1	-	4	2	-	3	-
Texas*	4	59	380	2	27	33	31	227	3	4	34	-
MOUNTAIN	-	36	699	-	4	5	2	56	-	5	29	-
Montana	-	22	292	-	1	-	-	7	-	1	2	-
Idaho	-	1	22	-	-	1	-	11	-	2	3	-
Wyoming	-	-	1	-	-	-	-	-	-	-	-	-
Colorado	-	5	144	-	-	1	2	16	-	-	5	-
New Mexico	-	-	162	-	1	-	-	4	-	-	-	-
Arizona	-	5	67	-	2	2	-	2	-	2	5	-
Utah	-	1	2	-	-	-	-	16	-	-	13	-
Nevada	-	2	9	-	-	1	-	-	-	-	1	-
PACIFIC	18	83	1,823	8	58	46	33	188	9	17	176	-
Washington*	4	15	124	1	12	7	13	52	1	1	28	-
Oregon	1	2	30	1	4	2	3	25	2	-	11	-
California*	13	61	1,614	5	39	28	17	103	6	16	136	-
Alaska	-	-	55	-	2	8	-	3	-	-	-	-
Hawaii	-	5	-	1	1	1	-	5	-	-	1	-
Guam*	NA	-	3	-	-	-	NA	-	NA	NA	-	-
Puerto Rico	1	25	99	-	-	-	21	154	-	-	1	-
Virgin Islands	-	1	5	-	-	-	-	-	-	-	-	-

NA: Not available

†Delayed reports received for 1977 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 issue: Measles: Ohio -1, Ind. +3, Wis. -5, Va. +3, Tex. +2, Wash. +1, Calif. +11, Guam +1; Men. inf.: Tenn. +1, Okla. -1, Calif. +12; Mumps: Ind. +12, Minn. +2, Mo. +87, Tenn. +6, Wash. +2, Calif. +15, Guam +1; Pertussis: N.H. +1, Ind. +1, Calif. +6; Rubella: N.H. +1, N.J. +22, Ohio +1, Ind. +5, Wis. +2, Mo. +6, Va. -3, Tex. -2, Wash. +2, Calif. +40.

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending February 25, 1978 and February 26, 1977 - 8th Week

REPORTING AREA	TUBERCULOSIS		TULA-REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS CUM. 1978	
	1978	CUM. 1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	GONORRHEA		SYPHILIS (Pri. & Sec.)		1978	CUMULATIVE		
								1978	1977 †	1978	1977 †				
													1978		1977 †
UNITED STATES	498	3,681	11	14	53	-	6	15,692	136,163	146,190	439	2,813	3,566	336	
NEW ENGLAND	21	101	-	3	11	-	-	442	3,389	3,713	14	89	129	10	
Maine	-	7	-	-	-	-	-	73	279	306	-	1	6	10	
New Hampshire	-	4	-	1	5	-	-	13	154	141	-	1	-	-	
Vermont	1	6	-	-	-	-	-	6	97	90	-	-	3	-	
Massachusetts	12	45	-	-	2	-	-	173	1,523	1,624	8	60	88	-	
Rhode Island	1	9	-	2	4	-	-	43	187	258	1	2	2	-	
Connecticut	7	30	-	-	-	-	-	134	1,149	1,294	5	25	30	-	
MIDDLE ATLANTIC	55	559	-	1	7	-	3	1,691	14,906	17,111	36	385	515	7	
Upstate New York	7	72	-	-	2	-	1	259	1,930	1,940	-	19	45	7	
New York City	26	310	-	1	4	-	-	545	5,937	8,576	29	272	327	-	
New Jersey	22	157	-	-	-	-	-	510	2,990	2,449	4	51	68	-	
Pennsylvania*	NA	20	-	-	1	-	2	377	4,049	4,146	3	43	75	-	
EAST NORTH CENTRAL	64	566	-	1	3	-	-	1,866	18,082	22,225	18	109	414	14	
Ohio	9	113	-	-	1	-	-	220	5,064	5,838	10	38	112	-	
Indiana	11	80	-	-	-	-	-	198	2,225	1,847	-	18	19	2	
Illinois	14	215	-	-	-	-	-	789	4,401	7,750	8	19	225	1	
Michigan	25	135	-	1	2	-	-	416	4,573	4,766	-	25	44	-	
Wisconsin	5	23	-	-	-	-	-	243	1,819	2,024	-	9	14	11	
WEST NORTH CENTRAL	14	120	5	2	4	-	-	910	7,003	7,595	8	53	78	115	
Minnesota	3	35	-	-	-	-	-	218	1,321	1,229	2	11	25	44	
Iowa	1	12	-	2	2	-	-	63	905	954	1	6	6	28	
Missouri	4	37	4	-	2	-	-	313	2,604	3,247	5	23	23	11	
North Dakota	-	3	-	-	-	-	-	19	174	123	-	-	1	15	
South Dakota*	4	14	-	-	-	-	-	32	285	217	-	1	1	12	
Nebraska	-	2	-	-	-	-	-	90	571	614	-	1	12	-	
Kansas	2	17	1	-	-	-	-	175	1,143	1,211	-	11	10	5	
SOUTH ATLANTIC	134	878	1	-	6	-	1	4,183	33,858	34,594	137	833	1,027	36	
Delaware	-	1	-	-	-	-	-	22	652	520	-	3	8	-	
Maryland*	20	185	1	-	-	-	-	471	4,626	4,101	8	57	70	-	
District of Columbia	6	50	-	-	-	-	-	221	2,181	2,356	10	67	106	-	
Virginia	19	87	-	-	1	-	-	340	3,005	3,511	18	84	87	-	
West Virginia	3	43	-	-	-	-	-	43	504	446	1	1	1	-	
North Carolina	16	142	-	-	-	-	-	662	4,496	5,509	19	80	147	-	
South Carolina*	10	76	-	-	-	-	-	460	2,951	3,173	8	37	43	3	
Georgia	21	104	-	-	-	-	1	707	6,409	6,696	18	192	188	27	
Florida*	39	190	-	-	5	-	-	1,257	9,034	8,282	55	312	377	6	
EAST SOUTH CENTRAL	86	409	2	-	1	-	1	1,534	11,978	11,969	27	132	115	9	
Kentucky	18	69	-	-	1	-	-	176	1,358	1,640	1	14	13	7	
Tennessee	26	121	2	-	-	-	1	624	4,146	4,969	9	45	34	1	
Alabama	16	102	-	-	-	-	-	403	3,716	3,217	2	18	19	1	
Mississippi	26	117	-	-	-	-	-	331	2,758	2,143	15	55	49	-	
WEST SOUTH CENTRAL	52	400	2	-	1	-	-	2,020	19,835	19,574	92	497	472	86	
Arkansas	3	39	2	-	-	-	-	306	1,310	1,511	14	37	11	13	
Louisiana*	11	97	-	-	-	-	-	455	3,133	2,649	34	101	100	2	
Oklahoma	7	50	-	-	-	-	-	231	1,785	1,584	1	18	12	28	
Texas	31	214	-	-	1	-	-	1,028	13,607	13,830	43	341	349	43	
MOUNTAIN	14	108	-	-	-	-	-	528	4,962	5,540	15	74	62	2	
Montana	-	13	-	-	-	-	-	31	351	321	4	4	-	-	
Idaho	-	1	-	-	-	-	-	17	166	290	-	-	2	-	
Wyoming	1	2	-	-	-	-	-	5	92	173	-	3	2	-	
Colorado	-	-	-	-	-	-	-	150	1,402	1,457	3	23	24	-	
New Mexico	9	22	-	-	-	-	-	55	687	754	3	17	14	1	
Arizona	4	54	-	-	-	-	-	144	1,191	1,533	5	18	17	1	
Utah	-	6	-	-	-	-	-	45	305	320	-	2	2	-	
Nevada	-	10	-	-	-	-	-	81	768	692	-	7	1	-	
PACIFIC	58	540	1	7	20	-	1	2,518	22,150	23,869	92	641	754	57	
Washington	NA	-	-	-	1	-	-	208	1,580	1,812	NA	11	21	-	
Oregon	7	21	-	-	1	-	-	179	1,661	1,584	4	17	29	-	
California*	44	413	1	7	18	-	1	1,975	17,768	19,241	86	603	692	56	
Alaska	-	9	-	-	-	-	-	108	707	743	2	3	4	1	
Hawaii	7	97	-	-	-	-	-	48	434	489	-	7	8	-	
Guam*	NA	-	-	NA	-	-	-	NA	3	58	NA	-	1	-	
Puerto Rico	11	65	-	-	-	-	-	51	401	460	10	63	93	2	
Virgin Islands*	-	-	-	-	-	-	-	3	35	23	-	3	-	-	

NA: Not available

†Delayed reports received for 1977 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 issue: TB: Pa. +22, Md. -1, S.C. -1, Fla. -1, Calif. +56, Guam +6; Typhoid fever: Fla. -1, Calif. +1; GC: S. Dak. +3 civ., La. -6 civ., Calif. +1933 civ., +28 mil., Guam +10, V.I. +8; Syphilis: Calif. +63; An rabies: Calif. +1.

Table IV
Deaths in 121 United States Cities*
Week Ending February 25, 1978 — 8th Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES	REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year			ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	
NEW ENGLAND	756	493	200	25	20	57	SOUTH ATLANTIC	1,560	931	405	106	67	95
Boston, Mass.	213	121	71	8	9	12	Atlanta, Ga.	148	69	44	17	9	6
Bridgeport, Conn.	41	26	12	1	1	2	Baltimore, Md.	302	176	88	8	18	6
Cambridge, Mass.	35	23	11	1	—	2	Charlotte, N. C.	74	47	16	5	4	7
Fall River, Mass.	35	28	6	1	—	2	Jacksonville, Fla.	96	63	20	10	2	8
Hartford, Conn.	71	39	20	4	4	2	Miami, Fla.	124	77	30	8	7	9
Lowell, Mass.	33	22	9	1	—	2	Norfolk, Va.	61	38	14	5	4	5
Lynn, Mass.	23	17	4	—	1	3	Richmond, Va.	79	43	21	9	3	9
New Bedford, Mass.	30	21	7	—	—	1	Savannah, Ga.	42	27	10	3	—	5
New Haven, Conn.	50	33	15	1	1	1	St. Petersburg, Fla.	121	97	15	4	3	7
Providence, R.I.	70	49	13	3	2	13	Tampa, Fla.	83	53	22	4	2	13
Somerville, Mass.	11	7	4	—	—	2	Washington, D. C.	350	189	106	28	14	20
Springfield, Mass.	49	33	13	1	1	3	Wilmington, Del.	80	52	19	5	1	—
Waterbury, Conn.	39	28	8	2	—	6	EAST SOUTH CENTRAL	718	456	183	29	22	50
Worcester, Mass.	56	46	7	2	1	6	Birmingham, Ala.	117	68	32	8	6	4
MIDDLE ATLANTIC	3,130	1,960	809	196	99	164	Chattanooga, Tenn.	85	63	11	3	3	3
Albany, N. Y.	51	35	7	6	3	1	Knoxville, Tenn.	58	34	19	2	2	1
Allentown, Pa.	16	11	5	—	—	—	Louisville, Ky.	141	94	33	3	4	21
Buffalo, N. Y.	100	66	25	3	9	9	Memphis, Tenn.	129	77	37	8	3	8
Camden, N. J.	44	28	12	2	1	4	Mobile, Ala.	52	29	17	3	—	—
Elizabeth, N. J.	33	25	7	1	—	1	Montgomery, Ala.	56	46	7	1	—	6
Erie, Pa.	42	32	6	3	1	6	Nashville, Tenn.	80	45	27	1	4	7
Jersey City, N. J.	58	29	23	3	3	—	WEST SOUTH CENTRAL	1,389	842	336	92	49	77
Newark, N. J.	63	28	20	9	6	2	Austin, Tex.	34	20	8	4	1	4
New York City, N. Y.	1,488	947	378	102	32	64	Baton Rouge, La.	58	37	10	4	4	10
Paterson, N. J.	24	12	8	2	2	1	Corpus Christi, Tex.	46	31	9	3	2	3
Philadelphia, Pa.	519	312	138	35	20	36	Dallas, Tex.	232	142	53	13	8	8
Pittsburgh, Pa.	254	131	76	17	15	13	El Paso, Tex.	50	31	17	2	—	3
Reading, Pa.	42	30	11	1	—	3	Fort Worth, Tex.	85	51	23	6	3	3
Rochester, N. Y.	116	80	27	3	5	8	Houston, Tex.	357	204	92	27	11	12
Schenectady, N. Y.	23	17	5	—	—	2	Little Rock, Ark.	63	40	14	3	3	9
Scranton, Pa.	53	38	8	5	2	1	New Orleans, La.	161	98	36	12	10	5
Syracuse, N. Y.	99	63	26	4	5	5	San Antonio, Tex.	149	87	40	8	4	5
Trenton, N. J.	43	27	15	—	1	3	Shreveport, La.	63	43	12	3	2	3
Utica, N. Y.	26	21	5	—	—	2	Tulsa, Okla.	91	58	22	7	1	12
Yonkers, N. Y.	36	28	7	—	—	3	MOUNTAIN	574	324	148	43	31	22
EAST NORTH CENTRAL	2,251	1,426	562	137	66	106	Albuquerque, N. Mex.	43	26	10	5	1	5
Akron, Ohio	72	55	9	4	3	—	Colorado Springs, Colo.	25	12	7	1	1	2
Canton, Ohio	61	45	14	2	—	3	Denver, Colo.	121	67	33	6	9	7
Chicago, Ill.	545	316	150	44	16	16	Las Vegas, Nev.	42	23	10	6	1	2
Cincinnati, Ohio	160	100	38	13	5	7	Ogden, Utah	25	14	5	3	3	—
Cleveland, Ohio	186	117	53	11	3	5	Phoenix, Ariz.	150	90	36	11	8	2
Columbus, Ohio	90	56	28	2	3	30	Pueblo, Colo.	29	23	6	—	—	3
Dayton, Ohio	82	60	13	5	3	1	Salt Lake City, Utah	54	28	13	4	4	1
Detroit, Mich.	275	157	73	22	11	5	Tucson, Ariz.	85	41	28	7	4	—
Evansville, Ind.	40	32	5	2	—	5	PACIFIC	1,669	1,081	370	96	63	62
Fort Wayne, Ind.	57	39	10	3	1	5	Berkeley, Calif.	15	10	4	1	—	—
Gary, Ind.	18	6	9	1	1	1	Fresno, Calif.	70	45	11	8	4	1
Grand Rapids, Mich.	52	33	11	1	4	7	Glendale, Calif.	27	24	1	—	—	2
Indianapolis, Ind.	152	90	44	14	4	7	Honolulu, Hawaii	71	41	19	4	5	1
Madison, Wis.	40	29	9	2	—	5	Long Beach, Calif.	89	58	23	6	2	4
Milwaukee, Wis.	125	92	26	3	1	2	Los Angeles, Calif.	496	319	108	29	25	23
Peoria, Ill.	53	36	12	—	3	1	Oakland, Calif.	93	59	21	8	—	6
Rockford, Ill.	30	17	8	3	1	1	Pasadena, Calif.	39	26	9	2	1	—
South Bend, Ind.	51	43	6	1	—	4	Portland, Oreg.	114	77	26	3	7	1
Toledo, Ohio	106	65	30	1	6	1	Sacramento, Calif.	75	47	19	2	3	1
Youngstown, Ohio	56	38	14	3	1	—	San Diego, Calif.	135	84	33	10	2	1
WEST NORTH CENTRAL	801	527	168	52	35	43	San Francisco, Calif.	151	98	35	8	5	—
Des Moines, Iowa	72	53	10	6	3	5	San Jose, Calif.	56	37	11	3	2	2
Duluth, Minn.	30	15	8	4	3	2	Seattle, Wash.	146	97	29	9	6	9
Kansas City, Kans.	53	33	15	1	2	—	Spokane, Wash.	50	35	12	1	—	10
Kansas City, Mo.	136	100	21	7	5	3	Tacoma, Wash.	42	24	9	2	1	1
Lincoln, Nebr.	44	33	10	—	—	5	TOTAL	12,848	8,040	3,181	776	452	676
Minneapolis, Minn.	81	57	13	5	5	4	Expected Number	12,336	7,602	3,159	727	430	532
Omaha, Nebr.	93	54	23	6	6	3							
St. Louis, Mo.	181	107	46	17	7	8							
St. Paul, Minn.	67	46	16	1	1	3							
Wichita, Kans.	44	29	6	5	3	10							

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

The Morbidity and Mortality Weekly Report, circulation 70,000, 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.

Lead Poisoning — continued

of hazards reduced per children identified with undue lead absorption. In fiscal year 1976, 51 hazards were reduced

per 100 confirmed positive children; in fiscal year 1977, this ratio increased to 60 per 100.

Reported by the Environmental Health Services Div, Bur of State Services, CDC.

TABLE 1. Results of screening in childhood lead poisoning control projects — United States, fourth quarter of fiscal year 1977 (July 1, 1977 — September 30, 1977)

Projects	NUMBER OF CHILDREN						NUMBER OF DWELLINGS		
	Screened	With Confirmed Undue Lead Absorption ¹				Inspected	Found with Lead	Reduced	
		Requiring Pediatric Management		Receiving Pediatric Management					
		TOTAL	Class II	Classes III & IV	TOTAL				Chelation Therapy
Augusta, Me.	75	15	12	3	62	2	15	12	41
Boston, Mass.	7,755	698	543	155	1,152	59	225	218	208
Fall River, Mass.	423	63	49	14	189	3	42	27	25
Lawrence, Mass.	743	73	45	28	154	8	47	42	38
Lynn, Mass.	619	46	36	10	188	14	46	42	59
Rhode Island State	1,086	166	120	46	133	41	51	51	5
Waterbury, Conn.	888	74	57	17	247	0	188	136	83
Worcester, Mass.	1,369	87	55	32	258	41	84	83	75
REGION I TOTAL	12,954	1,222	917	305	2,393	168	698	611	534
CUMULATIVE FY 77	51,872	3,545	2,570	975	12,567	477	3,574	2,839	2,913
Camden, N.J.	373	65	42	23	206	4	40	30	25
Erle Co. N.Y.	802	111	96	15	217	14	41	32	25
Hoboken, N.J.	92	13	9	4	24	1	19	1	1
Jersey City, N.J.	90	26	12	14	34	3	35	18	13
Monroe Co. N.Y.	1,322	326	251	85	242	7	58	58	46
Newark, N.J.	449	127	78	49	468	63	90	56	56
New York City	17,280*	1,184*	875	309	1,911*	36	289	184	102
Onondaga Co. N.Y.	1,096	55	35	20	215	21	46	40	74
Paterson, N.J.	521	142	88	54	495	17	46	23	63
Plainfield, N.J.	305	44	34	10	149	1	38	24	19
Rensselaer, N.Y.	251	23	13	10	97	1	25	17	12
Westchester, N.Y.	662	51	37	14	259	4	36	17	11
REGION II TOTAL	23,243	2,167	1,560	607	4,317	172	764	500	456
CUMULATIVE FY 77	91,008	7,061	5,017	2,044	14,834	586	3,145	1,965	1,630
Baltimore, Md.	3,575	174	99	75	506	39	133	109	76
Chester, Pa.	738	60	43	17	481	2	40	34	12
Delaware State	891	69	41	28	122	1	54	37	5
Norfolk, Va.	1,243	75	40	35	433	12	42	31	27
Philadelphia, Pa.	2,636	510	321	189	698	58	569	422	486
Richmond, Va.	1,990	57	42	15	665	20	100	70	74
Washington, D.C.	2,958	154	118	36	411	8	275	107	52
Wilkes-Barre, Pa.	466	36	31	5	133	2	34	29	32
REGION III TOTAL	14,097	1,135	735	400	3,449	142	1,243	838	734
CUMULATIVE FY 77	55,812	3,575	2,569	1,406	13,911	480	5,873	3,300	2,847
Augusta, Ga.	666	27	23	4	227	1	36	16	6
Louisville, Ky.	1,220	73	52	21	575	21	129	112	90
Memphis, Tenn.	1,248	73	51	21	196	1	85	76	31
Mobile, Ala.	521	38	19	19	303	1	47	31	15
South Carolina State	950	69	57	12	519	9	109	107	12
Wilmington, N.C.	93	5	4	1	53	4	12	9	9
REGION IV TOTAL	4,698	285	206	78	1,873	41	418	351	201
CUMULATIVE FY 77	16,760	976	678	297	7,915	142	1,897	1,600	1,057
Akron, Ohio	255	49	46	3	70	0	37	37	28
Chicago, Ill.	13,545	1,088	557	531	3,214	331	22,859	3,764	1,392
Cincinnati, Ohio	1,449	141	105	36	949	8	116	95	107
Cleveland, Ohio	4,123	195	132	63	695	3	44	36	36
Columbus, Ohio	1,708	71	58	13	204	21	111	28	44
Detroit, Mich.	3,956	474	283	191	666	19	371	363	83
Kenosha, Wisc.	132	2	2	0	7	0	2	2	0
Milwaukee, Wisc.	483	144	89	55	515	27	142	100	114
Peoria, Ill.	277	11	2	2	15	4	29	20	15
Racine, Wisc.	138	10	7	3	69	0	10	1	1
Rockford, Ill.	1,171	173	119	54	592	25	53	49	28
St. Paul, Minn.	86	2	1	1	NR	NR	0	0	2
Toledo, Ohio	212	21	11	10	37	37	NR	NR	NR
Wayne Co. Mich.	212	53	20	33	115	28	36	26	26
REGION V TOTAL	27,747	2,434	1,452	982	7,148	478	23,846	4,539	1,876
CUMULATIVE FY 77	102,933	6,667	4,366	2,301	22,671	1,128	66,980	15,106	6,513
Arkansas State	871	47	21	26	189	0	23	20	11
Houston, Texas	2,657	186	127	59	117	3	37	20	20
New Orleans, La.	4,042	334	205	129	334	41	34	33	31
REGION VI TOTAL	7,570	567	353	214	639	44	204	85	62
CUMULATIVE FY 77	26,995	1,559	1,010	549	2,872	114	928	349	197
Davenport-Scott Co. Iowa	971	75	48	27	111	14	46	41	12
Kansas City-Wyandotte Co. Kansas	1,045	33	23	10	110	3	39	13	6
Kansas City, Mo.	985	27	18	9	78	2	13	12	5
Omaha, Neb.	988	49	27	22	87	2	33	30	12
Springfield, Mo.	444	2	2	0	16	0	21	8	3
St. Louis, Mo.	4,891	1,238	764	474	2,927	107	847	494	393
REGION VII TOTAL	5,324	1,424	882	542	3,331	128	999	598	431
CUMULATIVE FY 77	28,455	4,075	2,518	1,557	12,034	386	3,220	2,373	1,474
Alameda Co. Calif.	399	25	14	11	50	2	15	12	4
Contra Costa Calif.	260	2	0	2	14	0	2	2	2
Los Angeles, Calif.	1,356	27	10	17	81	3	58	31	21
REGION IX TOTAL	2,015	54	24	30	145	5	75	58	27
CUMULATIVE FY 77	6,661	356	206	150	738	20	366	187	129
U.S. TOTALS CUMULATIVE FY 77	101,648	9,287	6,139	3,158	23,295	1,178	28,247	7,568	4,321
	380,496	28,213	18,934	9,279	87,542	3,333	85,983	27,719	16,810

¹ Class II and Classes III & IV defined in CDC Statement, Increased Lead Absorption and Lead Poisoning in Young Children, March 1975.
 NR—Not reported
 * —Estimated

Epidemiologic Notes and Reports

Follow-up on Abortion-related Complications — Texas

After the initial report of 5 women who were admitted to a South Texas hospital in a 2-month period with complications following illegally induced abortion (1), a surveillance system was initiated to monitor prospectively further abortion-related morbidity in the region. During the 4-month period October 15, 1977 — February 14, 1978, 2 additional

women were identified with febrile complications after abortion. This figure is consistent with the incidence of febrile complications which occurred before the initial report. One of the 2 women had obtained her abortion in Mexico; both were U.S. citizens of Hispanic descent. Both had uneventful recoveries after antibiotic treatment and

Abortion — continued

uterine curettage to remove retained products of conception.

Further investigation was undertaken of the woman who died on October 3, 1977, from septic complications of abortion. Medical records revealed that she had had at least 2 prior pregnancies terminated by legally induced abortion in the United States. The first abortion was in 1975, the second in 1977. Both abortions were financed by Medicaid funds. She became pregnant again in September 1977. Interviews with the patient's family and a close friend revealed that she subsequently went to Mexico at least once to have an abortion induced by intramuscular injections of unknown agent(s). According to an interview with another close

friend, when this method was unsuccessful in terminating the pregnancy, she contacted a lay midwife in the United States to induce the abortion. One day later she had symptoms of fever and lower abdominal pain. She was hospitalized for *Clostridium perfringens* sepsis on September 26, 1977, and died 8 days later from renal and cardiac failure.

Reported by E Frankfort; D Chester, MD, McAllen, Texas; CR Webb, Jr, MD, State Epidemiologist, Texas Dept of Human Resources; Abortion Surveillance Br, Family Planning Evaluation Div, Field Services Div, Bur of Epidemiology, CDC.

Reference

1. MMWR 26:361, 1977

Influenza — United States

Since last week's report (1), influenza isolates resembling A/USSR/90/77 (H1N1) have been made in 6 additional areas: Connecticut, Vermont, New York City, Virginia, Georgia, and Arizona. This figure brings the total number of areas reporting isolates through February 28, 1978, to 25 (Figure 2).

Nationwide, pneumonia and influenza deaths, as reported from 121 U.S. cities, have declined. However, these deaths remain elevated above the epidemic threshold in the South

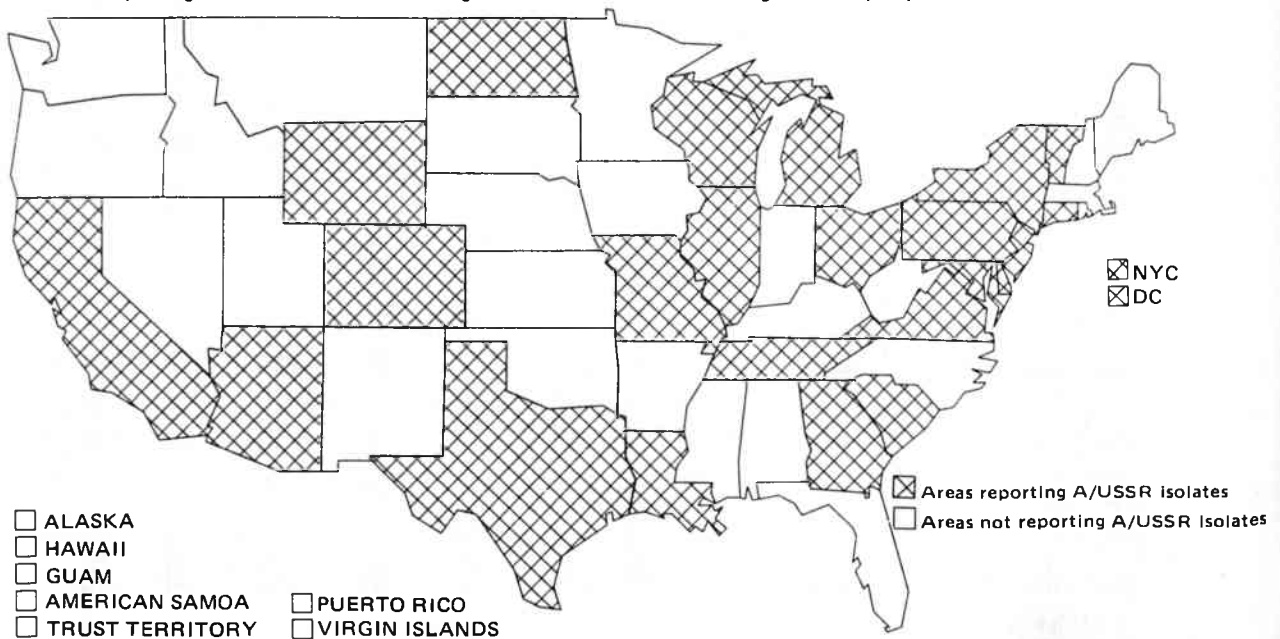
Atlantic region, where widespread and regional influenza activity persists.

Reported by the WHO Collaborating Center for Influenza, Respiratory Virology Br, Virology Div, Bur of Laboratories, Surveillance and Assessment Br, Immunization Div, Bur of State Services, National Morbidity and Mortality Surveillance Activity, Bur of Epidemiology, CDC.

Reference

1. MMWR 27:64, 1978

FIGURE 2. Areas reporting influenza isolates resembling A/USSR/90/77 (H1N1) through February 28, 1978

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