CENTERS FOR DISEASE CONTROL

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Epidemiologic Notes and Reports

Viral Gastroenteritis — South Dakota and New Mexico

The following reports describe two outbreaks of viral gastroenteritis associated with contaminated water.

South Dakota. An outbreak of diarrhea occurred among the 331 participants in an outing held at a South Dakota campground on August 30 and 31, 1986. During the event, in which participants hiked 10 or 20 km, water and a reconstituted soft drink were available at rest stands. The State Department of Health conducted a survey of 181 participants: 135 (75%) of these persons reported a gastrointestinal illness. Symptoms most frequently reported were diarrhea (69%), explosive vomiting (55%), nausea (49%), headache (47%), abdominal cramping (46%), and fever (36%). None of the participants required hospitalization. Attack rates by sex and age of patients were virtually equal. Onset of illness occurred 35 hours (mean) after arrival at the campground, and duration of illness was about 33 hours.

A biotin-avidin immunoassay performed at CDC yielded a fourfold rise in antibody titer to Norwalk virus in seven of 11 paired human serum specimens. No pathogenic bacterial or parasitic agents were identified from stool samples. Illness was strongly associated with the consumption of water or the reconstituted powdered soft drink made with water. No other foodstuffs were implicated. The implicated water came from a well at the campground. A yard hydrant was located next to a septic dump station, where sewage from self-contained septic tanks and portable toilets in the park was collected. Water from this hydrant had been used to fill water coolers and to prepare the powdered soft drink. Laboratory analyses of remaining water and reconstituted soft drink samples showed bacterial contamination (fecal coliforms >1,600 cfu/100 mL). Chlorine was stored in a tank and then drawn directly into the water system by a pump without a monitoring system. Water samples obtained from various locations in the campground had excess coliforms when the chlorination

Viral Gastroenteritis — Continued

system was not operating. Fluorescent dye injected into a 5,000-gallon septic tank situated uphill from the well confirmed that the well was contaminated with sewage.

This campground was closed immediately and voluntarily by the owner. Corrective measures included relocating the well, installing an alarm system to detect malfunctions in the chlorination system, reconstructing the chlorination system to ensure that chlorine remains in contact with water in a storage tank for 30 minutes before the water is distributed, maintaining a daily log on chlorine residuals and sample collection points, and posting the yard hydrant as a nonpotable source of water.

New Mexico. An outbreak of gastroenteritis occurred among the 92 guests and staff at a cabin lodge in northern New Mexico over the Labor Day weekend in 1986. The guests arrived Friday, August 29, and provided their own food for the weekend. The first persons to become ill developed diarrhea on Saturday morning, within 24 hours after arrival. By Wednesday, 36 of the guests and staff members reported symptoms: 34 had diarrhea; 9, vomiting; 14, fever; 22, abdominal cramps; and 1, bloody stools. There were no deaths or hospitalizations.

A questionnaire was administered to all 92 guests and staff to ascertain risk factors for gastroenteritis. Guests consisted of unrelated groups, and they stayed in 18 separate cabins. All 36 of the patients and 37 of the 56 unaffected attendees had drunk water at their cabin. A dose-response relationship was demonstrated between the amount of water consumed and the attack rate. No illness occurred among the persons who did not drink water; 33% of those drinking 1-2 cups and 59% of those drinking $\geq$3 cups became ill. Five of the 18 cabins were unaffected; three of these belonged to families who were residents or frequent visitors at the lodge.

Assuming guests were exposed upon arrival or when they first drank water, the median incubation period was 41 hours (range = 7-110 hours). Symptoms lasted from 2-17 days, with a median of 5 days.

The cabins were supplied with water taken from a stream and processed through a small chlorinator and a storage tank that was periodically iodized. A filter had been removed recently from the pipe because it repeatedly became plugged with debris. A severe rainstorm occurred the evening the guests arrived, resulting in increased water turbidity.

Water samples taken at the cabins and the surface stream that supplied the cabins were positive for total coliforms and fecal coliforms. Stool samples from ill patrons were negative for pathogenic bacteria and parasites, except for one sample, from which *Giardia* was isolated. Convalescent-phase sera were submitted to CDC for 13 cases and 26 controls (2 per case), matched for age within 5 years, gender, and city of residence. Controls were selected from health department personnel who had not visited the lodge. No difference in Norwalk titers was found between five cases and five controls.

Under the supervision of state environmentalists, the water system was renovated before the lodge reopened, with particular emphasis on filters, the chlorinator, and the storage tank.

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Viral Gastroenteritis — Continued

Editorial Note: The two outbreaks of gastroenteritis described above are representative of those frequently reported to CDC. They demonstrate the need for an improved, specific laboratory approach to identify the agents (many of which are presumed to be viral) responsible for these outbreaks (*1,2*). Transmission of these viruses is often associated with fecal contamination of water sources used for drinking, swimming, or producing ice (*3*). Additionally, the contamination of coastal water poses a special problem, since the consumption of seafood is a risk factor for acquiring Norwalk agent infection and other enteric viral agents.

The two best-known enteric viral agents, rotavirus (group A) and Norwalk agent, were first seen in the stools of diarrhea patients by means of electron microscopy in the early 1970s. Both agents have proven to be important causes of gastroenteritis in this country, with rotavirus being the most common agent for diarrhea in young children (*4*) and Norwalk agent being common in adults (*5*). In recent years, enteric adenoviruses, non-group A rotavirus, and several 27- to 32-nm enteric viruses, including other Norwalk-like agents, caliciviruses, astroviruses, and other enteric viral pathogens, reportedly have been associated with gastroenteritis (*1,6*). Recent advances in identifying and diagnosing some of these viruses should make it possible to reduce the number of undiagnosed outbreaks in future investigations. Methods for serologic and antigenic tests are available for some agents, but the examination of stool samples by electron microscopy offers the possibility of identifying agents for which no specific tests are available. The probability of detecting viral particles by electron microscopy is greatest if stool specimens are collected during the early stages of illness, preferably within 12 hours and no later than 48 hours after onset. Some viral particles may be more stable if stool samples are stored at 4 °C. The following guidelines are currently recommended for specimen collection specifically for diagnosing outbreaks of viral gastroenteritis.

1. Stool specimens should be collected in bulk volume as soon after the time of disease onset as possible and no later than 48 hours after the onset of symptoms.
2. Stool specimens should be refrigerated, not frozen, and shipped to the laboratory on the same day that the specimen is collected.
3. Paired serum specimens that are collected within 1 week of the disease onset (acute phase) and 3 to 4 weeks after the onset of symptoms (convalescent phase) from both ill patients and controls are required to establish the causal association between agents seen in the stools and the illness.

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Current Trends

Recommendations for Protecting Human Health Against Potential Adverse Effects of Long-Term Exposure to Low Doses of Chemical Warfare Agents

In 1970, Congress gave the Department of Health and Human Services (DHHS) responsibility for reviewing Department of Defense (DOD) plans for transporting and/or disposing of certain chemical agents and making recommendations for the protection of human health and safety (Public Law [Pub. L.] 91-121/441 [50 USC 1512]). DHHS has delegated this authority to CDC. In 1985, Congress passed Pub. L. 99-145 (50 USC 1521), which mandates destruction of the present stockpile of selected chemical agents by September 30, 1994. The specific agents are listed below. In the absence of federal regulatory standards, DOD developed safety and health standards for handling these agents. In reviewing these standards and making its recommendations, CDC sought the assistance of a working group of experts.

The national stockpile of chemical agents includes six chemicals:

Nerve Agents
- GA (Tabun or ethyl N,N-dimethylphosphoramidocyanidate)
- GB (Sarin or isopropyl methylphosphonofluoridate)
- VX (S-[2-diisopropylaminoethyl] O-ethyl methyl phosphonothiolate)

Vesicants/Blister Agents
- H, HD (Sulfur mustard or di-2-chloroethyl sulfide)
- T (Bis[2-chloroethylthioethyl] ether)
- L (Lewisite or dichloro [2-chlorovinyl] arsine)

Like a number of widely used insecticides, the nerve agents GA, GB, and VX are organic compounds containing phosphorus (organophosphorus compounds). They affect nerves, muscles, and glands by inhibiting acetyl cholinesterase, an enzyme required for proper function of these tissues. H and L (an organic compound containing arsenic) are vesicants. They cause chemical burns or blisters of the skin and mucous membranes, such as the conjunctiva of the eyes and the mucosa of airways. The bulk of the national stockpile consists of H, VX, and GB; therefore, CDC, through open meetings, convened a working group of experts to consider adverse effects of acute exposure to these agents.

In 1987, DOD published an environmental impact statement that discussed options for destroying the national chemical stockpile. The preferred alternative was onsite incineration. DOD proposed building an incinerator at each of eight locations and burning the agent for complete chemical breakdown. The recommended control limits are based on air concentrations (Table 1). During public meetings held at each of the eight sites, citizens voiced their concerns about chronic low-level exposure to the agents and the delayed effects that acute exposure might cause. To resolve questions about these concerns, CDC gathered data on these agents and held an open meeting with the working group on September 29-30, 1987, in Atlanta, Georgia. The group discussed the potential health hazards that might result from the destruction of the stockpile, including organophosphate-induced delayed neuropathy, electroencephalographic (EEG) changes, cancer, birth defects, and keratitis. The group studied published and unpublished reports of all potential adverse effects, including carcinogenicity, mutagenicity, and teratogenicity, for the aforementioned agents. In addition,

Exposure — Continued

the U.S. Army Surgeon General's Office summarized a number of studies now under way or recently completed for agents GB, VX, HD, and L.

Nerve degeneration is considered an unlikely outcome either from acute intoxication with any of the nerve agents or from long-term exposure to them. Given the difficulty of demonstrating EEG changes and the absence of clinically significant effects even if the EEG changes are present, members of the working group considered the EEG changes reported after intoxication with GB to be questionable. None of the nerve agents have been shown to be mutagenic or carcinogenic. Results of recently completed studies on GB and initial reports of studies on VX indicate no teratogenic effect.

Available epidemiologic data indicate that H is a human carcinogen. Although the data suggest that H is less potent than such other known human carcinogens as smoking, radon, and chromates, they do not permit an estimate of the carcinogenic potency or the exact degree of the carcinogenic risk with confidence. Very little information is available on the long-term toxicity of agent T, which has much lower volatility than H, with which it is mixed. It is not expected to constitute an airborne hazard unless H is also present at concentrations much higher than permitted. Recommended control limits for agent T are therefore identical to those for H.

Toxicologic information specific to L is sparse. More is known about arsenic-containing compounds in general, but caution must be used in extrapolation. Some evidence suggests that L might be a carcinogen. The recommended control concentration limit, 0.003 mg/m^3 (measured as L), in air should be adequate to protect public health. The Occupational Safety and Health Administration (OSHA) has promulgated a standard of 0.5 mg/m^3 (measured as arsenic) for organic arsenic concentrations in workplace air. The National Institute for Occupational Safety and Health (NIOSH) has recommended a standard of 0.002 mg/m^3 for all forms of arsenic. The proposed L control limits are lower than the existing OSHA occupational standard for

TABLE 1. Recommended control limits for selected chemical agents

Chemical Agent*	General Population (mg/m^3)		Workers (mg/m^3)	
Nerve Agents†				
GA, GB	0.000003	($3x10^{-6}$)	0.0001	($1x10^{-4}$)
VX	0.000003	($3x10^{-6}$)	0.00001	($1x10^{-5}$)
Vesicants§				
H, HD, HT¶	0.0001	($1x10^{-4}$)	0.003	($3x10^{-3}$)
L	0.003	($3x10^{-3}$)	0.003	($3x10^{-3}$)
Averaging Time	72 hours		8 hours	

*Protection against exposure to agents in aerosol and liquid form must be sufficient to prevent direct contact with the skin and eyes.

†GA = Tabun or ethyl N,N-dimethylphosphoramidocyanidate; GB = Sarin or isopropyl methylphosphonofluoridate; VX = S-(2-diisopropylaminoethyl) O-ethyl methyl phosphonothiolate.

§H or HD = Sulfur mustard or di-2-chloroethyl sulfide; HT = Bis(2-chloroethylthioethyl) ether (T) in a mixture with sulfur mustard; L = Lewisite or dichloro (2-chlorovinyl) arsine.

¶Data supporting the ability to monitor for H at 0.0001 mg/m^3 at all sites should be developed. HT is measured as HD.

Exposure – Continued

organic arsenic by a factor of approximately 500 and are lower than the NIOSH recommended standard by a factor of 2.

Reported by: Special Programs Group, Office of the Director, Center for Environmental Health and Injury Control, Centers for Disease Control.

Editorial Note: CDC, in its continuous oversight of demilitarization activity, routinely examines each of the eight chemical storage sites in the United States and a chemical munitions incineration facility that has been in operation in Utah since 1979. Consideration is given to the population centers in the surrounding communities at depots. Standard operating procedures for agent handling and worker safety are also observed. This experience indicates that the control limits in Table 1 are attainable. Questions related to the nerve agents have been relatively easy to resolve. The information bases are fairly complete, and there appears to be little risk either of adverse health effects from long-term exposure to low doses or of delayed health effects from acute exposure.

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TABLE I. Summary – cases of specified notifiable diseases, United States

Disease	5th Week Ending			Cumulative, 5th Week Ending		
	Feb. 6, 1988	Feb. 7, 1987	Median 1983-1987	Feb. 6, 1988	Feb. 7, 1987	Median 1983-1987
Acquired Immunodeficiency Syndrome (AIDS)	746	236	156	2,629	1,601	508
Aseptic meningitis	66	86	86	353	454	454
Encephalitis: Primary (arthropod-borne & unspec)	12	17	17	55	74	75
Post-infectious	-	3	1	5	5	6
Gonorrhea: Civilian	13,873	15,398	15,802	65,007	85,593	81,008
Military	274	252	407	1,062	1,679	1,819
Hepatitis: Type A	571	435	448	2,027	2,076	2,076
Type B	378	467	467	1,397	2,006	2,040
Non A, Non B	42	56	71	156	283	283
Unspecified	48	62	94	187	296	365
Legionellosis	11	7	11	40	69	56
Leprosy	4	8	1	8	24	24
Malaria	7	17	14	39	59	55
Measles: Total*	22	23	23	103	112	112
Indigenous	20	19	19	99	91	88
Imported	2	4	4	4	21	21
Meningococcal infections	58	75	71	279	352	273
Mumps	121	468	61	325	1,274	301
Pertussis	33	39	24	95	174	129
Rubella (German measles)	3	-	2	10	21	23
Syphilis (Primary & Secondary): Civilian	766	670	616	3,172	3,185	2,649
Military	4	-	3	14	6	17
Toxic Shock syndrome	6	9	9	21	27	35
Tuberculosis	310	361	362	1,241	1,552	1,552
Tularemia	1	2	2	12	9	9
Typhoid Fever	8	3	3	26	19	24
Typhus fever, tick-borne (RMSF)	-	1	1	6	5	6
Rabies, animal	35	55	77	227	301	335

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1988		Cum. 1988
Anthrax	-	Leptospirosis	2
Botulism: Foodborne (Alaska 2)	3	Plague	-
Infant (Wash. 1)	3	Poliomyelitis, Paralytic	-
Other (Hawaii 1)	2	Psittacosis (Wash. 1)	4
Brucellosis (Calif. 1)	3	Rabies, human	-
Cholera	-	Tetanus (S.C. 1)	3
Congenital rubella syndrome	-	Trichinosis	2
Congenital syphilis, ages < 1 year	-		
Diphtheria	-		

*Two of the 22 reported cases for this week were 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 6, 1988 and February 7, 1987 (5th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	2,629	353	55	5	65,007	85,593	2,027	1,397	156	187	40	8
NEW ENGLAND	98	17	2	-	1,952	3,027	64	98	7	20	1	3
Maine	6	2	1	-	42	101	1	3	-	-	-	-
N.H.	4	4	-	-	38	47	4	2	2	-	-	-
Vt.	-	1	-	-	17	18	-	2	-	-	-	-
Mass.	56	5	1	-	630	1,132	45	84	4	20	1	3
R.I.	7	4	-	-	110	238	12	6	1	-	-	-
Conn.	25	1	-	-	1,115	1,491	2	1	-	-	-	-
MID. ATLANTIC	756	45	5	-	7,383	14,229	101	128	11	12	10	1
Upstate N.Y.	96	27	4	-	1,016	1,403	63	38	5	-	10	-
N.Y. City	336	3	1	-	4,250	8,936	18	52	-	9	-	1
N.J.	215	15	-	-	1,406	1,038	20	38	6	3	-	-
Pa.	109	-	-	-	711	2,852	-	-	-	-	-	-
E.N. CENTRAL	260	50	6	-	10,738	11,452	325	159	9	11	9	-
Ohio	65	21	3	-	2,561	2,615	256	54	2	-	-	-
Ind.	1	5	2	-	765	871	5	3	-	3	-	-
Ill.	116	-	-	-	3,234	3,250	6	5	-	1	-	-
Mich.	63	23	1	-	3,687	3,776	54	91	7	7	8	-
Wis.	15	1	-	-	491	940	4	6	-	-	1	-
W.N. CENTRAL	77	18	4	1	2,635	3,449	137	52	7	1	4	-
Minn.	20	6	1	-	363	583	5	7	-	1	-	-
Iowa	4	3	3	-	232	336	5	10	2	-	2	-
Mo.	27	2	-	-	1,501	1,741	56	27	2	-	-	-
N. Dak.	-	-	-	-	16	30	1	-	-	-	-	-
S. Dak.	3	4	-	1	51	84	-	-	-	-	-	-
Nebr.	8	-	-	-	157	189	11	5	1	-	2	-
Kans.	15	3	-	-	315	486	59	3	2	-	-	-
S. ATLANTIC	313	67	5	1	17,557	22,567	82	258	12	39	7	-
Del.	3	3	-	-	273	301	-	9	-	1	1	-
Md.	58	8	-	-	1,564	1,883	11	33	1	-	1	-
D.C.	31	2	-	-	970	1,378	1	1	1	-	-	-
Va.	2	8	4	-	1,495	1,910	10	19	2	30	-	-
W. Va.	3	3	-	-	180	133	-	6	-	2	-	-
N.C.	38	8	1	-	2,676	3,466	17	60	5	3	2	-
S.C.	18	-	-	-	1,386	2,370	2	75	2	-	1	-
Ga.	76	4	-	-	3,154	3,648	9	15	-	-	-	-
Fla.	84	31	-	1	5,859	7,478	32	40	1	3	2	-
E.S. CENTRAL	86	26	5	1	5,443	5,791	56	76	13	2	3	-
Ky.	4	11	2	-	458	607	48	14	4	1	1	-
Tenn.	50	3	2	-	1,525	1,911	6	30	6	-	1	-
Ala.	20	10	1	1	2,197	1,944	-	31	3	1	1	-
Miss.	12	2	-	-	1,263	1,329	2	1	-	-	-	-
W.S. CENTRAL	269	12	-	-	8,641	9,910	99	69	4	15	1	-
Ark.	6	1	-	-	636	1,039	13	6	-	1	-	-
La.	38	1	-	-	2,599	1,348	2	21	1	-	-	-
Okla.	12	3	-	-	604	1,007	21	16	1	2	1	-
Tex.	213	7	-	-	4,802	6,516	63	26	2	12	-	-
MOUNTAIN	128	13	8	1	1,422	2,175	348	160	20	24	4	-
Mont.	3	-	-	-	35	47	5	7	1	2	-	-
Idaho	-	-	-	-	33	73	12	11	-	-	-	-
Wyo.	-	-	-	-	16	20	-	-	-	-	-	-
Colo.	53	5	2	-	371	452	15	22	2	7	2	-
N. Mex.	7	-	-	-	159	233	64	14	1	-	-	-
Ariz.	45	1	2	-	484	763	189	76	9	9	-	-
Utah	13	6	3	1	66	94	47	10	5	5	2	-
Nev.	7	1	1	-	258	493	16	20	2	1	-	-
PACIFIC	642	105	20	1	9,236	12,993	815	397	73	63	1	4
Wash.	1	-	-	-	575	916	75	25	6	1	-	-
Oreg.	36	-	-	-	323	470	188	70	10	2	-	-
Calif.	592	86	19	1	8,097	11,227	515	293	56	59	1	4
Alaska	6	4	-	-	124	259	37	9	1	1	-	-
Hawaii	7	15	1	-	117	121	-	-	-	-	-	-
Guam	-	-	-	-	13	26	1	1	-	1	-	-
P.R.	12	2	1	-	154	232	1	27	2	6	-	-
V.I.	-	-	-	-	42	24	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	42	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	6	12	-	1	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February 6, 1988 and February 7, 1987 (5th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	1988	Cum. 1988	Cum. 1987
UNITED STATES	39	20	99	2	4	112	279	121	325	33	95	174	3	10	21
NEW ENGLAND	4	-	1	-	-	5	29	-	3	9	13	3	-	-	-
Maine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N.H.	-	-	-	-	-	-	5	-	2	9	11	1	-	-	-
Vt.	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
Mass.	3	-	1	-	-	-	15	-	1	-	-	1	-	-	-
R.I.	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-
Conn.	1	-	-	-	-	-	4	-	-	-	2	1	-	-	-
MID. ATLANTIC	5	7	23	-	-	32	28	2	14	1	4	22	-	-	-
Upstate N.Y.	3	-	-	-	-	2	16	-	2	1	2	16	-	-	-
N.Y. City	2	4	4	-	-	18	3	-	-	-	-	-	-	-	-
N.J.	-	-	-	-	-	1	9	-	5	-	-	1	-	-	-
Pa.	-	3	19	-	-	11	-	2	7	-	2	5	-	-	-
E.N. CENTRAL	2	-	-	-	-	24	33	22	79	3	6	33	-	-	2
Ohio	-	-	-	-	-	-	16	15	15	2	2	15	-	-	-
Ind.	-	-	-	-	-	-	1	-	6	-	-	-	-	-	-
Ill.	-	-	-	-	-	2	1	-	5	-	-	-	-	-	1
Mich.	2	-	-	-	-	22	12	7	44	1	4	5	-	-	1
Wis.	-	-	-	-	-	-	3	-	9	-	-	13	-	-	-
W.N. CENTRAL	1	-	-	-	-	-	10	14	37	-	10	17	-	-	-
Minn.	1	-	-	-	-	-	1	-	-	-	-	2	-	-	-
Iowa	-	-	-	-	-	-	-	5	13	-	3	2	-	-	-
Mo.	-	-	-	-	-	-	6	3	10	-	-	7	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	4	1	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-
Nebr.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Kans.	-	-	-	-	-	-	3	6	13	-	1	4	-	-	-
S. ATLANTIC	6	-	-	-	2	-	30	3	13	3	13	36	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Md.	1	-	-	-	1	-	3	-	-	-	-	-	-	-	-
D.C.	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Va.	1	-	-	-	-	-	4	-	3	-	1	16	-	-	-
W. Va.	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
N.C.	-	-	-	-	1	-	4	-	3	3	8	15	-	-	-
S.C.	3	-	-	-	-	-	5	1	1	-	-	-	-	-	-
Ga.	-	-	-	-	-	-	4	-	2	-	3	2	-	-	-
Fla.	1	-	-	-	-	-	10	1	3	-	-	-	-	-	-
E.S. CENTRAL	1	-	-	-	-	-	31	31	67	1	3	3	-	-	2
Ky.	-	-	-	-	-	-	6	6	7	-	-	1	-	-	2
Tenn.	-	-	-	-	-	-	16	24	58	1	3	-	-	-	-
Ala.	1	-	-	-	-	-	9	-	1	-	-	-	-	-	-
Miss.	-	-	-	-	-	-	-	N	N	-	-	2	-	-	-
W.S. CENTRAL	3	-	-	-	-	-	11	8	24	-	-	5	-	-	-
Ark.	-	-	-	-	-	-	3	1	1	-	-	-	-	-	-
La.	-	-	-	-	-	-	-	2	7	-	-	-	-	-	-
Okla.	3	-	-	-	-	-	-	-	7	-	-	5	-	-	-
Tex.	-	-	-	-	-	-	8	5	9	-	-	-	-	-	-
MOUNTAIN	1	8	35	-	-	2	12	7	19	-	11	9	-	-	1
Mont.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	1	-	-	-	7	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	1	-	1	2	-	-	-
Colo.	-	8	35	-	-	-	4	-	2	-	-	6	-	-	-
N. Mex.	-	-	-	-	-	1	4	N	N	-	-	1	-	-	-
Ariz.	-	-	-	-	-	1	2	5	13	-	1	-	-	-	-
Utah	-	-	-	-	-	-	1	-	1	-	2	-	-	-	1
Nev.	1	-	-	-	-	-	-	2	2	-	-	-	-	-	-
PACIFIC	16	5	40	2	2	49	95	34	69	16	35	46	3	10	16
Wash.	1	-	-	-	-	-	5	-	1	1	3	5	-	-	-
Oreg.	2	-	-	-	-	1	9	N	N	-	2	8	-	-	1
Calif.	12	5	40	1†	1	48	77	33	65	14	21	30	2	9	14
Alaska	1	-	-	-	-	-	1	1	3	-	-	1	-	-	-
Hawaii	-	-	-	1†	1	-	3	-	-	1	9	2	1	1	1
Guam	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
P.R.	1	-	-	-	-	-	2	-	2	-	-	4	-	-	-
V.I.	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*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 7, 1988 and February 6, 1987 (5th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	3,172	3,185	21	1,241	1,552	12	26	6	227
NEW ENGLAND	91	45	4	19	27	-	4	-	2
Maine	2	-	1	2	1	-	-	-	-
N.H.	1	-	2	-	1	-	-	-	2
Vt.	-	-	-	-	1	-	-	-	-
Mass.	34	30	1	8	6	-	3	-	-
R.I.	3	-	-	1	-	-	-	-	-
Conn.	51	15	-	8	18	-	1	-	-
MID. ATLANTIC	595	391	1	240	304	-	2	-	19
Upstate N.Y.	41	6	1	51	58	-	1	-	-
N.Y. City	469	257	-	76	139	-	1	-	-
N.J.	75	57	-	60	60	-	-	-	-
Pa.	10	71	-	53	47	-	-	-	19
E.N. CENTRAL	87	104	1	197	217	1	-	-	6
Ohio	5	7	-	38	34	-	-	-	-
Ind.	11	6	-	13	3	-	-	-	-
Ill.	46	70	-	72	101	-	-	-	2
Mich.	24	11	1	65	74	1	-	-	-
Wis.	1	10	-	9	5	-	-	-	4
W.N. CENTRAL	13	15	4	36	45	5	-	-	45
Minn.	1	4	-	9	6	-	-	-	18
Iowa	2	2	1	3	5	-	-	-	11
Mo.	4	9	2	16	25	4	-	-	1
N. Dak.	-	-	-	-	1	-	-	-	4
S. Dak.	1	-	-	8	2	-	-	-	6
Nebr.	2	-	1	-	3	1	-	-	1
Kans.	3	-	-	-	3	-	-	-	4
S. ATLANTIC	1,128	1,086	3	271	303	1	1	6	56
Del.	17	10	-	3	1	1	-	-	-
Md.	56	50	-	31	28	-	-	-	21
D.C.	49	22	-	10	12	-	-	-	-
Va.	33	32	-	41	34	-	-	-	14
W. Va.	1	-	-	7	12	-	-	-	4
N.C.	68	60	2	9	36	-	-	6	-
S.C.	35	72	-	43	44	-	-	-	1
Ga.	186	175	-	14	19	-	1	-	16
Fla.	683	665	1	113	117	-	-	-	-
E.S. CENTRAL	185	208	4	114	181	3	-	-	13
Ky.	3	-	2	40	24	3	-	-	8
Tenn.	51	75	1	18	45	-	-	-	-
Ala.	73	54	1	47	59	-	-	-	5
Miss.	58	79	-	9	53	-	-	-	-
W.S. CENTRAL	358	439	-	78	109	-	-	-	35
Ark.	2	18	-	5	7	-	-	-	9
La.	50	49	-	19	25	-	-	-	-
Okla.	16	18	-	17	13	-	-	-	4
Tex.	290	354	-	37	64	-	-	-	22
MOUNTAIN	70	74	1	16	31	2	2	-	23
Mont.	2	3	-	-	-	-	1	-	19
Idaho	-	1	1	-	2	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	2
Colo.	13	8	-	2	2	2	1	-	-
N. Mex.	7	7	-	6	6	-	-	-	1
Ariz.	12	35	-	6	18	-	-	-	1
Utah	4	-	-	-	-	-	-	-	-
Nev.	32	20	-	2	3	-	-	-	-
PACIFIC	645	823	3	270	335	-	17	-	28
Wash.	-	14	-	14	10	-	2	-	-
Oreg.	14	13	-	12	13	-	1	-	-
Calif.	627	795	3	224	283	-	12	-	28
Alaska	-	-	-	3	7	-	-	-	-
Hawaii	4	1	-	17	22	-	2	-	-
Guam	-	-	-	-	2	-	-	-	-
P.R.	69	88	-	11	15	-	-	-	6
V.I.	1	2	-	-	1	-	-	-	-
Amer. Samoa	-	2	-	-	13	-	-	-	-
C.N.M.I.	-	-	-	-	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending February 6, 1988 (5th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	632	443	111	40	15	23	56
Boston, Mass.	196	125	36	19	8	8	19
Bridgeport, Conn.	51	42	7	1	-	1	3
Cambridge, Mass.	18	13	4	1	-	-	6
Fall River, Mass.	35	26	6	1	-	2	1
Hartford, Conn.	45	31	7	5	1	1	1
Lowell, Mass.	23	15	5	3	-	-	2
Lynn, Mass.	31	22	6	3	-	-	2
New Bedford, Mass.	27	22	4	1	-	-	3
New Haven, Conn.	27	14	3	2	-	8	2
Providence, R.I.	33	24	4	2	2	1	1
Somerville, Mass.	7	5	2	-	-	-	-
Springfield, Mass.	47	30	11	2	4	-	4
Waterbury, Conn.	34	29	5	-	-	-	7
Worcester, Mass.	58	45	11	-	-	2	5
MID. ATLANTIC	2,916	1,970	574	231	77	64	149
Albany, N.Y.	53	36	11	2	3	1	1
Allentown, Pa.	19	15	3	1	-	-	-
Buffalo, N.Y.§	108	74	23	8	1	2	7
Camden, N.J.	28	11	13	3	-	1	-
Elizabeth, N.J.	26	21	5	-	-	-	1
Erie, Pa.†	45	31	10	1	1	2	7
Jersey City, N.J.	54	42	8	2	1	1	2
N.Y. City, N.Y.	1,525	990	295	158	56	26	73
Newark, N.J.	41	17	11	10	1	2	5
Paterson, N.J.	27	15	7	1	2	2	3
Philadelphia, Pa.	486	335	109	24	6	12	18
Pittsburgh, Pa.†	78	47	18	3	2	8	-
Reading, Pa.	41	36	5	-	-	-	1
Rochester, N.Y.	115	86	21	6	1	1	14
Schenectady, N.Y.	29	24	2	2	1	-	1
Scranton, Pa.†	40	29	9	2	-	-	-
Syracuse, N.Y.	89	72	12	3	-	2	8
Trenton, N.J.	49	35	7	4	1	2	3
Utica, N.Y.	20	18	1	-	-	1	3
Yonkers, N.Y.	43	36	4	1	1	1	2
E.N. CENTRAL	2,377	1,596	507	144	45	79	120
Akron, Ohio	80	57	16	5	1	1	3
Canton, Ohio	43	36	6	1	-	-	12
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	134	81	39	7	3	4	10
Cleveland, Ohio	156	91	48	11	3	3	3
Columbus, Ohio	129	84	30	6	3	6	2
Dayton, Ohio	115	83	22	6	1	3	4
Detroit, Mich.	223	133	54	16	11	9	6
Evansville, Ind.	46	34	10	-	-	2	4
Fort Wayne, Ind.	85	56	18	8	-	3	6
Gary, Ind.	21	10	7	1	-	3	1
Grand Rapids, Mich.	58	39	12	4	1	2	6
Indianapolis, Ind.	173	115	37	8	5	8	4
Madison, Wis.	45	30	8	5	1	1	4
Milwaukee, Wis.	148	119	23	5	-	1	10
Peoria, Ill.	60	42	10	3	2	3	9
Rockford, Ill.	47	37	7	2	1	-	7
South Bend, Ind.	16	13	3	-	-	-	1
Toledo, Ohio	133	97	21	6	3	6	11
Youngstown, Ohio	101	77	11	5	-	2	1
W.N. CENTRAL	965	684	181	49	19	32	71
Des Moines, Iowa	50	38	10	1	1	-	2
Duluth, Minn.	20	15	3	-	1	1	2
Kansas City, Kans.	40	32	6	1	-	1	-
Kansas City, Mo.	113	66	27	11	5	4	4
Lincoln, Nebr.	43	33	7	2	-	1	6
Minneapolis, Minn.	322	237	49	17	7	12	35
Omaha, Nebr.	65	51	10	3	-	1	8
St. Louis, Mo.	151	98	38	4	3	8	5
St. Paul, Minn.	83	58	16	6	1	2	2
Wichita, Kans.	78	56	15	4	1	2	7

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-84	25-44	1-24	<1	Total
S. ATLANTIC	1,555	948	356	138	49	63	69
Atlanta, Ga.	214	122	42	20	7	23	5
Baltimore, Md.	298	172	83	23	10	10	15
Charlotte, N.C.	83	47	24	6	4	2	5
Jacksonville, Fla.	114	70	30	10	2	2	6
Miami, Fla.	239	138	55	28	10	8	1
Norfolk, Va.	57	37	13	2	1	4	1
Richmond, Va.	86	56	20	6	1	3	11
Savannah, Ga.	59	39	13	5	2	-	7
St. Petersburg, Fla.	104	87	7	2	5	3	7
Tampa, Fla.	71	47	13	5	2	3	5
Washington, D.C.	201	113	50	28	5	5	5
Wilmington, Del.	29	20	6	3	-	-	1
E.S. CENTRAL	935	631	192	62	23	27	64
Birmingham, Ala.	113	62	28	13	3	7	1
Chattanooga, Tenn.	77	60	15	1	1	-	6
Knoxville, Tenn.	126	92	16	14	4	-	9
Louisville, Ky.	132	89	30	7	3	3	14
Memphis, Tenn.	255	176	47	15	10	7	22
Mobile, Ala.	72	46	16	4	1	5	4
Montgomery, Ala.	43	34	8	-	1	-	3
Nashville, Tenn.	117	72	32	8	-	5	5
W.S. CENTRAL	1,421	890	318	120	51	39	66
Austin, Tex.	74	57	9	6	1	1	7
Baton Rouge, La.	55	33	17	2	1	2	2
Corpus Christi, Tex.	32	29	2	-	1	-	1
Dallas, Tex.	210	118	54	18	10	10	3
El Paso, Tex.	57	32	18	4	1	2	3
Fort Worth, Tex	110	76	19	7	6	2	5
Houston, Tex.§	308	176	74	34	13	11	7
Little Rock, Ark.	108	63	22	13	2	5	6
New Orleans, La.	108	65	25	15	3	-	-
San Antonio, Tex.	215	137	55	12	8	3	23
Shreveport, La.	23	18	4	1	-	-	1
Tulsa, Okla.	121	86	19	8	5	3	8
MOUNTAIN	649	447	135	37	16	14	45
Albuquerque, N. Mex.	81	63	9	5	3	1	3
Colo. Springs, Colo.	43	31	7	2	1	2	6
Denver, Colo.	66	45	13	5	1	2	3
Las Vegas, Nev.	108	76	24	4	3	1	13
Ogden, Utah	20	13	3	2	1	1	2
Phoenix, Ariz.	137	90	29	10	3	5	5
Pueblo, Colo.	30	21	5	4	-	-	1
Salt Lake City, Utah	40	21	14	3	1	1	-
Tucson, Ariz.	124	87	31	2	3	1	12
PACIFIC	2,295	1,581	395	171	66	67	180
Berkeley, Calif.	17	15	2	-	-	-	2
Fresno, Calif.	123	84	22	7	3	6	19
Glendale, Calif.	49	37	6	4	1	-	2
Honolulu, Hawaii	81	56	18	3	3	1	11
Long Beach, Calif.	53	41	6	4	1	1	7
Los Angeles Calif.	646	431	115	53	23	11	30
Oakland, Calif.	80	63	11	3	1	2	1
Pasadena, Calif.	56	40	10	1	2	3	10
Portland, Oreg.	149	108	24	6	3	8	9
Sacramento, Calif.	184	133	23	15	5	8	16
San Diego, Calif.	198	131	37	19	6	5	20
San Francisco, Calif.	185	112	38	26	2	7	10
San Jose, Calif.	192	132	31	14	9	6	25
Seattle, Wash.	165	115	31	12	2	5	4
Spokane, Wash.	54	40	11	1	-	2	4
Tacoma, Wash.	63	43	10	3	5	2	10
TOTAL	13,745††	9,190	2,769	992	361	408	820

*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.

Exposure – Continued

Exposure to or contact with H by any route – respiratory, skin, or oral – should be limited to the extent practicable. This can be accomplished by use of appropriate engineering controls, personal protective equipment, and work practices. Concentrations in the workplace and surrounding air should be measured and verified by instruments that can reliably detect concentrations at or below the control limits. At this time, the most sensitive monitors can reliably measure 0.003 mg/m^3 of H and L in the workplace air. Because of dispersion and dilution, this level would be adequate protection for the general population.

The members of the working group also considered DOD's proposal for agent stack emission levels during incineration. These limits should be 1) attainable by a well-designed, constructed, and operated incineration facility, 2) capable of offering an early indication of disturbed operating conditions, and 3) able to be accurately measured in a timely manner. The allowable stack concentrations proposed by DOD meet these criteria and appear to restrict emissions to concentrations well below those that would endanger health. They must be evaluated by air dispersion modeling of credible worst-case events and conditions specific to each site to ensure that they will not result in emissions exceeding the permissible level for the general population and the workplace.

On the basis of the evidence reviewed, members of the working group concluded that human health will be adequately protected from exposure to the chemical agents at the recommended concentrations in this report. Even long-term exposure to these concentrations would not create adverse health effects. The relatively short duration of the disposal program provides an additional margin of safety.

Epidemiologic Notes and Reports

La Crosse Encephalitis in West Virginia

Between July 6 and September 1, 1987, in central West Virginia, 19 cases of La Crosse encephalitis were serologically confirmed (Figure 1). After a cluster of meningo-encephalitis cases was reported from a referral pediatric service in Charleston, active hospital-based surveillance was undertaken in 15 counties in central and southern West Virginia, where La Crosse encephalitis had previously occurred. Cases were identified in five of these counties.

Eleven (58%) of the 19 patients were diagnosed as having viral encephalitis. Four (21%) had symptoms of meningitis alone, and four (21%) had meningo-encephalitis. The patients ranged in age from 1 to 14 years (mean = 7 years). Fifteen (79%) patients were male; the male-to-female ratio was 3.8:1. Eighteen (95%) children were hospitalized, and one child was treated as an outpatient. One patient, a 9-year-old boy with cerebral edema, died despite intensive supportive care.

All patients lived in rural areas of central West Virginia, a region with thick hardwood forests conducive to mosquito breeding. Attack rates varied by the patients' sex and place of residence (Table 1). Males were at much greater risk of becoming ill than females. The attack rate among children under 15 years of age in Nicholas County was over four times the rate in any other county. A case-control study is under way to test hypotheses regarding possible behavioral and environmental risk factors.

Encephalitis — Continued

For six (32%) of the patients, diagnosis was based on compatible clinical findings and a single immunofluorescent antibody (IFA) titer >128 during the convalescent stage of illness. For the other 13 (68%), a fourfold rise in antibody titer was demonstrated between the acute and convalescent stages of illness.

In the past, few cases of La Crosse encephalitis have been reported in West Virginia. Of 223 cases of encephalitis reported to the West Virginia Department of Health from 1980 through 1986, only eight (4%)—six in 1984 and two in 1985—were attributed to a California serogroup virus. Much of the increase in reported incidence in 1987 may be the result of intensive case-finding efforts. A change in the state laboratory's serologic procedure for La Crosse virus diagnosis may also have contributed to the increase in the number of identified cases. Previously, serologic diagnoses were made by measuring complement-fixing antibodies. The more sensitive IFA was adopted in 1987.

FIGURE 1. Reported cases of LaCrosse encephalitis, by week of onset — West Virginia, 1987

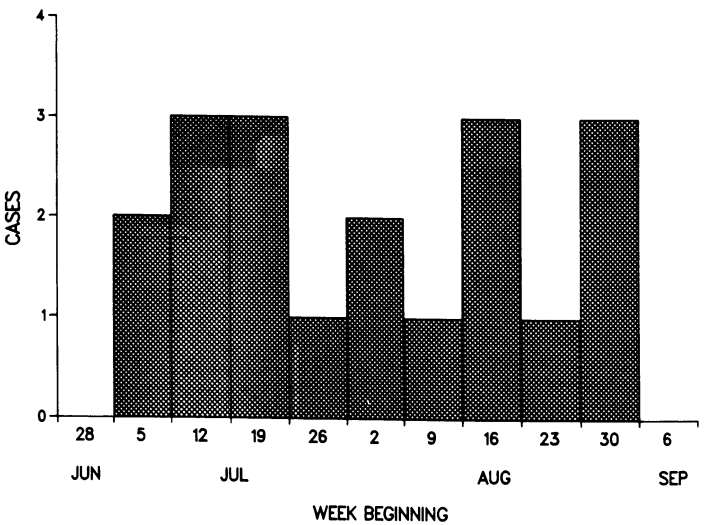

TABLE 1. Attack rates of La Crosse encephalitis, by sex and county of residence — West Virginia, July 6-September 1, 1987

	Males		Females		Total	
County	**No.**	**Rate***	**No.**	**Rate***	**No.**	**Rate***
Nicholas	5	129	3	84	8	107
Greenbrier	2	45	—	0	2	23
Fayette	3	41	—	0	3	21
Kanawha	4	16	1	4	5	10
Logan	1	14	—	0	1	7
Total	**15**	**31**	**4**	**9**	**19**	**20**

*Attack rate = number of patients <15 years of age per 100,000 population of the same age.

Encephalitis — Continued

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Editorial Note: La Crosse virus, a bunyavirus in the California serogroup, and its mosquito vector, *Aedes triseriatus*, are widely distributed in the central and eastern United States (*1,2*). Central nervous system (CNS) infections from La Crosse virus have been recognized chiefly in the upper Midwest. However, reports of sporadic cases from other states suggest that the disease may be endemic in a broader geographic distribution (*3,4*). The focus of cases in West Virginia in 1987 illustrates the high levels of endemic transmission that may remain undetected unless specific diagnoses are sought.

CNS infections from La Crosse virus occur nearly exclusively among children. Of the 929 cases reported to CDC from 1971-1983, 833 (89.7%) involved children under 15 years of age. Boys are affected more often than girls, presumably because they spend more time outdoors where they are exposed to the vector. Boys accounted for 66.3% of the 833 reported cases involving children. Although the proportion of reported cases involving males in West Virginia in 1987 was higher than the proportion reported elsewhere, it was not significantly greater than expected ($p>0.17$, binomial distribution).

The incidence of La Crosse encephalitis in the five-county area of central West Virginia (20/100,000 children <15 years of age, 4.7/100,000 total population) was similar to rates reported from other locations where the disease is endemic. In 1978, active, hospital-based surveillance in 20 Wisconsin and Minnesota counties showed an incidence of 31.6/100,000 children under 15 years of age and 6.3/100,000 total population (*5*).

La Crosse encephalitis is infrequently recognized as a cause of childhood morbidity from CNS infection. Incidence rates for La Crosse encephalitis in endemic areas are similar to rates for *Haemophilus influenzae* meningitis, which range from 35 to 40/100,000 for children under 5 years of age and from 2.2 to 7.7/100,000 for the total population (*6*). The fatality rate for La Crosse encephalitis is <1%; however, during acute illness, convulsions occur in 50% of cases, and focal weakness, paralysis, or other localized signs occur in 25% (*3*). Residual convulsive disorders may persist in 10% of cases, and some recovered patients have impaired cognitive performance (*3*).

Public health measures to control La Crosse encephalitis have focused on eliminating breeding sites for *Ae. triseriatus*, but the importance of tree holes and breeding sites such as tires and other discarded containers in the spread of La Crosse encephalitis has not been well defined. The current case-control study addresses this issue; results of the study will help public health officials planning mosquito control programs to target breeding sites that pose the greatest risk.

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Encephalitis — Continued

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Epidemiologic Notes and Reports

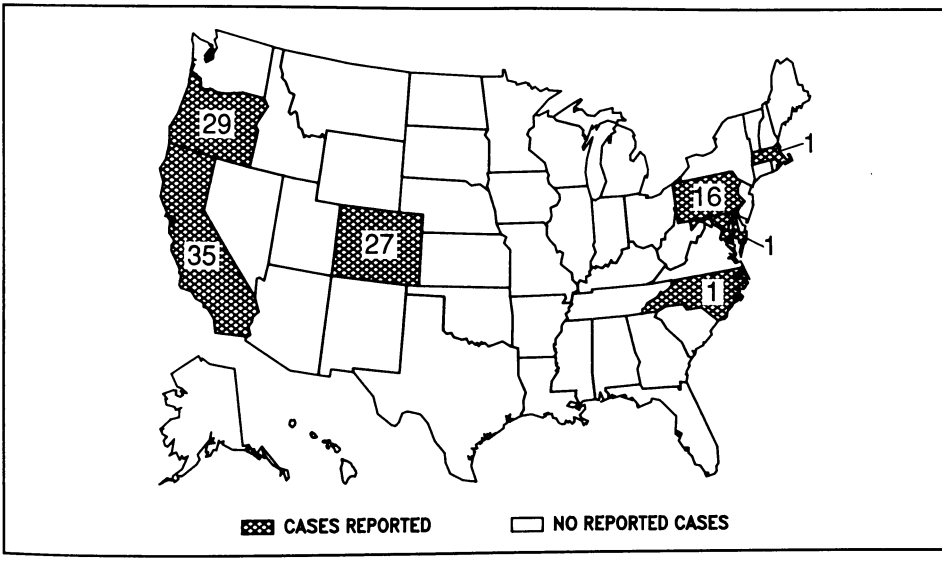
Influenza Update — United States

The following are indicators of influenza activity in the United States for the weeks ending January 16, 23, 30, and February 6. Numbers and percentages in this table are provisional and may change as additional reports are received for the given weeks.

	Report Week Ending			
	Jan 16 1988	Jan 23 1988	Jan 30 1988	Feb 6 1988
Influenza-associated morbidity levels reported by state and territorial epidemiologists				
Number of states reporting sporadic activity*	25	29	31	23
Number of states reporting regional activity†	5	10	11	17
Number of states reporting widespread activity§	2	2	4	6
Reports from sentinel physicians¶				
Patients seen with influenza-like illness, expressed as percent of total patient visits	5%	4%	6%	6%
Sentinel physicians reporting outbreaks, expressed as percent of total number of reports received for week	21%	18%	19%	36%
Isolates reported by WHO Collaborating Laboratories and other laboratories				
Cumulative number of states reporting isolates of influenza A(H3N2)**	16	23	26	32
Cumulative number of states reporting isolates of influenza B ††	6	6	6	9

*Sporadically occurring cases, no known outbreaks.
†Outbreaks in counties whose total population comprises less than 50% of total state population.
§Outbreaks in counties whose total population comprises 50% or more of total state population.
¶Members of the American Academy of Family Physicians who submit weekly influenza surveillance reports based on their patient population.
**States reporting isolates of influenza A(H3N2) to date: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, New Mexico, North Dakota, New York, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Washington, West Virginia, Wisconsin, and Wyoming.
††States reporting isolates of influenza B to date: Arizona, Hawaii, Montana, Nevada, New York, Ohio, Tennessee, Washington, and Wisconsin.

FIGURE I. Reported measles cases — United States, Weeks 1-4, 1988



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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: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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