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MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Follow-up on Drug-Resistant Tuberculosis — Mississippi

On December 23, 1977, an outbreak of drug-resistant tuberculosis was described in a rural northern Mississippi county (*1*). Since then 5 more cases of tuberculosis due to organisms with confirmed primary resistance to isoniazid, para-aminosalicylic acid, and streptomycin (INH-PAS-SM) have been reported. This brings the total of such cases in the county to 19 since 1964.

Three of 5 new cases are known to be epidemiologically linked to cases previously reported with INH-PAS-SM resistance in the county. All 19 patients known to have this drug-resistant disease have been placed on alternative drug regimens, and all but one have had a good response. One patient was started on therapy but relapsed because of poor compliance. She is currently hospitalized in Illinois. Her 2-year-old son has been clinically diagnosed as having tuberculosis with negative bacteriology.

Two of the 5 newly confirmed cases due to drug-resistant organisms occurred in 1 household. The first was in a 17-year-old woman who was a sophomore in the same high school as were some of the other patients previously reported (*1*). She did not receive a tuberculin test during the attempts to complete the school screening in 1976 because she had dropped out of school. However, her private physician has reported that she had a normal chest X ray in September 1976. This patient was admitted to a local hospital in late March 1978 with cavitary tuberculosis, bacteriologically confirmed, due to organisms resistant to INH-PAS-SM. The second such case in this household was in this patient's 10-month-old daughter.

During the evaluation of the 17-year-old's 21 other close contacts, 4 more cases were discovered. Since organisms were not recovered, a drug-resistance pattern could not be determined. However, all the patients were placed on INH, ethambutol, and rifampin. These 4 cases were the mother of the 17-year-old, age 42, who had been tuberculin-negative in October 1977 but had an 18-mm reaction to tuberculin, PPD, with an abnormal X ray on April 10, 1978; a 4- year-old sister, who converted (11 mm) and had an abnormal X ray; a 22-month-old nephew, who had an 18-mm reaction with an abnormal X ray; and a 33-year-old uncle, who had a 6-mm reaction with an abnormal X ray. Of the 17 remaining contacts, 11 were tuberculin-positive (9 of these were placed on INH preventive therapy), and 6 were tuberculin-negative (one was placed on INH preventive therapy).

Of the 19 cases of drug-resistant tuberculosis reported in this county, 4 occurred since 1976 in individuals who had received INH as preventive therapy. Records show that 3 of the 4 persons took INH irregularly; the fourth patient had taken 10 months of INH medication over a 12-month period. However, it is possible that this person had not been infected with *Mycobacterium tuberculosis* at the time he received INH, since his tuberculin test results were questionable (5-mm reaction to tuberculin, PPD).

Tuberculosis — Continued

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Editorial Note: Although transmission of drug-resistant tuberculosis in families and households has been previously documented (*2*), this outbreak of tuberculosis is unusual because it is the first documented community outbreak of drug-resistant tuberculosis. Also unusual is the fact that this strain exhibits considerable catalase activity. The catalase activity of INH-resistant strains is usually absent or weak, and such strains demonstrate diminished virulence in laboratory animals. The fact that these organisms have retained their catalase activity may explain their apparent virulence. Officials from the Mississippi State Board of Health and CDC are conducting ongoing surveillance and containment activities for this outbreak. Special long-term follow-up activities are being initiated for cases and contacts thought to be infected with this drug-resistant strain. Additional screening activities are being planned in September for schools in the outbreak area. These will be followed by selected community screening activities designed to assess transmission and to uncover any possible remaining foci of drug-resistant disease.

Patients from Mississippi with disease due to organisms resistant to INH-PAS-SM have traveled to Tennessee, Wisconsin, and Illinois. Epidemiologic investigations in these states have not uncovered any additional cases of bacteriologically confirmed disease related to the Mississippi outbreak. Because of the possibility of interstate transmission, it is recommended that health departments carefully assess any case of tuberculosis due to organisms resistant to INH-PAS-SM to determine if any link to the Mississippi outbreak can be established (especially in persons never previously treated with INH-PAS-SM).

On July 31 and August 1, experts in the fields of tuberculosis, infectious disease, public health, and medical ethics reviewed the management of the Mississippi outbreak. They agreed that, since there is no known effective preventive treatment under these circumstances, prolonged careful follow-up of infected contacts is indicated regardless of what preventive measures might be taken. Recognizing that there were several options from which to choose, including INH preventive treatment (the option which had been chosen in Mississippi), they generally concurred that the CDC plan of action be continued in Mississippi, but that other options be considered in similar future episodes. CDC is now in the process of preparing a summary of the expert opinions and will issue recommendations on the management of contacts to INH-resistant tuberculosis.

References

1. MMWR 26:417-418, 1977
2. Steiner M, Chaves AD, Lyons HA, Steiner P, Portugaleza C: Primary drug-resistant tuberculosis: Report of an outbreak. N Engl J Med 283:1353-1358, 1970

Botulism — Puerto Rico

The first outbreak of botulism reported in Puerto Rico occurred in August 1978, among a restaurant owner and 2 of his employees in Guaynabo.

On August 10, a 46-year-old Guaynabo businessman presented to a hospital emergency room with vomiting, ptosis, and blurred vision. No sensory abnormalities were noted. Initial treatment included intravenous fluids and observation, but as dysphagia and dyspnea developed, a neurologist was consulted, and the clinical diagnosis of botulism was made. He was admitted to a medical center in San Juan, where he was placed on ventilatory assistance. He received 4 vials of trivalent (ABE) botulinal antitoxin within 24 hours without noticeable improvement. He died of pneumonia on August 12.

Botulism – Continued

The Puerto Rico Department of Health was notified of the case on August 10 and began an investigation immediately. It was found that the patient's wife had prepared marinated fish on approximately July 26. She had stored it in 3 large, narrow-mouthed, glass jars, closed with screw caps, and left it to "cure" under a table in her husband's cafeteria-pizzeria business. When the investigators found the jars, a thick layer of oil had formed between the fish mixture and the air remaining in each jar. The jars were confiscated.

Attempts by investigators to find who else might have consumed the fish led to the identification of 2 more cases. The second patient was a 24-year-old restaurant employee who had developed weakness on August 4 after eating fish for 3 days. He had been hospitalized on August 8 with weakness, neck pain, and blurred vision. He never developed respiratory symptoms but had ptosis, shoulder and neck weakness, and dysphagia. By August 10, when the diagnosis of botulism was made, he was slightly improved and was not given antitoxin.

Another employee, a 16-year-old man, was absent from work on August 10. He was found at home in a remote rural community with severe weakness, ptosis, and dysarthria. He had eaten small amounts of fish on August 8 and 9. His therapy included ventilatory assistance and 4 vials of antitoxin. He developed pneumonia, has improved slowly, and is still hospitalized.

Two other employees and 3 additional people ate the fish between July 27 and August 8, but they remained well.

Serum was obtained from the patients on August 10, and type A botulinal toxin was present in patients 1 and 3. Stool, obtained only from the second patient, had no toxin. Culture results are pending. The contents of the 3 jars of marinated fish all had type A toxin; pH levels ranged from 3.9 to 4.9.

Reported by Norberto Arbona, MD, Neurology Institute, Hospital Metropolitano, Rio Piedras; H Negron Aponte, MD, Preventive Health Div, Puerto Rico Dept of Health; Anaerobe Section, Enterobacteriology Br, Bacteriology Div, Bur of Laboratories, Field Services Div, Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Marinated fish is a very common food in Puerto Rico. Perhaps the most significant factor in toxin production in this case was the use of closed, narrow-mouthed jars rather than the customary practice of marinating fish in wide, shallow trays. The thick oil layer between the fish and the air may have protected the fish from the acid marinade while preventing passage of oxygen into the solution. Although the pH level of the food approximated the 4.5 value generally regarded as inhibitory to germination of *Clostridium botulinum* spores (*1*), the variation in pH levels in the layers present may have allowed for nonprotective regions.

Although type E toxin is commonly associated with outbreaks traced to fish, type A toxin is also frequently responsible (*2,3*).

Prompt notification of the Puerto Rico Health Department made possible the identification of cases 2 and 3, confiscation of the implicated food, and control of the outbreak.

References

1. Ingram M, Robinson RH: A discussion of the literature on botulism in relation to acid foods. J Appl Bacteriol 14:73-84, 1951
2. Merson MH, Hughes JM, Dowell VR, et al: Current trends in botulism in the United States. JAMA 229:1305, 1974
3. CDC: Botulism in the United States, 1899-1973. Handbook for Epidemiologists, Clinicians, and Laboratory Workers. Issued June 1974, p 3

Nosocomial Meningococcemia — Wisconsin

In February 1978, a nurse developed meningococcemia 3 days after assisting in the emergency room evaluation of a patient with meningococcemia and meningitis.

The index patient was a 25-year-old man who was seen in the emergency room with fever, malaise, myalgia, and headache of 24 hours' duration. A diagnostic lumber puncture in the emergency room was unsuccessful because of the patient's lack of cooperation. He was taken to the postoperative recovery room, where he was given inhalation anesthesia and intubated; a lumbar puncture was then performed. The patient vomited several times in the emergency room and during intubation. Hospital personnel assisting with the anesthesia and lumbar puncture did not wear masks or follow other isolation precautions.

The cerebrospinal fluid (CSF) had a protein of 767 mg/dl, a glucose of 6 mg/dl, and a white blood cell count (WBC) of 20,700/mm^3 with 98% neutrophils. Gram stain of the smear showed multiple gram-negative diplococci that were both extracellular and intracellular. No pneumonia was seen on chest X ray. Cultures of the blood and spinal fluid grew *Neisseria meningitidis*, subsequently identified as a sulfonamide-susceptible group B strain. Following diagnosis of the patient's disease, approximately 6 hours after his admission to the emergency room, he was placed in isolation.

Twenty-four medical personnel (physicians, nurses, orderlies, and others) had contact

(Continued on page 363)

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

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

DISEASE	37th WEEK ENDING		MEDIAN	CUMULATIVE, FIRST 37 WEEKS		
	September 16, 1978	September 17, 1977*	1973-1977**	September 16, 1978	September 17, 1977*	MEDIAN 1973-1977**
Aseptic meningitis	263	185	171	3,465	3,025	2,364
Brucellosis	–	8	6	106	164	164
Chickenpox	227	227	264	122,629	160,768	145,185
Diphtheria	–	1	1	60	67	126
Encephalitis: Primary (arthropod-borne & unspec.)	48	47	47	607	674	951
Post-infectious	2	1	3	145	154	205
Hepatitis, Viral: Type B	264	394	232	10,391	11,740	8,172
Type A	473	599	714	20,155	21,851	24,770
Type unspecified	157	187		6,411	6,250	
Malaria	19	12	11	501	390	293
Measles (rubeola)	190	116	90	23,095	52,866	24,207
Meningococcal infections: Total	26	55	18	1,783	1,317	1,083
Civilian	25	55	18	1,762	1,308	1,058
Military	1	–	–	21	9	24
Mumps	59	103	270	13,234	16,051	44,550
Pertussis	40	58	---	1,386	1,098	---
Rubella (German measles)	140	64	78	15,251	18,612	14,826
Tetanus	–	3	1	59	53	61
Tuberculosis	569	537	588	21,386	21,383	22,264
Tularemia	1	1	2	82	113	109
Typhoid fever	9	11	11	318	257	281
Typhus fever, tick-borne (Rky. Mt. spotted)	22	27	27	837	966	693
Venereal diseases:						
Gonorrhea: Civilian	20,975	21,331	20,985	703,477	697,258	697,258
Military	488	495	495	17,938	19,235	21,295
Syphilis, primary & secondary: Civilian	446	402	410	14,822	14,592	17,096
Military	4	9	6	204	209	250
Rabies in animals	56	76	49	2,188	2,201	2,099

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1978		CUM. 1978
Anthrax	5	Poliomyelitis: Total (Ariz. 1)	2
Botulism	58	Paralytic	1
Congenital rubella syndrome†	22	Psittacosis†	79
Leprosy (Calif. 2)	112	Rabies in man	–
Leptospirosis	41	Trichinosis (Pa. 1)	42
Plague	6	Typhus fever, flea-borne (endemic, murine)† (Tex. 2)	32

*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 1975-1977.

†The following delayed reports will be reflected in next week's cumulative totals: Cong. rubella syndrome: Ups. NY +1; Psittacosis: Ark. –1; Typhus, murine: Tex. –1

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 16, 1978, and September 17, 1977 (37th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKEN-POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1978	1978	1978	1978	CUM. 1978	1978	1977*	1978	1978	1978	1978	1978	CUM. 1978
UNITED STATES	263	–	227	–	60	48	47	2	264	473	157	19	501
NEW ENGLAND	5	–	26	–	–	1	5	–	7	11	10	4	22
Maine†	1	–	10	–	–	–	–	–	1	2	2	–	1
N.H.†	–	–	–	–	–	–	–	–	–	1	–	–	4
Vt.	–	–	–	–	–	–	–	–	–	–	–	–	–
Mass.	4	–	12	–	–	1	4	–	–	2	8	–	3
R.I.	–	–	1	–	–	–	–	–	1	3	–	3	5
Conn.	–	–	3	–	–	–	1	–	5	3	–	1	9
MID. ATLANTIC	62	–	28	–	1	7	3	–	51	44	18	4	107
Upstate N.Y.†	15	–	15	–	–	2	–	–	6	13	5	1	16
N.Y. City	4	–	10	–	1	–	–	–	7	9	2	1	47
N.J.†	21	–	NN	–	–	3	–	–	14	7	10	2	20
Pa.	22	–	3	–	–	2	3	–	24	15	1	–	24
E.N. CENTRAL	56	–	84	–	–	20	21	2	38	70	24	–	26
Ohio	7	–	2	–	–	13	12	1	6	19	–	–	4
Ind.†	–	–	11	–	–	1	7	–	3	1	8	–	3
Ill.	2	–	11	–	–	–	–	–	10	25	3	–	4
Mich.	29	–	18	–	–	4	1	1	16	19	13	–	13
Wis.	18	–	42	–	–	2	1	–	3	6	–	–	2
W.N. CENTRAL	12	–	24	–	2	1	–	–	19	48	4	1	21
Minn.	–	–	–	–	–	–	–	–	5	18	–	–	4
Iowa	–	–	13	–	–	–	–	–	2	–	1	–	–
Mo.	8	–	–	–	1	1	–	–	5	19	2	–	7
N. Dak.	1	–	3	–	–	–	–	–	2	4	–	–	–
S. Dak.	2	–	–	–	–	–	–	–	3	3	1	–	1
Nebr.†	–	–	–	–	1	–	–	–	1	–	–	–	4
Kans.	1	–	8	–	–	–	–	–	1	4	–	1	5
S. ATLANTIC	44	–	33	–	–	12	6	–	37	58	22	2	91
Del.	–	–	1	–	–	–	–	–	5	–	–	–	1
Md.	16	–	–	–	–	1	1	–	–	1	–	–	21
D.C.	–	–	–	–	–	–	–	–	–	–	–	–	2
Va.†	14	–	7	–	–	4	1	–	6	5	9	–	19
W. Va.	3	–	7	–	–	6	1	–	1	2	–	–	1
N.C.	8	–	NN	–	–	1	1	–	6	8	2	1	8
S.C.	–	–	–	–	–	–	–	–	1	2	1	–	4
Ga.	–	–	1	–	1	–	–	–	9	15	–	1	7
Fla.	4	–	22	–	–	–	2	–	9	25	10	–	28
E.S. CENTRAL	25	–	4	–	–	4	6	–	18	32	2	–	4
Ky.	1	–	–	–	–	–	–	–	6	5	–	–	1
Tenn.	10	–	NN	–	–	1	6	–	8	7	2	–	1
Ala.	12	–	2	–	–	1	–	–	3	5	–	–	1
Miss.	2	–	2	–	–	2	–	–	1	15	–	–	1
W.S. CENTRAL	17	–	12	–	1	1	3	–	22	59	28	–	24
Ark.†	5	–	–	–	1	1	–	–	2	1	5	–	1
La.	2	–	NN	–	–	–	–	–	5	7	3	–	3
Okla.†	5	–	–	–	–	–	–	–	3	11	3	–	–
Tex.†	5	–	12	–	–	–	3	–	12	40	17	–	20
MOUNTAIN	5	–	7	–	3	–	1	–	12	32	11	–	4
Mont.	1	–	1	–	–	–	–	–	1	1	–	–	–
Idaho†	–	–	–	–	–	–	–	–	–	9	–	–	–
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	–
Colo.	–	–	6	–	2	–	–	–	6	12	5	–	1
N. Mex.	4	–	–	–	–	–	1	–	2	6	5	–	1
Ariz.†	–	–	NN	–	–	–	–	–	–	3	1	–	1
Utah	–	–	–	–	–	–	–	–	–	1	–	–	–
Nev.†	–	–	–	–	1	–	–	–	3	1	–	–	1
PACIFIC	37	–	9	–	53	2	2	–	60	119	38	8	202
Wash.	4	–	7	–	49	–	1	–	2	13	1	–	7
Oreg.	8	–	1	–	–	–	–	–	10	19	8	–	5
Calif.†	25	–	–	–	1	2	–	–	46	82	28	7	168
Alaska	–	–	1	–	3	–	1	–	–	1	–	–	4
Hawaii	–	–	–	–	–	–	–	–	2	4	1	1	18
Guam†	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
P.R.	–	–	?	–	–	–	–	–	1	2	?	–	4
V.I.	–	–	–	–	–	–	–	–	–	–	–	–	1

NN: Not notifiable.
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 cumulative totals: Asep. meng.: Ind. +4, Ark. +5; Bruc.: Ark. +1; Chickenpox: N.H. +1, Ups. N.Y. –30, Idaho –12, Calif. +2, Guam +1; Enceph. prim.: Ind. +6, Ark. + 2; Enceph. post: Nebr. –2, Ark. +1; Hep. B: Ups.N.Y. +4, N.J. +1, Ark. +22, Okla. –3, Idaho +1; Hep A: Ups. N.Y. –17, N.J. –1, Nebr. –2, Ark. +59, Okla. –6, Tex. +4, Idaho +1, Ariz. –2; Hep. unsp.: Me. +1, Ups N.Y. –15, Nebr. +2, Va. –2, Ark. –52, Okla. –5, Tex. –4, Idaho –2, Ariz. –17; Malaria: Ups. N.Y. +1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 16, 1978, and September 17, 1977 (37th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1978	CUM. 1978	CUM. 1977*	1978	CUM. 1978	CUM. 1977*	1978	CUM. 1978	1978	1978	CUM. 1978	CUM. 1978
UNITED STATES	190	23,095	52,866	26	1,783	1,317	59	13,234	40	140	15,251	59
NEW ENGLAND	3	1,970	2,487	–	90	55	1	723	–	4	740	1
Maine	–	1,314	170	–	8	3	–	486	–	–	149	–
N.H.	–	46	511	–	8	3	–	15	–	–	101	–
Vt.	–	25	293	–	2	6	–	5	–	–	27	1
Mass.†	–	250	623	–	28	17	–	86	–	3	219	–
R.I.	–	8	64	–	17	1	–	32	–	–	42	–
Conn.	3	327	826	–	27	25	1	99	–	1	202	–
MID. ATLANTIC	4	2,174	8,330	4	311	169	6	615	6	6	2,987	4
Upstate N.Y.†	–	1,399	3,797	1	104	40	1	204	3	3	522	1
N.Y. City	4	346	724	–	71	46	4	148	3	1	125	–
N.J.	–	74	195	2	56	37	–	132	–	1	1,601	–
Pa.†	–	355	3,614	1	80	46	1	131	–	1	739	3
E.N. CENTRAL	117	10,077	11,217	3	165	147	14	5,294	4	85	7,058	2
Ohio	–	479	1,849	2	66	54	1	928	–	4	1,362	1
Ind.	3	191	4,322	–	31	9	2	310	–	6	584	1
Ill.	–	631	1,702	–	7	35	1	1,657	–	–	423	–
Mich.	110	7,306	932	1	50	36	4	1,352	2	70	3,156	–
Wis.	4	1,470	2,412	–	11	13	6	1,047	2	5	1,533	–
W.N. CENTRAL	2	383	9,444	–	56	57	6	1,907	5	2	658	6
Minn.	–	34	2,620	–	14	19	–	20	1	–	128	1
Iowa	–	53	4,270	–	5	8	–	121	–	–	53	–
Mo.	–	11	1,042	–	23	18	–	1,155	–	1	98	–
N. Dak.	2	193	23	–	3	1	1	15	1	–	81	–
S. Dak.	–	–	67	–	2	4	1	7	3	–	111	1
Nebr.†	–	5	214	–	–	2	1	24	–	–	34	–
Kans.	–	87	1,208	–	9	5	3	565	–	1	153	4
S. ATLANTIC	38	4,949	4,583	10	451	299	6	761	10	24	1,040	14
Del.	–	6	22	1	16	21	–	55	–	–	35	–
Md.	–	51	371	–	28	18	1	67	–	–	7	2
D.C.	–	–	14	–	1	–	–	2	–	–	1	–
Va.	4	2,824	2,719	–	53	25	1	135	–	–	242	1
W. Va.	7	1,041	241	1	10	9	2	168	3	2	340	–
N.C.†	1	117	63	1	89	62	1	67	–	–	179	3
S.C.†	–	197	152	3	27	29	–	17	1	–	29	1
Ga.	11	28	767	–	47	47	1	68	4	19	24	–
Fla.	15	685	235	4	180	88	–	182	2	3	184	7
E.S. CENTRAL	5	1,400	1,977	3	144	135	6	1,124	2	3	502	3
Ky.	1	119	1,198	–	28	26	–	182	–	–	129	2
Tenn.	3	966	673	1	35	33	2	450	1	1	201	–
Ala.	–	89	78	1	44	50	4	415	–	–	22	–
Miss.	1	226	38	1	37	26	–	77	1	2	150	1
W.S. CENTRAL	12	1,054	2,081	1	276	257	10	1,672	2	5	920	15
Ark.†	–	18	29	–	22	13	1	587	–	–	58	1
La.	–	343	74	–	118	120	2	65	–	2	485	1
Okla.†	1	14	57	–	16	10	–	4	–	1	12	4
Tex.	11	679	1,921	1	120	114	7	1,016	2	2	365	9
MOUNTAIN	–	247	2,515	2	40	31	2	401	1	1	200	1
Mont.	–	105	1,162	–	2	2	–	141	1	1	18	–
Idaho	–	1	161	–	4	4	–	20	–	–	2	–
Wyo.	–	–	19	–	–	2	–	1	–	–	–	–
Colo.	–	29	502	–	3	1	1	89	–	–	47	–
N. Mex.	–	–	256	–	7	8	–	16	–	–	3	–
Ariz.†	–	49	304	2	15	10	–	12	–	–	92	–
Utah	–	44	18	–	5	3	–	116	–	–	27	1
Nev.	–	19	93	–	4	1	1	6	–	–	11	–
PACIFIC	9	841	10,232	3	250	167	8	737	10	10	1,146	13
Wash.	8	165	535	–	40	19	–	170	–	1	105	1
Oreg.	–	148	366	–	27	17	1	87	5	2	115	–
Calif.	1	519	9,236	3	173	101	7	446	3	4	909	12
Alaska	–	–	60	–	6	28	–	9	2	3	7	–
Hawaii	–	9	35	–	4	2	–	26	–	–	10	–
Guam†	NA	26	8	–	–	1	NA	37	NA	NA	4	1
P.R.†	6	245	944	–	6	1	31	1,209	–	–	15	5
V.I.	–	6	14	–	1	–	–	1	–	–	1	–

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 cumulative totals: Measles: Mass. –1, Ups. N.Y. –6, Ark. –2, Okla. –1, Ariz. +1, Guam –2; Men. inf.: Ups. N.Y. –9; Mumps: Ups. N.Y. –6, Nebr. –1, Ark. +12, Ariz. +2; Pertussis: Ups. N.Y. +5, N.C. –1, S.C. –1, Ark. +3, Ariz. +1, P.R. –1; Rubella: Ups. N.Y. –2, Pa. –1, N.C. +1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 16, 1978, and September 17, 1977 (37th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1978	CUM. 1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	CUM. 1977*	1978	CUM. 1978	CUM. 1977*	CUM. 1978
UNITED STATES	569	21,386	82	9	318	22	837	20,975	703,477	697,258	446	14,822	14,592	2,188
NEW ENGLAND	17	697	-	1	41	-	12	622	18,381	18,647	11	419	587	81
Maine†	3	52	-	-	-	-	-	80	1,442	1,387	-	7	18	66
N.H.	-	13	-	-	5	-	-	28	850	742	-	5	3	2
Vt.†	-	29	-	-	1	-	-	18	437	479	-	3	6	2
Mass.	10	406	-	1	24	-	4	292	8,074	7,910	6	254	415	6
R.I.	-	48	-	-	4	-	1	38	1,312	1,505	1	17	8	-
Conn.	4	149	-	-	7	-	7	166	6,266	6,624	4	133	137	5
MID. ATLANTIC	100	3,661	5	4	45	2	49	2,423	75,865	71,814	18	1,919	2,026	74
Upstate N.Y.†	16	550	4	1	8	-	27	475	12,926	12,355	5	147	194	51
N.Y. City	23	1,316	1	2	29	1	3	1,149	28,972	28,167	NA	1,320	1,274	-
N.J.	18	876	-	1	5	1	11	177	13,964	12,541	9	234	264	11
Pa.	38	919	-	-	3	-	8	623	20,003	18,751	4	218	294	12
E.N. CENTRAL	107	3,319	1	1	23	1	29	3,562	106,972	110,107	48	1,633	1,554	126
Ohio	21	605	1	-	6	1	19	1,046	27,963	28,873	10	301	366	11
Ind.†	29	387	-	-	-	-	1	331	11,148	10,031	10	118	125	10
Ill.	21	1,238	-	-	6	-	9	1,061	33,458	35,982	23	1,016	800	41
Mich.†	31	940	-	1	11	-	-	827	24,759	25,284	4	150	181	7
Wis.	5	149	-	-	-	-	-	297	9,644	9,937	1	48	82	57
W.N. CENTRAL	15	690	17	-	13	2	32	1,342	35,675	36,862	14	338	322	450
Minn.	3	127	-	-	5	-	-	327	6,150	6,649	3	133	95	137
Iowa	4	79	-	-	2	-	-	140	3,877	4,278	1	36	30	95
Mo.†	1	285	15	-	4	-	18	671	15,676	15,313	7	102	125	53
N. Dak.	-	31	-	-	-	-	1	21	659	704	-	2	3	77
S. Dak.	2	59	-	-	-	-	2	35	1,245	1,055	1	3	6	58
Nebr.†	-	16	-	-	-	2	7	82	2,620	3,165	-	11	25	6
Kans.†	5	93	2	-	2	-	4	66	5,448	5,698	2	51	38	24
S. ATLANTIC	106	4,574	8	1	46	10	455	5,587	172,029	172,806	115	3,927	4,078	321
Del.	1	38	-	-	3	-	5	66	2,432	2,393	-	6	18	3
Md.†	15	688	5	-	9	1	101	690	21,713	21,459	13	296	262	-
D.C.	3	236	-	-	1	-	-	324	11,511	11,227	8	303	418	-
Va.†	8	482	3	-	5	2	96	649	16,497	18,126	19	338	402	10
W. Va.†	7	170	-	-	3	-	10	75	2,363	2,323	-	15	3	8
N.C.†	20	707	-	-	2	6	157	958	25,010	25,691	13	409	569	8
S.C.	3	400	-	1	5	-	50	383	16,749	16,258	6	199	176	75
Ga.	14	638	-	-	3	1	36	843	32,977	33,575	34	978	891	206
Fla.†	35	1,215	-	-	15	-	-	1,599	42,777	41,754	22	1,383	1,339	11
E.S. CENTRAL	82	2,028	6	-	7	5	159	1,321	59,935	62,074	34	771	525	109
Ky.†	9	447	2	-	2	-	39	273	7,769	8,247	2	97	65	58
Tenn.	32	634	3	-	3	5	101	368	22,197	25,155	21	268	158	23
Ala.	25	497	1	-	1	-	11	352	17,042	16,869	8	133	113	28
Miss.†	16	450	-	-	1	-	8	328	12,927	11,803	3	273	189	-
W.S. CENTRAL	64	2,476	38	-	34	1	88	2,449	95,581	87,057	79	2,382	2,071	679
Ark.†	7	275	25	-	5	-	14	216	7,052	6,951	4	54	51	110
La.	7	422	6	-	3	-	1	268	15,462	12,153	5	509	495	12
Okla.†	8	247	4	-	2	-	51	284	9,038	8,374	2	68	58	147
Tex.	42	1,532	3	-	24	1	22	1,681	64,029	59,579	68	1,751	1,467	410
MOUNTAIN	11	614	5	-	18	1	9	865	26,616	28,263	9	308	311	68
Mont.	-	43	-	-	2	-	2	62	1,506	1,466	-	8	4	12
Idaho	-	24	2	-	5	1	3	44	1,060	1,322	2	11	10	-
Wyo.†	-	14	2	-	-	-	1	27	636	687	-	10	2	-
Colo.	3	70	-	-	4	-	2	200	7,380	7,453	7	99	96	25
N. Mex.†	5	96	-	-	2	-	-	97	3,739	4,097	-	66	67	13
Ariz.†	3	284	-	-	3	-	-	259	6,927	7,907	-	71	114	12
Utah	-	30	1	-	1	-	-	57	1,468	1,638	-	11	6	6
Nev.	-	53	-	-	1	-	1	119	3,900	3,693	-	32	12	-
PACIFIC	67	3,327	2	2	91	-	4	2,804	112,423	109,628	118	3,125	3,118	280
Wash.	NA	221	-	-	6	-	1	282	9,055	8,281	NA	151	179	1
Oreg.	1	133	-	-	1	-	2	206	7,778	7,478	6	108	92	6
Calif.	59	2,529	2	2	77	-	1	2,146	90,076	88,000	112	2,830	2,800	265
Alaska	-	57	-	-	-	-	-	110	3,484	3,551	-	8	19	8
Hawaii	7	387	-	-	7	-	-	60	2,030	2,318	-	28	28	-
Guam†	NA	41	-	NA	-	NA	-	NA	141	157	NA	-	2	-
P.R.	-	273	-	-	2	-	-	31	1,590	2,298	6	339	395	29
V.I.	-	4	-	-	2	-	-	-	144	152	1	14	7	-

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 cumulative totals: TB: Ups. N.Y. –7, Mich. –10, Kans. –1, Md. +8, N.C. –1, Fla. –1, Ky. –1, Ariz. –4; Tularemia: Ark. +5; T. fever: Ups. N.Y. –2, Ind. +1; RMSF: Va. –1, Ark. –2; GC: Vt. –1 civ., Ups. N.Y. –243 civ., Mo. –22 civ., Nebr. –1 civ. +1 mil., Miss. –44 civ., Okla. +40 mil, Ariz. –71 civ., Guam +7 civ.; Syphilis: Ups. N.Y. –8, Wyo. –2, N. Mex. –1, Ariz. –3; An. rabies: Me. +1, Ind. +1, W. Va. +1.

TABLE IV. Deaths in 121 U.S. cities,* week ending September 16, 1978 (37th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	630	412	144	39	16	27
Boston, Mass.	199	113	52	15	10	7
Bridgeport, Conn.	33	25	5	3	–	1
Cambridge, Mass.	30	27	3	–	–	1
Fall River, Mass.	31	23	6	2	–	–
Hartford, Conn.	55	28	15	8	2	–
Lowell, Mass.	11	6	3	–	–	2
Lynn, Mass.	18	15	3	–	–	2
New Bedford, Mass.	23	15	7	1	–	1
New Haven, Conn.	48	38	6	1	1	–
Providence, R.I.	70	45	18	3	1	6
Somerville, Mass.	10	7	1	2	–	–
Springfield, Mass.	38	28	9	1	–	2
Waterbury, Conn.	18	12	6	–	–	1
Worcester, Mass.	46	30	10	3	2	4
MID. ATLANTIC	2,501	1,554	633	157	80	92
Albany, N.Y.	41	25	11	1	3	–
Allentown, Pa.	15	10	3	2	–	–
Buffalo, N.Y.	122	79	29	6	5	8
Camden, N.J.	32	19	6	2	–	–
Elizabeth, N.J.	21	11	10	–	–	–
Erie, Pa.	34	23	9	1	1	4
Jersey City, N.J.	68	35	25	3	2	1
Newark, N.J.	45	13	17	10	2	5
N.Y. City, N.Y.	1,292	823	307	92	41	49
Paterson, N.J.	35	18	12	4	1	2
Philadelphia, Pa.	400	230	110	24	17	6
Pittsburgh, Pa.	74	39	24	5	3	3
Reading, Pa.	38	28	9	–	1	–
Rochester, N.Y.	107	80	17	2	2	10
Schenectady, N.Y.	14	9	2	3	–	–
Scranton, Pa.	20	15	5	–	–	2
Syracuse, N.Y.	74	48	18	2	2	1
Trenton, N.J.	28	20	7	–	–	–
Utica, N.Y.	16	11	5	–	–	1
Yonkers, N.Y.	25	18	7	–	–	–
E.N. CENTRAL	2,266	1,307	609	158	93	42
Akron, Ohio	64	33	20	3	4	–
Canton, Ohio	35	24	9	–	–	2
Chicago, Ill.	599	337	159	51	18	7
Cincinnati, Ohio	159	96	40	10	8	3
Cleveland, Ohio	152	81	42	10	13	2
Columbus, Ohio	87	50	22	8	5	2
Dayton, Ohio	106	55	38	5	2	1
Detroit, Mich.	258	128	71	29	11	5
Evansville, Ind.	54	35	10	4	1	3
Fort Wayne, Ind.	60	37	16	4	–	3
Gary, Ind.	19	7	9	1	–	–
Grand Rapids, Mich.	62	42	9	4	5	5
Indianapolis, Ind.	151	80	48	12	7	–
Madison, Wis.	42	25	7	2	4	5
Milwaukee, Wis.	134	98	30	3	2	3
Peoria, Ill.	48	29	15	1	1	–
Rockford, Ill.	32	15	10	1	4	–
South Bend, Ind.	42	24	11	4	–	1
Toledo, Ohio	102	65	27	3	5	–
Youngstown, Ohio	60	36	16	3	3	–
W.N. CENTRAL	772	488	167	39	37	26
Des Moines, Iowa	71	42	18	6	2	–
Duluth, Minn.	22	14	7	–	–	1
Kansas City, Kans.	53	27	15	2	3	2
Kansas City, Mo.	129	81	29	6	9	4
Lincoln, Nebr.	27	20	7	–	–	1
Minneapolis, Minn.	92	58	15	8	7	4
Omaha, Nebr.	84	56	15	5	4	3
St. Louis, Mo.	180	121	37	8	7	7
St. Paul, Minn.	71	48	13	1	4	2
Wichita, Kans.	43	21	11	3	1	2

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	1,302	790	326	93	42	49
Atlanta, Ga.	138	83	31	16	6	–
Baltimore, Md.	245	139	58	25	7	3
Charlotte, N.C.	57	27	19	7	3	1
Jacksonville, Fla.	91	52	25	3	5	3
Miami, Fla.	89	58	24	3	2	4
Norfolk, Va.	49	31	13	2	2	1
Richmond, Va.	92	56	28	2	4	14
Savannah, Ga.	37	23	8	3	1	4
St. Petersburg, Fla.	94	84	4	2	2	6
Tampa, Fla.	66	41	18	5	1	2
Washington, D.C.	286	158	86	23	6	11
Wilmington, Del.	58	38	12	2	3	–
E.S. CENTRAL	699	404	190	52	20	30
Birmingham, Ala.	115	60	31	14	4	2
Chattanooga, Tenn.	59	34	19	2	1	–
Knoxville, Tenn.	46	34	7	3	–	–
Louisville, Ky.	117	68	31	6	5	9
Memphis, Tenn.	160	85	51	15	4	5
Mobile, Ala.	56	35	12	4	1	2
Montgomery, Ala.	24	19	5	–	–	4
Nashville, Tenn.	122	69	34	8	5	8
W.S. CENTRAL	1,210	667	304	99	56	23
Austin, Tex.	41	25	9	5	–	3
Baton Rouge, La.	17	6	7	2	–	1
Corpus Christi, Tex.	33	20	8	2	2	–
Dallas, Tex.	219	109	60	20	13	–
El Paso, Tex.	70	39	20	5	4	2
Fort Worth, Tex.	101	69	17	7	3	4
Houston, Tex.	267	133	62	32	15	2
Little Rock, Ark.	65	39	17	4	1	3
New Orleans, La.	83	48	23	4	5	–
San Antonio, Tex.	160	87	43	10	8	–
Shreveport, La.	71	34	20	4	5	2
Tulsa, Okla.	83	58	18	4	–	6
MOUNTAIN	530	301	126	43	25	12
Albuquerque, N.Mex.	61	31	15	8	2	2
Colo. Springs, Colo.	26	13	9	1	–	2
Denver, Colo.	129	73	33	10	1	4
Las Vegas, Nev.	43	23	12	5	2	–
Ogden, Utah	18	10	6	–	–	2
Phoenix, Ariz.	132	77	27	12	10	1
Pueblo, Colo.	22	10	6	1	2	–
Salt Lake City, Utah	38	17	9	3	7	–
Tucson, Ariz.	61	47	9	3	1	1
PACIFIC	1,802	1,121	414	139	57	35
Berkeley, Calif.	15	12	2	–	–	–
Fresno, Calif.	83	49	14	10	6	7
Glendale, Calif.	32	28	2	1	–	1
Honolulu, Hawaii	61	36	16	4	5	–
Long Beach, Calif.	64	35	19	5	1	–
Los Angeles, Calif.	615	396	128	48	17	15
Oakland, Calif.	48	31	10	4	2	–
Pasadena, Calif.	36	27	6	–	2	–
Portland, Oreg.	121	75	27	7	4	–
Sacramento, Calif.	54	33	15	3	2	–
San Diego, Calif.	135	65	50	12	4	2
San Francisco, Calif.	195	114	51	21	6	1
San Jose, Calif.	77	47	19	6	–	3
Seattle, Wash.	175	111	40	9	6	3
Spokane, Wash.	52	33	11	4	1	2
Tacoma, Wash.	39	29	4	5	1	1
TOTAL	11,712	7,044	2,913	819	426	336
Expected Number	10,793	6,521	2,771	790	428	371

*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

Meningococcemia – Continued

with the patient before he was placed in isolation. These persons were informed of their possible exposure to meningococcal disease. Those with intimate contact with the patient were advised to take rifampin prophylactically for 2 days; 3 nurses and 2 orderlies received prophylaxis.

Three days after the index patient was admitted to the hospital, a 39-year-old nurse developed headache, fever, and malaise. She had assisted with the intubation and suctioning of nasopharyngeal secretions from the index case at the time of his diagnostic lumbar puncture. Two days after onset of her symptoms she presented for examination and was noted to have scattered petechial lesions on her arms and legs. Her WBC was 17,400/mm^3 with 2% bands and 87% neutrophils; her platelet count was normal. Lumbar puncture showed normal CSF; blood cultures were not obtained. Over the next several days she developed a more severe headache, more petechiae, and joint pains. Six days after her initial symptoms she was admitted to the hospital and isolated with a presumptive diagnosis of meningococcemia. A repeat lumbar puncture was performed which revealed a WBC of 25/mm^3, mostly neutrophils, normal glucose and protein concentrations, and negative Gram stain and culture. A blood culture, however, grew group B *N. meningitidis* susceptible to sulfonamides.

The isolates of *N. meningitidis* from both the index patient and the nurse were not typable with available antisera to protein subtype antigens (*1*). However, protein extracts of the 2 strains had similar migration patterns on SDS polyacrilamide gel.

On careful questioning the nurse recalled that she had exposure to the nasopharyngeal secretions from the index patient, but following this exposure she had not received antibiotic prophylaxis. She had no other known contacts with persons with meningococcal disease or colonization, and at the time of these 2 cases no other cases of meningococcal disease were occurring in the community.

Reported by Bur of Biologics, Food and Drug Administration; Hospital Infections Br and Special Pathogens Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Nosocomial transmission of *N. meningitidis* to hospital personnel caring for a patient with meningococcemia or meningitis is rare and has been reported to occur only with extensive contact with the infected individual (*2*). The risk of transmission of infection by patients with meningococcal pneumonia might be greater, however (*3*). In this outbreak, the epidemiologic evidence suggests that the disease was nosocomially transmitted to a person who had intimate contact with respiratory secretions from the index patient; this is supported by the laboratory finding of a common migration pattern of protein extracts of strains of *N. meningitidis* isolated from both patients.

To minimize the risk of nosocomial transmission of meningococcal infection to hospital personnel, a patient who has disease compatible with meningococcal infection should be placed in respiratory isolation when the diagnosis is first suspected. Personnel who have had intimate contact with the patient's respiratory tract secretions should be provided rifampin as chemoprophylaxis or a sulfonamide if the strain of *N. meningitidis* is known to be sensitive to sulfonamides (*4*).

References

1. Frasch CE, Chapman SS: Classification of *Neisseria meningitidis* group B into distinct serotypes. III. Application of a new bacteriocidal-inhibition technique to distribution of serotypes among cases and carriers. J Infect Dis 127:149-154, 1973

2. Artenstein MS, Ellis RE: The risk of exposure to a patient with meningococcal meningitis. Milit Med 133:474-477, 1968

3. MMWR 27:147, 1978

4. Jacobson JA, Fraser DW: A simplified approach to meningococcal disease prophylaxis. JAMA 236:1053-1054, 1976

International Notes

Follow-up on Smallpox — England

The mother of the English smallpox patient (*1*) has been confirmed by culture as having smallpox. She is in quarantine in a smallpox hospital with mild "modified" type disease. She was vaccinated on August 25, not August 14, as previously reported (*1*), and was prophylactically treated with vaccinia immune globulin and methisazone. Her 1 contact, an ambulance driver, is under surveillance.

Reported by International Health Div, Dept of Health and Social Services, London; Bur of Smallpox Eradication, CDC.

Reference

1. MMWR 27:346, 1978

Quarantine Measures

The following changes should be made in the *Supplement — Health Information for International Travel*, MMWR, Vol. 26, August 1977:

AUSTRALIA

Smallpox—Insert: A certificate is required from travelers who within the preceding 14 days have been in Birmingham, England.

HONG KONG

Smallpox—Insert: A certificate is required from travelers arriving from the United Kingdom.

JAPAN

Smallpox—Insert: A certificate is required from travelers arriving from the United Kingdom.

MALTA

Smallpox—Insert: A certificate is required from travelers who within the preceding 14 days have been in Birmingham, England.

MAURITIUS

Smallpox—Insert: A certificate is required from travelers arriving from the United Kingdom.

MOROCCO

Smallpox—Insert: A certificate is required from travelers arriving from the United Kingdom.

SINGAPORE

Smallpox—Insert: A certificate is required from travelers arriving from the United Kingdom.

TURKEY

Smallpox—Insert: A certificate is required from travelers who within the preceding 14 days have been in Birmingham, England.

Epidemiologic Notes and Reports

Follow-up on Legionnaires' Disease — New York, Tennessee

To date, 8 confirmed and 136 suspected cases of Legionnaires' disease have been identified in workers in the New York City garment district since August 1, 1978. Data from survey control groups are under analysis.

In Tennessee, 7 confirmed and 3 presumptive cases of Legionnaires' disease have been identified to date by the laboratory of Baptist Memorial Hospital in Memphis and the Tennessee State Public Health Laboratory. Intensive surveillance efforts have revealed no new suspected cases with onset after September 12.

Reported by Health and Hospitals Corporation of New York; JS Marr, MD, New York City Epidemiologist, New York City Dept of Health; R Rendtorff, MD, Baptist Memorial Hospital, Memphis; J Levy, MD, G Lovejoy, MD, Memphis-Shelby County Health Dept; RH Hutcheson Jr, MD, State Epidemiologist, Tennessee Dept of Public Health; Field Services Div, Epidemiologic Investigations Laboratory Br, Hospital Infections Br, Special Pathogens Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Follow-up on *Vibrio cholerae* Infection — Louisiana

Three additional presumptive cholera infections—1 asymptomatic—have been identified in Louisiana, where a previous confirmed case has been described this month (*1*). The new cases were reported from Abbeville, the site of the confirmed case, and from Kaplan, a town 10 miles away. This is the first cluster of indigenous cases of cholera in the United States since 1911 (*2*).

One presumptive case is a 69-year-old Kaplan man who became ill with mild diarrhea on September 14 and severe diarrhea requiring hospitalization on September 16. The second presumptive symptomatic case is a 52-year-old woman who became ill with severe watery diarrhea on September 15 and was hospitalized 2 days later. Both have been successfully treated with intravenous fluids and antibiotics. Stool cultures from each patient yielded organisms, compatible with *Vibrio cholerae*, which agglutinate in Inaba antiserum. The asymptomatic case, the child of the 52-year-old woman, is culture-positive for *V. cholerae*, serotype Inaba. Biochemical confirmation on these 3 cases is pending.

Epidemiologic investigation has revealed no contact between the 3 symptomatic cases. The presumptive Abbeville patient obtains her drinking water from the municipal water system, in contrast to the earlier case, who had a private well (*1*).

Environmental investigation has resulted in the isolation of presumptive *V. cholerae* organisms again from the original sewer site (*2*) and from another site located approximately 3 blocks from the home of the suspected case. Presumptive cholera isolates have also been obtained from the sewage system of Kaplan.

The Morbidity and Mortality Weekly Report, circulation 78,750, 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.

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Vibrio cholerae — Continued

Intensive surveillance of diarrheal disease is continuing in these 2 communities and adjacent towns in an effort to identify additional cases. Environmental studies are continuing in an attempt to identify the vehicle of transmission and the source of the isolates. Studies are in progress to determine the frequency of isolation of *V. cholerae* organisms from other municipal sewage systems in this area.

Residents of the area have been advised to report the occurrence of diarrheal illness promptly to their physicians. No additional control measures appear indicated at this time.

Reported by HB Bradford, PhD, Director, Bur of Laboratories, CT Caraway, DVM, State Epidemiologist, Louisiana Dept of Health and Human Resources; Enteric Diseases Br and Epidemiologic Investigations Laboratory Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

References

1. MMWR 27:341, 1978
2. MMWR 27:351, 1978

Erratum

p 352 In the article, "Tularemia — Massachusetts," the following name was inadvertently not mentioned in the credits in full: DR Kimloch, MD, Massachusetts Department of Health.

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