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In-Transit Chemical Spill — West Virginia

On October 14, 1985, a truck was transporting a 1-ton cylinder containing 2,000 pounds of antimony pentachloride from a production plant in Kentucky to a disposal site in New Jersey. At approximately 9 p.m., while the truck was parked at a company truck terminal in Wood County, West Virginia, a member of the county rescue squad noticed a liquid chemical leaking from the front of the trailer. The spill consisted of approximately 1,000 pounds of antimony pentachloride, which came from the tank's defective relief valve and valve seat. Antimony pentachloride reacts with atmospheric moisture to form hydrochloric acid.

Emergency-response efforts included simultaneous containment and evacuation. Soda ash, bicarbonate of soda, sand, and a trench were used to limit the ground spread of the liquid spill. Access to the leaking tank was obtained by using a backhoe to tear one side out of the trailer. The leak was plugged at 2:16 a.m., October 15, when a piece of wood dowel was put in the 1/8-inch-diameter hole. Police used public-address systems to notify the residents and roadblocks to control traffic. Approximately 500-600 residents were evacuated from their homes.

Area hospitals reported 12 people in the area were treated for a variety of ailments, including one chemical burn, dizziness, throat and stomach pains, and burning sensations. The chemical-burn victim was a member of the emergency-response team. None of the cases were reported to be serious.

This event provided an opportunity to identify communication weaknesses in the Wood County Emergency Plan. Because of the diversity of organized involvement in the community and the newness of the system, many officials were never contacted. The Mid-Ohio Valley Health Department (MOVHD) is assisting in strengthening these organizational links. MOVHD is currently gathering and summarizing all available data relating to this event. This information will help MOVHD assist in establishing criteria for an effective emergency plan for the six counties it serves.

Reported by L Burtis, Mid-Ohio Valley Health Dept, LE Haddy, MS, State Epidemiologist, West Virginia State Dept of Health; Office of Health Assessment, Agency for Toxic Substances and Disease Registry, U.S. Public Health Service; Div of Environmental Hazards and Health Effects, Center for Environmental Health, CDC.

Chemical Spill — Continued

Editorial Note: Unintentional releases of hazardous materials occur throughout the United States and have potentially serious public health impacts. Approximately 25% of all releases occur when materials are being transported; 75% occur during their production, storage, or usage within plants (*1*). From 1971 to 1981, over 108,000 hazardous-material events occurred on public roads in the United States (*2*). Of these, 860 (0.8%) occurred in West Virginia. In-transit releases of hazardous materials occurred most frequently in Pennsylvania (11,961), Ohio (8,198), and Illinois (5,318).

The public health effects can be minimized with efficient emergency preparation and response. Hazardous-material events demonstrate the importance of ensuring that contingency plans are in place and the component activities are coordinated throughout the response. The U.S. Environmental Protection Agency (EPA), the U.S. Coast Guard (USCG), and the Federal Emergency Management Agency (FEMA) are responsible for providing consultation on the development and implementation of contingency plans and for providing, as needed, on-scene coordination in emergency situations. The Agency for Toxic Substances and Disease Registry (ATSDR) or CDC can assist in the development of the health components of these plans. EPA and USCG, as well as designated state and local emergency-response officials, depend on the emergency-response capabilities of ATSDR or CDC to help assess the potential health risks resulting from emergency events. The Emergency Response Coordinators of ATSDR are available to provide immediate health consultation 24 hours a day; telephone: FTS 236-4100 or commercial (404) 452-4100 (days), and FTS 236-2888 or commercial (404) 329-2888 (nights and weekends).

References

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International Notes

Update: Poliomyelitis Outbreak — Finland, 1984-1985

From August 1984 through January 1985, nine cases of paralytic disease and one case of aseptic meningitis due to wild poliovirus type 3 were reported in Finland. The diagnoses were confirmed by either viral isolation or serology. The poliomyelitis outbreak was recognized in late October 1984, when a 6-year-old child from Vantaa, a neighboring town to Helsinki, developed aseptic meningitis; poliovirus type 3, subsequently characterized as "wild-like," was isolated from the child's stool. Further investigation of healthy family members and other close contacts revealed that 39 (45%) of 86 were shedding poliovirus type 3 in their stools and/or throats. During late 1984 and early 1985, wild-like poliovirus 3 was isolated from sewage samples from 10 locations in the Helsinki district and from 13 of 21 other cities or towns sampled in the country.

Concurrent with the recognition of widespread poliovirus circulation in the country, a case of paralytic poliomyelitis was recognized in a 17-year-old patient with flaccid paralysis who

Poliomyelitis — Continued

had been diagnosed in late October 1984 as having Guillain-Barré syndrome. The diagnosis was confirmed following the isolation of wild-like poliovirus type 3 in mid-November. Surveillance was intensified, and six more cases of paralytic poliomyelitis were diagnosed in various regions of Finland over the next 3-month period—one with onset in late October, three in November, one in December, and the last in January 1985.

A retrospective review was conducted of all patients in Finland with paralysis seen by a neurologist and/or an infectious-disease consultant since summer 1983. Two additional clinically compatible cases of paralytic poliomyelitis (i.e., acute onset of asymmetric flaccid paralysis without sensory involvement) were identified. Diagnoses of poliomyelitis were confirmed serologically. One patient had onset of illness in August 1984; the other, in September 1984 (Table 1).

Routine immunization with inactivated polio vaccine (IPV) was initiated in Finland in 1957. The recommended schedule for primary immunization consists of three doses of IPV given at 5 months, 6 months, and 2 years of age and booster doses at the ages of 6-7 years, 11-12 years, and 16-17 years. Additionally, conscripts in the army are vaccinated at about 20 years of age. Further booster doses are recommended at 5-year intervals, especially for those traveling abroad (*1*).

Before this outbreak, the last reported case of paralytic poliomyelitis occurred in Finland in 1964 in an unvaccinated 1-year-old girl from whom poliovirus type 3 was isolated. Surveillance for polioviruses by survey screening of stools from preschool-aged children, sewage testing, and isolation of viruses from individuals with aseptic meningitis was carried out routinely from 1964 through 1982, with consistently negative results (*1,2*). Sewage testing and survey screening of stools were not done between 1982 and 1984, but stool specimens from approximately 1,000 patients with aseptic meningitis and other neurologic diseases suspected to be of viral origin were tested annually. No additional wild-like polioviruses were found.

As soon as widespread circulation of poliovirus type 3 was recognized, the health authorities recommended an extra dose of the IPV used in Finland for all children under 18 years of age. Approximately 1.5 million doses were administered during the 4-month period November 1984-February 1985. From mid-February to mid-March 1985, a mass campaign with trivalent oral polio vaccine (OPV) was conducted. A single dose of OPV was offered to every

TABLE 1. Clinical and epidemiologic data on poliomyelitis cases — Finland, August 1984-January 1985

Case no.	Age (yrs.)	Sex	Immunization history	Onset date	Clinical illness	Outcome follow-up	Poliovirus isolate
1	48	M	None	8/84	Paralysis	Residual*	None
2	28	F	5 IPV	9/84	Paralysis	Residual*	None
3	6	M	3 IPV	10/84	Aseptic meningitis	Healthy	P3
4	17	M	5 IPV	10/84	Quadriplegia	Died	P3
5	14	M	3 IPV	10/84	Paralysis	Weakness†	P3
6	31	F	None	11/84	Paralysis	Residual*	P3
7	12	M	5 IPV	11/84	Paralysis	Residual*	P3
8	26	M	5 IPV	11/84	Paralysis	Weakness†	P3
9	33	M	1 IPV	12/84	Paralysis	Residual*	P3
10	28	F	5 IPV	1/85	Paralysis	Residual*	None

*Residual refers to persistent residual paralysis 60 days after onset.

†Patients had only weakness of the affected limbs 60 days after onset.

Poliomyelitis — Continued

person in the country, except infants under 6 months of age. Immune-deficient individuals and their household contacts also were excluded from the OPV campaign and were offered a more potent IPV that is more immunogenic than the usually available IPV. Overall, an estimated 94% of the target population of 4.8 million received a dose of OPV. Following the OPV campaign, routine childhood immunization was continued with the standard IPV. The more immunogenic IPV is expected to be in use in all areas of Finland by early 1986.

Regular screening for polioviruses in sewage and active surveillance for aseptic meningitis and other neurologic illnesses was reinstituted. No wild- or vaccine-like polioviruses have been isolated from the sewage specimens from various cities since May 1985. No cases of poliomyelitis were reported from neighboring countries, some of which use IPV exclusively.

All poliovirus type 3 isolates from the outbreak in Finland that were analyzed by oligonucleotide fingerprinting (*3*) were shown to be closely related wild strains. Sera from U.S. children in three age groups who had received at least three doses of OPV were tested for the presence of neutralizing antibodies to the Finland isolate (P3/Fin/84/23127) and three other genetically distinct poliovirus type 3 strains (Sabin 3, Saukett, and P3/USA/80/1565) (Table 2). Neutralizing antibodies to all four strains were detected in 97% of the sera from children aged 16-25 months and in 96% of the sera from children aged 5-7 years. A greater proportion of children in the 10- to 12-year age group had neutralizing antibodies to Sabin 3 (92%) and P3/USA/80/1565 (96%) than to Saukett (79%) or P3/Finland/84/23127 (75%).

Reported by National Public Health Institute and National Board of Health, Helsinki, Finland; Div of Viral Diseases, Center for Infectious Diseases, Surveillance, Investigations, and Research Br, Div of Immunization, Center for Prevention Svcs, CDC.

Editorial Note: The occurrence of poliomyelitis and the isolation of wild poliovirus type 3 in October 1984 were the first proof of indigenous wild poliovirus circulation in Finland during the last 20 years.

The IPV preparation used in Finland for the past 20 years induces low levels of antibodies to poliovirus type 3 but relatively higher levels to poliovirus types 1 and 2 (*1*). A seroprevalence survey in 1982 among 3-year-old children in Finland who had received full primary

TABLE 2. Prevalence of neutralizing antibodies to different poliovirus type 3 strains in sera of children immunized in the United States with three doses of OPV — Philadelphia, Pennsylvania, 1982-1984, and Massachusetts, 1982-1983

Age group	No. tested	Percent seropositive at 1:4 dilution			
		Sabin 3*	Saukett†	P3/USA/80 1565§	P3/Fin/84 23127¶
16-25 mos.	71**	99††	97††	97††	99††
5-7 yrs.	24§§	100	100	100	96
10-12 yrs.	24§§	92	79	96	75

*Immunizing strain in the United States.

†Wild strain used to make type 3 component of IPV.

§Wild virus isolate from a U.S. patient who contracted poliomyelitis in 1980 shortly after return from Mexico (*9*).

¶Wild poliovirus type 3 from Finland, isolated from healthy family contact of patient no. 3 (Table 1).

**Arbitrary subsample of well Philadelphia children participating in a study of simultaneous administration of multiple antigens in 1982-1984.

††Sera from two children were not available in sufficient amounts for testing at dilutions lower than 1:10. For these sera, titers < 1:10 were assumed to be negative at a 1:4 dilution.

§§Arbitrary subsample of well Massachusetts students participating in a cluster-sample serosurvey in 1982 and 1983.

Poliomyelitis — Continued

series of IPV showed that only 30% had neutralizing antibodies to type 3 poliovirus at a dilution of 1:4 (*1*). In some children, a secondary seroresponse followed revaccination, implying that they may have been immune before revaccination (*1*). As a consequence of this and other serosurveys, the health authorities in Finland decided to use a more immunogenic IPV beginning in 1986.

There also may have been a gradual decline in vaccination coverage in recent years in Finland. Coverage assessments for two doses of IPV in the early 1970s showed approximately 99% coverage. Coverage assessments for complete three-dose primary vaccination became available beginning in the late 1970s and suggested a decline among 3-year-old children, reaching a low of 78% in 1983. Vaccination coverage is much higher among school-aged children, since additional vaccination is given through the schools.

Among the younger age groups of U.S. children tested, significant differences were not demonstrated in the percent seropositive to the Finland isolate and to Sabin type 3 strain. The finding of slightly lower seropositivity rates against Saukett and P3/Fin/23127/84 isolates in the oldest group of U.S. children than against the Sabin 3 vaccine strain is consistent with well-documented antigenic differences among poliovirus strains within a serotype (*5,6*) and declines in neutralizing antibody titers with time since immunization. Lower neutralization titers have been found in serosurveys that use a heterologous strain of the immunizing vaccine virus as the test antigen than in those that used a homologous antigen, i.e., the actual vaccine strain (*7,8*). When neutralization titers to the immunizing strains are low ($\leq$ 1:8), neutralizing antibodies to heterologous strains may be present but not detected at dilutions of 1:4, the lowest practical dilution in a standard neutralization test. When tested for neutralizing antibody to Sabin 3 virus, all three age groups showed 90% or higher seroprevalence, indicating that the U.S. population of children immunized with OPV would be protected if exposed to the Finland isolate.

The conditions responsible for the poliomyelitis outbreak and for wide dissemination of the wild poliovirus type 3 in Finland are not known definitively, but may have involved a combination of factors, including: (1) the immunogenicity of the type 3 component of the IPV used in Finland during the past 20 years was relatively low; (2) vaccine coverage may have declined in recent years; and (3) the antigenic differences between the Finland strain and the type 3 component of the Finland IPV may have allowed substantial replication and transmission of the outbreak virus among people with very low titers of neutralizing antibodies to type 3 polioviruses.

Since Finland is no longer endemic or epidemic for polio disease, CDC Advisory Memorandum No. 76 (issued January 2, 1985), which recommended that travelers to Finland be immune to poliomyelitis, was withdrawn on August 21, 1985 (see CDC Advisory Memorandum No. 82).

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Poliomyelitis — Continued

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TABLE I. Summary—cases specified notifiable diseases, United States

Disease	6th Week Ending			Cumulative, 6th Week Ending		
	Feb. 8, 1986	Feb. 9, 1985	Median 1981-1985	Feb. 8, 1986	Feb. 9, 1985	Median 1981-1985
Acquired Immunodeficiency Syndrome (AIDS)	342	95	N	1,409	608	N
Aseptic meningitis	94	76	77	459	408	510
Encephalitis: Primary (arthropod-borne & unspec.)	15	17	17	88	84	97
Post-infectious	-	3	2	6	13	8
Gonorrhea: Civilian	12,906	14,614	16,510	89,232	89,482	108,823
Military	228	194	541	1,503	1,688	3,053
Hepatitis: Type A	490	448	427	2,513	2,236	2,316
Type B	429	518	448	2,403	2,535	2,488
Non A, Non B	53	73	N	278	412	N
Unspecified	98	96	101	557	464	766
Legionellosis	10	12	N	62	82	N
Leprosy	6	-	5	32	15	26
Malaria	17	7	16	69	60	73
Measles: Total*	19	18	18	97	67	67
Indigenous	18	15	N	91	36	N
Imported	1	3	N	6	31	N
Meningococcal infections: Total	61	60	71	341	299	353
Civilian	61	60	71	340	299	349
Military	-	-	-	1	-	1
Mumps	57	61	84	233	294	463
Pertussis	62	19	19	188	127	118
Rubella (German measles)	10	4	11	31	23	85
Syphilis (Primary & Secondary): Civilian	403	550	568	2,472	2,800	3,394
Military	6	5	7	21	20	45
Toxic Shock syndrome	8	8	N	30	40	N
Tuberculosis	298	373	453	1,693	1,732	2,173
Tularemia	2	-	1	9	15	11
Typhoid fever	3	7	6	23	20	36
Typhus fever, tick-borne (RMSF)	1	2	1	6	3	7
Rabies, animal	50	108	91	428	416	473

TABLE II. Notifiable diseases of low frequency, United States

	Cum 1986		Cum 1986
Anthrax	-	Leptospirosis	6
Botulism: Foodborne	-	Plague	-
Infant	6	Poliomyelitis, Paralytic	-
Other	-	Psittacosis	2
Brucellosis	5	Rabies, human	-
Cholera	-	Tetanus (III. 1, S.C. 1)	4
Congenital rubella syndrome	1	Trichinosis	7
Congenital syphilis, ages < 1 year	-	Typhus fever, flea-borne (endemic, murine)	-
Diphtheria	-		

*One of the 19 reported cases for this week was imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending February 8, 1986 and February 9, 1985 (6th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1986	1986	Cum. 1986	Cum. 1986	Cum. 1986	Cum. 1985	1986	1986	1986	1986	1986	Cum. 1986
UNITED STATES	1,409	94	88	6	89,232	89,482	490	429	53	98	10	32
NEW ENGLAND	91	4	4	-	2,049	2,810	7	16	3	6	4	1
Maine	2	-	-	-	102	141	-	-	-	-	-	-
N H	3	-	1	-	55	61	-	-	-	-	2	-
Vt	1	-	-	-	37	29	-	-	-	-	-	-
Mass	60	3	2	-	896	988	4	13	3	6	1	1
R I	7	-	-	-	186	228	1	1	-	-	1	-
Conn	18	1	1	-	773	1,363	2	2	-	-	-	-
MID ATLANTIC	500	24	17	-	15,936	13,017	9	22	1	19	-	4
Upstate N Y	45	9	6	-	1,743	1,431	8	18	1	1	-	-
N Y City	316	1	6	-	9,843	6,128	1	1	-	18	-	4
N J	89	3	2	-	1,811	1,783	-	-	-	-	-	-
Pa	50	11	3	-	2,539	3,675	-	3	-	-	-	-
E N CENTRAL	70	14	15	1	12,297	12,773	19	38	3	2	3	1
Ohio	27	4	6	1	3,352	3,139	5	20	2	-	1	-
Ind	12	-	-	-	2,345	1,130	4	1	-	1	-	-
Ill	16	2	-	-	1,758	4,186	-	-	-	-	-	-
Mich	15	8	9	-	4,165	3,862	10	17	1	1	2	1
Wis	-	-	-	-	677	456	-	-	-	-	-	-
W N CENTRAL	34	2	-	1	4,624	4,979	14	22	2	-	-	3
Minn	15	-	-	-	684	774	1	3	1	-	-	3
Iowa	2	1	-	-	482	512	-	4	-	-	-	-
Mo	9	-	-	-	2,196	2,184	2	12	-	-	-	-
N Dak	3	-	-	-	47	26	-	-	-	-	-	-
S Dak	-	-	-	-	74	104	7	-	-	-	-	-
Nebr	3	1	-	-	278	500	1	1	-	-	-	-
Kans	2	-	-	1	863	879	3	2	1	-	-	-
S ATLANTIC	191	13	14	4	18,596	18,246	46	94	5	8	1	-
Del	5	-	2	-	394	412	2	-	-	-	-	-
Md	20	3	5	-	2,692	2,523	-	3	-	-	-	-
D C	20	-	-	-	1,956	1,487	-	4	-	-	-	-
Va	24	2	4	1	2,187	1,959	4	7	-	-	-	-
W Va	-	-	-	-	259	280	-	4	1	1	-	-
N C	14	1	2	-	3,336	3,620	1	8	-	4	-	-
S C	8	-	-	-	1,608	2,431	2	-	2	-	1	-
Ga	5	2	-	-	-	-	12	43	1	-	-	-
Fla	95	5	1	3	6,164	5,534	25	25	1	3	-	-
E S CENTRAL	21	3	10	-	7,767	7,936	5	20	2	2	-	-
Ky	5	2	5	-	918	781	1	9	1	1	-	-
Tenn	11	1	1	-	3,312	3,170	2	11	1	1	-	-
Ala	1	U	4	-	1,862	2,490	U	U	U	U	U	-
Miss	4	-	-	-	1,675	1,495	2	-	-	-	-	-
W S CENTRAL	125	10	3	-	11,572	13,493	55	25	1	17	-	-
Ark	5	-	-	-	1,124	1,312	2	-	-	1	-	-
La	25	-	-	-	2,060	3,024	2	2	-	-	-	-
Okla	2	2	-	-	1,396	1,411	3	1	1	2	-	-
Tex	93	8	3	-	6,992	7,746	48	22	-	14	-	-
MOUNTAIN	17	10	5	-	2,916	3,143	88	49	10	9	-	1
Mont	-	-	-	-	84	95	5	4	-	-	-	-
Idaho	1	1	-	-	74	115	-	2	-	-	-	-
Wyo	2	-	2	-	67	91	1	-	-	-	-	-
Colo	2	2	-	-	720	880	3	3	-	1	-	-
N Mex	4	1	-	-	350	377	12	6	-	-	-	-
Ariz	2	6	2	-	829	942	58	31	9	7	-	1
Utah	2	-	1	-	140	143	4	2	-	1	-	-
Nev	4	-	-	-	652	500	5	1	1	-	-	-
PACIFIC	360	14	20	-	13,475	13,085	247	143	26	35	2	22
Wash	19	2	1	-	917	987	18	22	1	-	-	1
Oreg	8	-	-	-	518	812	77	17	2	2	-	-
Calif	328	11	17	-	11,453	10,746	152	103	23	33	2	21
Alaska	1	-	2	-	449	326	-	-	-	-	-	-
Hawaii	4	1	-	-	138	214	-	1	-	-	-	-
Guam	-	U	-	-	-	14	U	U	U	U	U	-
P R	15	1	-	-	241	525	3	5	-	-	-	-
V I	-	-	-	-	22	47	-	-	-	-	-	-
Pac Trust Terr	-	U	-	-	-	72	U	U	U	U	U	-
Amer Samoa	-	U	-	-	-	-	U	U	U	U	U	-

N Not notifiable U Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February 8, 1986 and February 9, 1985 (6th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985
UNITED STATES	69	18	91	1	6	67	341	57	233	62	188	127	10	31	23
NEW ENGLAND	1	-	-	-	-	-	25	1	4	2	14	1	-	-	2
Maine	-	-	-	-	-	-	5	-	-	-	1	-	-	-	-
N.H.	-	-	-	-	-	-	-	-	1	-	5	-	-	-	1
Vt.	-	-	-	-	-	-	4	-	-	1	1	1	-	-	-
Mass.	1	-	-	-	-	-	5	-	-	-	4	-	-	-	1
R.I.	-	-	-	-	-	-	2	1	3	-	1	-	-	-	-
Conn.	-	-	-	-	-	-	9	-	-	1	2	-	-	-	-
MID ATLANTIC	10	-	11	-	2	1	52	3	16	1	29	21	3	9	5
Upstate N.Y.	-	-	-	-	2	1	13	1	6	1	20	8	-	6	1
N.Y. City	4	-	11	-	-	-	8	-	-	-	-	5	3	3	3
N.J.	2	-	-	-	-	-	6	2	5	-	-	-	-	-	1
Pa.	4	-	-	-	-	-	25	-	5	-	9	8	-	-	-
E.N. CENTRAL	2	1	1	-	-	18	38	17	93	25	42	34	-	1	3
Ohio	1	-	-	-	-	-	17	8	31	21	32	8	-	-	-
Ind.	-	-	-	-	-	-	6	1	2	-	3	10	-	-	-
Ill.	-	1	1	-	-	2	7	4	36	1	1	3	-	-	-
Mich.	1	-	-	-	-	-	8	4	24	3	4	1	-	-	3
Wis.	-	-	-	-	-	16	-	-	-	-	2	12	-	1	-
W.N. CENTRAL	1	-	42	-	-	-	14	2	12	-	14	9	2	2	4
Minn.	-	-	-	-	-	-	1	-	-	-	7	1	-	-	-
Iowa	1	-	-	-	-	-	4	-	4	-	2	-	-	-	-
Mo.	-	-	-	-	-	-	7	1	2	-	1	3	1	1	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Kans.	-	-	42	-	-	-	2	1	6	-	3	2	1	1	4
S. ATLANTIC	12	1	1	1	1	3	56	13	31	13	30	17	2	3	1
Del.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Md.	3	-	-	-	-	1	5	-	2	-	4	2	-	-	-
D.C.	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
Va.	5	-	-	-	-	-	5	1	5	1	4	-	-	-	-
W. Va.	-	-	-	-	-	-	1	7	14	-	-	-	-	-	-
N.C.	2	-	-	-	-	-	9	2	3	1	6	4	-	-	-
S.C.	-	-	-	-	-	-	10	-	2	-	1	-	-	-	1
Ga.	1	-	-	-	-	-	6	-	1	9	11	3	-	-	-
Fla.	1	1	1†	1	1	1	19	3	4	2	4	8	2	3	-
E.S. CENTRAL	2	-	-	-	-	-	30	-	3	-	5	3	-	1	1
Ky.	2	-	-	-	-	-	17	-	2	-	1	1	-	1	1
Tenn.	-	-	-	-	-	-	7	-	1	-	1	1	-	-	-
Ala.	-	U	-	U	-	-	6	U	-	U	3	1	U	-	-
Miss.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	-	4	4	-	-	-	16	6	15	5	6	11	-	-	1
Ark.	-	-	-	-	-	-	-	1	2	-	-	6	-	-	1
La.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Okla.	-	-	-	-	-	-	4	N	N	5	6	5	-	-	-
Tex.	-	4	4	-	-	-	11	5	13	-	-	-	-	-	-
MOUNTAIN	3	2	8	-	2	31	20	9	34	12	25	4	-	-	-
Mont.	-	-	-	-	-	31	2	-	1	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	1	-	-	5	7	-	-	-	-
Wyo.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Colo.	1	-	-	-	-	-	2	2	3	1	4	2	-	-	-
N. Mex.	-	2	8	-	2	-	3	N	N	1	5	1	-	-	-
Ariz.	1	-	-	-	-	-	7	7	27	4	8	1	-	-	-
Utah	-	-	-	-	-	-	2	-	1	1	1	-	-	-	-
Nev.	1	-	-	-	-	-	2	-	2	-	-	-	-	-	-
PACIFIC	38	10	24	-	1	14	90	6	25	4	23	27	3	15	6
Wash.	4	6	6	-	-	1	12	-	-	3	9	2	-	-	-
Oreg.	4	-	-	-	-	-	8	N	N	1	1	4	-	-	-
Calif.	30	4	17	-	1	11	66	3	20	-	11	19	3	15	6
Alaska	-	-	-	-	-	-	4	1	2	-	1	-	-	-	-
Hawaii	-	-	1	-	-	2	-	2	3	-	1	2	-	-	-
Guam	-	U	-	U	-	7	-	U	-	U	-	-	U	-	-
P.R.	1	-	-	-	-	20	-	1	8	-	2	1	-	-	4
V.I.	-	-	-	-	-	3	-	-	2	-	-	-	-	-	-
Pac. Trust Terr.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February 8, 1986 and February 9, 1985 (6th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985	Cum. 1986	Cum. 1986	Cum. 1986	Cum. 1986
UNITED STATES	2,472	2,800	8	1,693	1,732	9	23	6	428
NEW ENGLAND	72	64	-	61	67	-	1	1	-
Maine	3	2	-	10	2	-	-	-	-
N H	2	2	-	-	5	-	-	-	-
Vt	4	-	-	2	-	-	-	-	-
Mass	38	34	-	22	40	-	1	1	-
R I	3	1	-	4	6	-	-	-	-
Conn	22	25	-	23	14	-	-	-	-
MID ATLANTIC	363	376	1	326	380	-	2	-	54
Upstate N Y	20	16	-	63	44	-	-	-	6
N Y City	238	238	-	157	203	-	2	-	-
N J	84	71	-	66	18	-	-	-	-
Pa	21	51	1	40	115	-	-	-	48
E N CENTRAL	60	144	2	259	214	1	2	-	7
Ohio	8	12	2	34	40	1	-	-	-
Ind	24	10	-	31	26	-	-	-	1
Ill	9	83	-	134	98	-	-	-	-
Mich	14	32	-	48	39	-	2	-	2
Wis	5	7	-	12	11	-	-	-	4
W N CENTRAL	23	36	1	21	37	4	2	-	52
Minn	5	14	-	2	6	-	1	-	-
Iowa	3	6	-	2	12	1	-	-	13
Mo	12	9	-	14	11	3	1	-	5
N Dak	2	-	-	2	1	-	-	-	21
S Dak	-	1	1	-	2	-	-	-	13
Nebr	-	1	-	-	2	-	-	-	-
Kans	1	5	-	1	3	-	-	-	-
S ATLANTIC	478	727	1	296	323	2	1	3	82
Del	2	4	-	-	4	-	-	-	-
Md	52	69	-	15	28	1	-	-	52
D C	35	35	-	17	18	-	-	-	-
Va	60	38	-	17	11	-	-	-	11
W Va	3	-	-	8	13	-	-	-	1
N C	72	77	1	43	27	-	1	2	-
S C	85	95	-	50	45	-	-	1	2
Ga	-	-	-	35	45	1	-	-	11
Fla	169	409	-	111	132	-	-	-	5
E S CENTRAL	208	261	-	153	156	1	-	2	21
Ky	12	9	-	51	35	1	-	1	3
Tenn	94	62	-	40	40	-	-	-	11
Ala	58	108	U	62	66	-	-	1	7
Miss	44	82	-	-	15	-	-	-	-
W S CENTRAL	622	631	1	195	151	1	-	-	46
Ark	19	37	-	25	7	1	-	-	7
La	109	129	-	71	41	-	-	-	-
Okla	21	26	1	17	17	-	-	-	5
Tex	473	439	-	82	86	-	-	-	34
MOUNTAIN	86	103	2	35	24	-	1	-	105
Mont	1	-	-	1	2	-	-	-	45
Idaho	1	2	1	2	-	-	-	-	-
Wyo	-	3	-	-	1	-	-	-	44
Colo	28	26	-	-	-	-	-	-	-
N Mex	10	6	-	6	4	-	-	-	2
Ariz	31	61	1	17	14	-	-	-	14
Utah	3	1	-	-	-	-	1	-	-
Nev	12	4	-	9	3	-	-	-	-
PACIFIC	560	458	-	347	380	-	14	-	61
Wash	16	17	-	22	13	-	2	-	-
Oreg	15	19	-	13	11	-	-	-	-
Calif	521	414	-	287	321	-	11	-	60
Alaska	-	-	-	5	18	-	-	-	1
Hawaii	8	8	-	20	17	-	1	-	-
Guam	-	2	U	-	3	-	-	-	-
P R	83	116	-	36	20	-	-	-	4
V I	-	-	-	-	-	-	-	-	-
Pac. Trust Terr.	-	9	U	-	5	-	-	-	-
Amer. Samoa	-	-	U	-	-	-	-	-	-

U Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending February 8, 1986 (6th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	753	539	129	40	21	24	56
Boston, Mass.	195	118	40	16	12	9	18
Bridgeport, Conn.	49	36	8	3	2	-	2
Cambridge, Mass.	33	31	2	-	-	-	3
Fall River, Mass.	38	31	5	2	-	-	-
Hartford, Conn.	39	28	6	1	1	3	-
Lowell, Mass.	20	15	4	1	-	-	1
Lynn, Mass.	29	22	4	2	1	-	1
New Bedford, Mass.	28	22	6	-	-	-	3
New Haven, Conn.	61	43	9	5	2	2	-
Providence, R.I.	92	65	15	3	1	8	9
Somerville, Mass.	14	12	2	-	-	-	-
Springfield, Mass.	47	30	11	3	1	2	4
Waterbury, Conn.	42	34	6	1	1	-	5
Worcester, Mass.	66	52	11	3	-	-	10
MID ATLANTIC	2,976	2,038	558	230	63	85	175
Albany, N.Y.	75	48	15	6	1	5	1
Allentown, Pa.	26	19	6	1	-	-	-
Buffalo, N.Y.	134	98	23	8	2	3	16
Camden, N.J.	51	40	10	-	-	1	-
Elizabeth, N.J.	22	17	4	1	-	-	2
Erie, Pa.†	42	35	4	1	1	1	4
Jersey City, N.J.	51	29	13	6	-	3	1
N.Y. City, N.Y.	1,541	1,021	305	152	32	31	81
Newark, N.J.	120	48	31	13	5	21	6
Paterson, N.J.	27	17	8	1	-	1	4
Philadelphia, Pa.	405	271	77	30	11	16	22
Pittsburgh, Pa.†	47	33	13	1	-	-	2
Reading, Pa.	44	41	3	-	-	-	6
Rochester, N.Y.	157	123	24	3	6	1	14
Schenectady, N.Y.§	33	33	-	-	-	-	1
Scranton, Pa.†	34	34	-	-	-	-	7
Syracuse, N.Y.	60	48	8	2	1	1	4
Trenton, N.J.	45	29	8	3	4	1	-
Utica, N.Y.	31	26	4	1	-	-	1
Yonkers, N.Y.	31	28	2	1	-	-	3
E.N. CENTRAL	2,414	1,713	406	134	67	93	93
Akron, Ohio	54	39	9	1	3	2	3
Canton, Ohio	54	38	10	3	-	3	4
Chicago, Ill.§	553	462	11	26	16	37	16
Cincinnati, Ohio	152	102	41	5	1	3	11
Cleveland, Ohio	194	124	48	11	6	5	4
Columbus, Ohio	118	78	24	9	4	3	-
Dayton, Ohio	118	76	28	8	2	4	3
Detroit, Mich.	318	203	67	28	13	7	11
Evansville, Ind.	42	39	2	-	-	1	3
Fort Wayne, Ind.	53	39	6	3	2	3	4
Gary, Ind.	20	11	6	1	1	1	-
Grand Rapids, Mich.	60	40	9	4	3	4	3
Indianapolis, Ind.	175	114	39	15	2	5	1
Madison, Wis.	37	28	6	3	-	-	6
Milwaukee, Wis.	126	94	21	3	3	5	5
Peoria, Ill.	35	24	7	2	-	2	3
Rockford, Ill.	38	24	8	4	1	1	4
South Bend, Ind.	68	43	18	4	2	1	3
Toledo, Ohio	130	92	27	1	4	6	8
Youngstown, Ohio	69	43	19	3	4	-	1
W.N. CENTRAL	802	561	150	48	15	28	49
Des Moines, Iowa	57	45	6	4	-	2	4
Duluth, Minn.	29	23	4	1	-	1	-
Kansas City, Kans.	41	27	10	3	-	1	3
Kansas City, Mo.	141	88	40	7	2	4	10
Lincoln, Nebr.	42	32	5	1	3	1	3
Minneapolis, Minn.	96	64	17	8	-	7	6
Omaha, Nebr.	95	71	13	4	1	6	4
St. Louis, Mo.	161	120	22	12	4	3	8
St. Paul, Minn.	66	49	12	3	1	1	6
Wichita, Kans.	74	42	21	5	4	2	5

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,307	817	312	112	26	39	79
Atlanta, Ga.	195	118	44	27	4	2	5
Baltimore, Md.	106	71	22	8	1	4	3
Charlotte, N.C.	70	40	22	5	1	2	8
Jacksonville, Fla.	112	66	29	8	4	5	5
Miami, Fla.	90	48	22	14	4	2	2
Norfolk, Va.	61	27	23	8	-	3	8
Richmond, Va.	107	67	20	8	3	9	9
Savannah, Ga.	41	31	5	3	2	-	4
St. Petersburg, Fla.	156	128	22	5	-	1	12
Tampa, Fla.	95	68	19	5	-	2	14
Washington, D.C.	258	141	80	21	7	9	8
Wilmington, Del.	16	12	4	-	-	-	1
E.S. CENTRAL	828	536	187	51	34	20	55
Birmingham, Ala.	125	88	24	4	4	5	4
Chattanooga, Tenn.	55	37	14	3	1	-	7
Knoxville, Tenn.	72	50	14	-	3	5	6
Louisville, Ky.	130	81	31	11	5	2	9
Memphis, Tenn.	184	131	38	8	5	2	12
Mobile, Ala.	122	63	38	12	6	3	7
Montgomery, Ala.	28	22	4	1	-	1	1
Nashville, Tenn.	112	64	24	12	10	2	9
W.S. CENTRAL	1,460	866	352	122	62	58	70
Austin, Tex.	54	39	7	3	5	-	2
Baton Rouge, La.	58	30	17	5	3	3	2
Corpus Christi, Tex.	34	23	9	2	-	-	2
Dallas, Tex.	226	116	57	25	17	11	9
El Paso, Tex.	69	45	14	5	2	3	2
Fort Worth, Tex.	91	53	22	7	3	6	3
Houston, Tex.	339	154	108	43	18	16	4
Little Rock, Ark.	90	55	21	7	3	4	9
New Orleans, La.	131	79	35	4	6	7	2
San Antonio, Tex.	195	144	34	9	4	4	25
Shreveport, La.	70	52	13	3	-	2	4
Tulsa, Okla.	103	76	15	9	1	2	6
MOUNTAIN	714	453	162	51	21	26	42
Albuquerque, N.Mex.	96	63	14	8	5	5	8
Colo. Springs, Colo.	42	23	14	3	1	1	1
Denver, Colo.	125	71	39	8	4	3	5
Las Vegas, Nev.	102	57	29	9	3	4	6
Ogden, Utah	24	21	2	-	1	-	5
Phoenix, Ariz.	161	107	31	10	4	9	6
Pueblo, Colo.	23	17	5	-	1	-	3
Salt Lake City, Utah	38	23	10	3	1	1	1
Tucson, Ariz.	103	71	18	10	1	3	7
PACIFIC	2,304	1,535	475	164	65	48	173
Berkeley, Calif.	23	15	4	3	-	1	3
Fresno, Calif.	120	77	30	6	3	4	13
Glendale, Calif.	50	37	10	2	-	-	2
Honolulu, Hawaii	85	52	21	8	3	1	8
Long Beach, Calif.	113	79	26	4	1	3	19
Los Angeles, Calif.	769	519	156	52	22	5	33
Oakland, Calif.	77	56	12	3	3	3	4
Pasadena, Calif.	23	18	2	-	2	1	3
Portland, Oreg.	117	85	20	6	4	2	8
Sacramento, Calif.	135	85	28	13	7	2	9
San Diego, Calif.	183	119	39	16	5	4	30
San Francisco, Calif.	193	115	46	27	3	2	9
San Jose, Calif.	172	111	34	14	5	7	13
Seattle, Wash.	153	101	32	6	4	10	9
Spokane, Wash.	52	41	6	2	1	2	8
Tacoma, Wash.	39	25	9	2	2	1	2
TOTAL	13,558††	9,058	2,731	952	374	421	792

* 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 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.

§ Data not available. Figures are estimates based on average of past 4 weeks.

Epidemiologic Notes and Reports

Salmonella heidelberg Outbreak at a Convention — New Mexico

Of approximately 1,000 persons attending a convention October 6-8, 1985, in Santa Fe, New Mexico, 91 reported a diarrheal illness with onset of symptoms between 10 a.m., October 7, and 11 p.m., October 12. *Salmonella heidelberg*, sensitive to all antibiotics tested, was isolated from the stools of five attendees. Three persons were hospitalized. The ill attendees reported spending over $11,000 on medical costs and lost 117 days of work.

A telephone survey of 76 convention attendees living in New Mexico showed that, of four meals consumed at the convention, only the breakfast of October 7 was significantly associated with illness ($p < 0.002$).

In a subsequent mail survey of the approximately 550 convention attendees who ate the breakfast, the only food significantly associated with illness among the 60% who responded was eggs. All of 91 ill attendees ate the eggs, compared with 189 (92%) of 206 well attendees ($p = 0.01$). Eggs served at the meal were not available for culture; other eggs from the same distributor were culture-negative for *Salmonella*. The eggs had been cracked and stored in tall 2-gallon containers in a walk-in refrigerator the evening before the breakfast. They were then cooked in batches in a steamer in the morning. Several attendees commented that the eggs seemed "runny."

Of the staff who worked at the breakfast, three reported illness compatible with salmonellosis with onset during the same period as the conventioneers, and all three had eaten the eggs. *S. heidelberg* was isolated from the stools of two staff members who did not handle food but had eaten the eggs.

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Editorial Note: In the 1960s, eggs were responsible for a large proportion of salmonellosis outbreaks. With improvements in egg processing and quality control, egg-related outbreaks decreased dramatically in the 1970s (*1*). However, as this outbreak illustrates, egg-related illness remains an important public health concern. Pathogens may proliferate in eggs or in other food refrigerated in large containers, since the center of the container may be inadequately cooled (*2*). In this outbreak, the fact that many well attendees also ate eggs suggests that only some egg containers were contaminated, that only some eggs were cooked sufficiently to kill the bacteria, or that susceptibility to infection may have varied among the attendees.

For the 10-year period 1973-1982, 11 outbreaks of salmonellosis due to eggs were reported to CDC's Foodborne Disease Surveillance System. Of the 307 ill people in these outbreaks, 45 (15%) were hospitalized, and nine (3%) died (*3*). *S. heidelberg* has been frequently associated with poultry, accounting for 29% of *Salmonella* isolates from poultry submitted to the U.S. Department of Agriculture in 1982 (*4*).

References

1. Cohen ML, Blake PA. Trends in foodborne salmonellosis outbreaks: 1963-1975. J Food Protection 1977;40:798-800.
2. Bryan FL. Foodborne diseases in the United States associated with meat and poultry. J Food Protection 1980;43:140-50.
3. CDC. Unpublished data.
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Current Trends

Update: Influenza Activity — United States — and Influenza Type B Virus Drift

Influenza Activity in the United States. For the week ending February 7, 1986, 21 states and the District of Columbia reported widespread outbreaks of influenza-like illness, and 14 states reported regional outbreaks. Tallies of patients with influenza-like illnesses seen by the network of family physicians* nationwide continued to increase from an average of 9.1 for the reporting week ending January 22, to an average of 10.5 for the week ending January 29 (Figure 1). During the influenza epidemics of the past two winters, this surveillance system indicated maximum values of between 11 and 12 cases per week.

Type B influenza viruses represent more than 75% of isolates reported from collaborating diagnostic laboratories where outbreaks are occurring; the remaining isolates are type A(H3N2). Three states reported their first isolates for the season: Indiana and Maryland—type B; and Massachusetts—types B and A(H3N2). Twenty states have now reported both types B and A(H3N2) viruses. The percentage of pneumonia and influenza deaths reported from the 121 U.S. cities for the week ending February 7 was 5.8%, the same percentage reported for the preceding week (Figure 1).

Antigenic Drift in Circulating Type B Influenza Strains. Preliminary characterization of type B viruses isolated in the United States this season indicates that B/Georgia/1/86 and B/Ann Arbor/1/86 exhibit some antigenic drift from B/USSR/100/83, the type B virus component of the currently available influenza vaccine. Among 25 persons (12 adults and 13 high-risk children) known to respond to one dose of 1985-1986 vaccine, the serum antibody titer to type B/USSR/100/83 influenza virus increased to a value of 1:40 or greater for 92% of the group (Table 3). In contrast, 28% of those responding to the vaccine reached the 1:40 or greater antibody titer to the B/Georgia/1/86 or B/Ann Arbor/1/86 virus strains. Similar patterns were seen at the other titer levels.

Reported by State and Territorial Epidemiologists; State Laboratory Directors; Statistical Svcs Br, Div of Surveillance and Epidemiologic Studies, Div of Field Svcs, Epidemiology Program Office, WHO Collaborating Center for Influenza, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

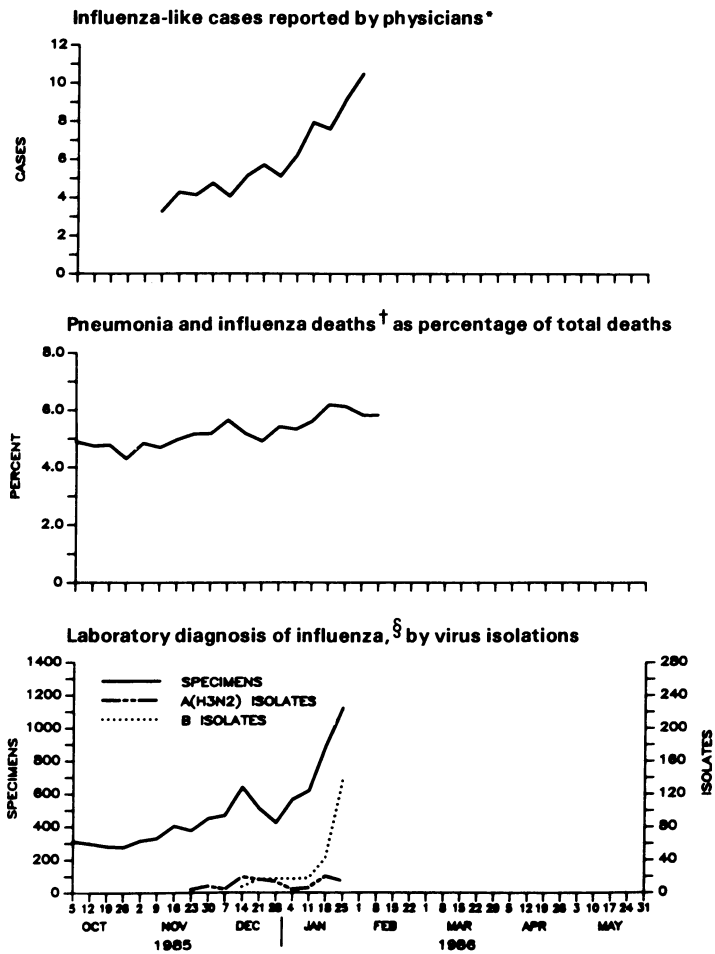
Editorial Note: No absolute level of serum antibody from influenza vaccination has been identified that can guarantee complete protection against influenza infection, although titers higher than 1:20 have been generally associated with significantly (up to about 70%) decreased rates of infection or illness. The above analysis demonstrates the existence of antigenic drift, using sera from a selected subgroup of vaccinees known to respond to the influenza B vaccine component. These data cannot be accurately extrapolated to predict vaccine efficacy rates, although protection afforded by the 1985-1986 vaccine used in programs during late 1985 will probably be lower than if the type B component of the vaccine more closely represented current isolates. Recent laboratory data indicate a close antigenic similarity between the type A(H3N2) virus strains now circulating and the A/Philippines/2/82 component of the 1985-1986 vaccine.

*Cases reported by those members of the American Academy of Family Physicians Research Panel who serve as sentinel physicians for influenza.

Influenza – Continued

If each season's vaccine is to be available for use by late summer/early fall, production (and, therefore, strain selection) must begin by February. In past epidemics, for example, influenza B outbreaks often occurred toward the end of the influenza season (March/April), rather than during the January/February peak months; thus, it has not been possible to examine influenza isolates from these late outbreaks in time for vaccine formulation decisions.

FIGURE 1. Indicators of influenza activity, by week — United States, 1985-1986



*Reported to CDC by approximately 125 physician members of the American Academy of Family Physicians. A case was defined as a patient with fever 37.8 C (100 F) or greater and at least cough or sore throat.

†Reported to CDC from 121 cities in the United States. Pneumonia and influenza deaths include all deaths where pneumonia is listed as a primary or underlying cause or where influenza is listed on the death certificate.

§Reported to CDC by WHO Collaborating Laboratories (including military sources).

Influenza — Continued

TABLE 3. Hemagglutination-inhibition serum antibody response to influenza vaccine*

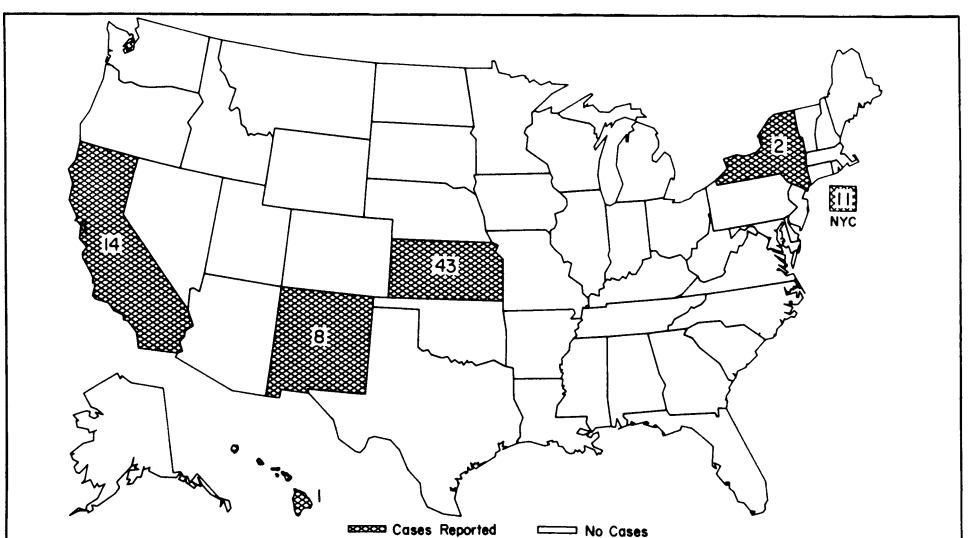
Antigen§	Cumulative percent with postvaccine titer†				Geometric mean titer	
	≥ 1:20	≥ 1:40	≥ 1:80	≥ 1:160	Prevaccine	Postvaccine
B/USSR/100/83	100	92	64	48	< 1:10	1:94
B/Georgia/1/86	52	28	12	4	< 1:10	1:16
B/Ann Arbor/1/86	48	28	12	4	< 1:10	1:15

*Twelve adults and 13 high-risk children (mean age 6.9 years) received one dose of trivalent vaccine issued for use in 1985-1986 which included B/USSR/100/83 as the type B component. The results shown were obtained for individuals, who in prior testing of a larger group, all responded to the B/USSR/100/83 antigen.

†The percentage of volunteers with prevaccine titers of 1:10 was 12% with B/USSR/100/83, 8% with B/Georgia/1/86, and 4% with B/Ann Arbor/1/86. All other prevaccine titers were lower than 1:10.

§Whole-virus antigen was used in all three cases.

FIGURE I. Reported measles cases — United States, weeks 2-5, 1986



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The data in this report are provisional, based on weekly reports 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. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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