

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports

An Outbreak of Bacteremia and Pyrogenic Reactions in a Dialysis Unit — Pennsylvania

On March 18, 1978, 3 patients undergoing hemodialysis at a university hospital in Pennsylvania became ill. All 3, who had previously been well, developed fever and chills during dialysis. One patient became hypotensive. Dialysis was discontinued, and all 3 were admitted for evaluation. *Pseudomonas aeruginosa* was isolated from blood cultures from 2 patients; *Klebsiella pneumoniae* was also isolated from one of these patients' blood. Blood cultures from the third patient were negative. On March 20, 2 more patients undergoing hemodialysis became ill with fever and chills and required hospitalization. Blood cultures from these patients were negative.

The outpatient hemodialysis facility is located in a separate building and consists of a large room containing 10 units and a separate 2-unit area for patients positive for hepatitis B surface antigen. Each unit contains a single-pass dialysis machine equipped with a disposable coil dialyzer. The dialyzers are not reused. An investigation revealed that a sodium hypochlorite pump attached to the dialysis mixing console had not been functioning for the previous 2 weeks because a replacement part had not arrived. Normally, a solution of sodium hypochlorite was pumped through the entire system between each shift. Alkaline glutaraldehyde solutions were also used on a variable schedule. During the 2 weeks before the outbreak, individual units were disinfected daily with sodium hypochlorite. However, without the pump the distribution system and pipes leading to the dialysis machine could not be disinfected.

Cultures taken in the unit grew *P. aeruginosa* in all samples of water and dialysate; heavy growth was present in the storage tank from which mixed dialysate was distributed to individual units and in the tubing leading to the dialysis machines. *K. pneumoniae* and *Enterobacter agglomerans* were also cultured from additional sites in the system. Bacteria were recovered from the inlet and outlet blood tubing as well as from the blood side of the dialyzer used for one of the ill patients.

Following the repair of the sodium hypochlorite pump and thorough disinfection of the unit, there have been no further cases of febrile illness associated with dialysis.

Reported by Hospital Infections Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Chronic hemodialysis as a treatment for patients suffering from end-stage renal disease has been used increasingly in the United States since the early 1960s. In 1978, the total number of patients undergoing chronic hemodialysis in private or hospital-based centers was 37,000—more than triple the 1973 figure. It is estimated that by 1980 there will be 45,000 such patients. Technological advances in hemodialysis systems have been significant in the past 10-15 years; they have allowed chronic hemodialysis to become a common procedure and accounted for a dramatic improvement in the clinical state of the art.

Bacteremia — Continued

However, a significant number of microbiologic parameters were not taken into consideration in the design of many hemodialysis systems, and, as a result, there are many situations in which certain types of bacteria, notably, gram-negative water bacteria, can persist and actively multiply in water associated with hemodialysis equipment. This can result in the production of massive levels of gram-negative bacteria in dialysis fluid—levels which have been associated with outbreaks of pyrogenic (fever-producing) reactions and septicemia among patients undergoing hemodialysis. These bacteria contain lipopolysaccharide or endotoxin, which can produce a pyrogenic response if introduced into the bloodstream. CDC has investigated a number of outbreaks of pyrogenic reactions in the United States, some of which were complicated by septicemia, among patients in hemodialysis centers.

These outbreaks fell into 2 categories. The most common type involved pyrogenic reactions that could be directly associated with high levels of gram-negative bacteria in dialysis fluid. Inadequate disinfection of water-treatment devices and fluid-distribution systems and improper design and operation of these systems were the usual causes of excessive bacterial contamination. In 1 such outbreak, in which 2 patients died from septicemia, it was shown that the same pyocin type of *P. aeruginosa* that occurred in high numbers in dialysate was isolated from the blood of patients who were dialyzing. During the same outbreak, bacteriologic assays of dialysate showed that there was a relationship between the level of bacterial contamination and the attack rate of pyrogenic reactions (1). Once the bacteriologic reservoir was identified and eliminated by proper disinfection, modification, or operation of the systems involved, the outbreaks abruptly ceased (2,3). The second general type of outbreak is exemplified by an investigation which traced the source to a high level of bacterial endotoxin in a community water supply. This outbreak occurred in the absence of a large reservoir of bacteria in the center and could have been controlled only by the use of a water-treatment system that removed endotoxin from water such as reverse osmosis or ultrafiltration (4).

The manner in which microorganisms reach the blood stream to cause bacteremia is not entirely clear. It has been reported that bacteria can pass through the dialyzer membrane (5). Another possibility is that the blood compartment of the dialyzer may be contaminated by nonsterile saline used to prime dialyzers prior to connection of the patient. It is common practice to heparinize sterile saline before use. Several saline containers may be heparinized with the same needle and syringe using heparin from multiple-dose vials that are re-entered several times. This procedure often takes place in the dialysis center environment in which hands and surfaces may be heavily contaminated with gram-negative bacteria. Strict application of aseptic technique and other precautions associated with the use of parenteral fluids can, of course, minimize this hazard.

The most probable explanation of the outbreak reported here is that the gram-negative bacteria were able to grow within the water and dialysate distribution systems because of the cessation of routine sodium hypochlorite disinfection. Sodium hypochlorite is used as a disinfectant for hemodialysis systems by a large number of hemodialysis centers in the United States. However, it is corrosive, and consequently it is usually rinsed from the system after a minimum exposure time. Unfortunately, this practice commonly results in negation of the disinfection procedure because water used to rinse the disinfectant out of the system is not sterile and usually contains gram-negative bacteria. In recirculating dialysis machines—the most difficult type to disinfect—gram-negative bacteria present in the rinse water can multiply immediately and, if permitted to stand overnight, can significantly contaminate the system. This level of bacterial contamination will increase by 3-5 logs during dialysis.

Bacteremia - Continued

The optimum strategy for the disinfection of dialysis systems may be to use aqueous formaldehyde (1.5-2.5%) and to allow it to remain in the system for prolonged periods of time when the system is not operational such as for a night or weekend. Although other high-level disinfectants such as alkaline glutaraldehyde could be used, the volume of these systems is so large that their use would be very expensive. The strategies for disinfecting different types of hemodialysis systems as well as bacteriologic guidelines for hemodialysis systems have been published (2,6) and are available from the Hepatitis Laboratories Division, CDC, Phoenix, Arizona 85021.

References

1. Favero MS, Petersen NJ, Boyer KM, Carson LA, Bond WW: Microbial contamination of renal dialysis systems and associated health risks. *Trans Am Soc Artif Intern Organs* 20A: 175-183, 1974
2. Favero MS, Petersen NJ, Carson LA, Bond WW, Hindman SH: Gram-negative water bacteria in hemodialysis systems. *Health Lab Sci* 12:321-334, 1975
3. Petersen NJ, Boyer KM, Carson LA, Favero MS: Pyrogenic reactions from inadequate disinfection of a dialysis fluid distribution system. *Dialysis Transplantation* 7:52-60, 1978
4. Hindman SH, Favero MS, Carson LA, Petersen NJ, Schenberger LB, Solano JT: Pyrogenic reactions during hemodialysis caused by extramural endotoxin. *Lancet* ii:1-7, 1975
5. Jans H, Bretlau P, Nielsen B: Bacteriological contamination of dialyzers. *Nephron* 20:10-17, 1978
6. Favero MS, Petersen NJ: Microbiologic guidelines for hemodialysis systems. *Dialysis Transplantation* 6:34-36, 1977

Deaths from Asphyxia Among Fishermen

On July 19, 1978, 2 crewmen of a shrimp fishing vessel died and the captain was hospitalized following toxic exposure to the atmosphere of the ship's hold. The hold was refrigerated with ice and contained approximately 4,000 pounds of shrimp caught in the previous 11 days at sea. Both crewmen had previously been involved in dipping the shrimp into a sodium bisulfite solution used routinely to control "black-spot," a discoloration associated with decay (1). When the first crewman descended into the hold to pack the freshly-caught shrimp on ice, he collapsed immediately into coma. The captain went into the hold to resuscitate the first crewman and also fell unconscious. The second crewman followed the first 2 men into the hold and also collapsed. The captain regained consciousness long enough to climb out of the hold and notify the Coast Guard; shortly thereafter he was evacuated by helicopter and brought to the hospital.

At autopsy, no specific gross pathologic changes were noted. The bodies and blood samples smelled distinctly of sulfur. Sulfhemoglobin determinations performed on frozen blood specimens showed levels of 6% and 12%*; neither carboxyhemoglobin nor methemoglobin was present.

Preliminary inquiries by the Coast Guard and the Louisiana Department of Health and Human Resources have identified 4 similar episodes since 1970 that resulted in 9 deaths and 2 hospitalizations. Two of these episodes involved shrimpers exposed to the sodium bisulfite dip. Four other deaths in ships' holds occurred in 2 separate incidents involving government inspectors.

State Epidemiologists in Texas, Mississippi, Florida, and Alabama are conducting a detailed search of vital records and follow-up of anecdotal reports for other deaths among fishermen attributed to asphyxia. A survey by the National Institute on Occupational Safety and Health (NIOSH) of the gas content of the holds of fishing vessels and of the concentration of the gaseous biproducts of "shrimp dip" is currently underway.

Reported by R Ford, Lt, J Shkor, Lt Cmdr, USCG, New Orleans; WV Akman, MD, S Mendlow, MD, M St John, MD, USPHS Hospital, New Orleans; M Samuels, MD, Charity Hospital, New Orleans; CT Caraway, DVM, State Epidemiologist, L McFarland, MPH, Louisiana Dept of Health and Human

*The normal level is zero.

Asphyxia - Continued

Resources; FS Wolf, MD, State Epidemiologist, Alabama State Dept of Public Health; NIOSH, Toxicology Br, Clinical Chemistry Div, Bur of Laboratories, and Special Studies Br, Chronic Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Slowly decaying fish may deplete a ship's hold of oxygen and lead to the production of toxic quantities of hydrogen sulfide (H₂S), ammonia (NH₃), and carbon dioxide (CO₂) (2). From 1966 to 1971, reports of 3 deaths and 4 cases of unconsciousness from asphyxia among Danish commercial fishermen led to a survey of the air content in the holds of 13 large industrial fishing cutters (3). In 7 of these ships, the oxygen concentration was found to be dangerously low (<7 vol. %, range 3-20). Concentrations of CO₂ greater than 20 vol. % (range 0-40) and NH₃ >700 ppm (range 0-7000) were found in 7 of the vessels and H₂S exceeding 100 ppm (range 3- >2000) in 9 vessels. These high concentrations are sufficient to cause immediate toxicity or asphyxia in man, and the median levels are above the threshold limit values recommended for occupational exposure in industrial workplaces. Whereas most large fishing crafts have equipment to ventilate the holds of ships before crewmen enter, small vessels do not. The toxicity of air in the holds of small vessels has not previously been viewed as a potential hazard.

Sodium bisulfite and sodium metabisulfite have been used in a 1% solution since 1956 as a dip for the preservation of fresh shrimp. The white powder emits a pungent odor of sulfur dioxide, particularly when it is not kept cool, and this odor may be enhanced when mixed with warm salt water. The finding of measurable levels of sulfhemoglobin in the blood of the crewmen in the absence of methemoglobin suggests their

(Continued on page 315)

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

(Cumulative totals include revised and delayed reports through previous weeks.)

DISEASE	33rd WEEK ENDING		MEDIAN 1973-1977**	CUMULATIVE, FIRST 33 WEEKS		
	August 19, 1978	August 20, 1977*		August 19, 1978	August 20, 1977*	MEDIAN 1973-1977**
Aseptic meningitis	265	207	128	2,363	2,285	1,711
Brucellosis	4	10	6	97	136	136
Chickenpox	296	285	308	121,539	159,685	144,256
Diphtheria	4	1	2	54	59	125
Enccephalitis: Primary (arthropod-borne & unspec.)	34	46	45	457	501	551
Post-infectious	2	6	5	126	145	192
Hepatitis, Viral: Type B	263	354	229	9,284	10,461	7,238
Type A	601	600	638	17,985	19,584	22,203
Type unspecified	192	168	5,638	5,594		
Malaria	16	18	6	441	339	251
Measles (rubeola)	291	123	123	22,546	52,497	23,787
Meningococcal infections: Total	28	29	12	1,669	1,210	1,003
Civilian	28	29	12	1,649	1,202	980
Military	-	-	-	20	8	23
Mumps	95	112	279	12,909	15,624	43,531
Pertussis	41	67	---	1,182	768	---
Rubella (German measles)	153	64	73	14,843	18,379	14,606
Tetanus	1	4	3	50	42	51
Tuberculosis	577	636	636	19,154	19,135	20,017
Tularemia	1	3	3	67	98	91
Typhoid fever	7	11	9	273	223	239
Typhus fever, tick-borne (Rky. Mt. spotted)	39	50	27	701	831	580
Veneral diseases:						
Gonorrhea: Civilian	21,778	19,615	20,389	618,406	615,352	615,352
Military	346	491	607	15,893	17,077	18,903
Syphilis, primary & secondary: Civilian	404	449	502	13,209	13,011	15,406
Military	4	4	4	182	190	221
Rabies in animals	83	61	69	1,963	1,938	1,872

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1978		CUM. 1978
Anthrax	4	Poliomyelitis: Total	-
Botulism	55	Paralytic*	-
Congenital rubella syndrome	21	Psittacosis (Utah 1, Calif. 1)	73
Leprosy (Calif. 1)	58	Rabies in man	-
Leptospirosis* (Ups. N.Y. 1, Hawaii 1)	35	Trichinosis* (Pa. 2)	36
Plague* (Colo. 1)	4	Typhus fever, flea-borne (endemic, murine)	26

* 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: Lepto: La. 3 (1977), Polio, para.: N. Mex. 1, Plague: N. Mex. 2, Trichinosis: Pa. 2.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 19, 1978, and August 20, 1977 (33rd week)

REPORTING AREA	ASEPTIC MENINGITIS		BRUCELLOSIS	CHICKEN-POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
	1978	1978			1978	1978	CUM. 1978	Primary		Post-infectious	B	A	Unspecified	1978
			1978	1977*				1978	1978					
UNITED STATES	265	4	296	4	54	34	46	2	263	601	192	16	441	
NEW ENGLAND	10	1	29	-	-	-	-	-	3	12	12	1	16	
Maine	-	1	5	-	-	-	-	-	-	-	-	-	1	
N.H. †	2	-	-	-	-	-	-	-	-	-	-	1	3	
Vt.	-	-	-	-	-	-	-	-	-	1	-	-	-	
Mass.	3	-	11	-	-	-	-	-	-	6	12	-	3	
R.I.	-	-	6	-	-	-	-	-	2	-	-	-	1	
Conn.	5	-	7	-	-	-	-	-	1	5	-	-	8	
MID. ATLANTIC	52	-	28	-	1	5	8	-	64	66	33	6	93	
Upstate N.Y.	9	-	15	-	-	-	-	-	20	12	8	1	13	
N.Y. City	5	-	11	-	1	1	2	-	3	9	9	-	39	
N.J. †	27	-	NN	-	-	1	-	-	10	20	4	-	18	
Pa. †	11	-	2	-	-	3	6	-	26	25	12	5	23	
E.N. CENTRAL	40	1	135	-	-	16	11	-	23	58	5	-	24	
Ohio †	10	-	17	-	-	15	9	-	8	16	-	-	4	
Ind.	17	-	13	-	-	-	1	-	-	2	2	-	3	
Ill.	-	-	22	-	-	-	-	-	4	13	1	-	4	
Mich.	10	1	38	-	-	-	-	-	9	16	2	-	11	
Wis. †	3	-	45	-	-	1	1	-	2	11	-	-	2	
W.N. CENTRAL	5	-	4	-	2	1	10	-	10	30	6	-	19	
Minn.	1	-	-	-	-	-	6	-	2	14	-	-	4	
Iowa	-	-	3	-	-	-	1	-	3	5	-	-	-	
Mo. †	-	-	1	-	1	1	-	-	4	6	5	-	7	
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	
S. Dak.	-	-	-	-	-	-	-	-	-	-	1	-	1	
Nebr.	-	-	-	-	1	-	3	-	1	2	-	-	3	
Kans.	4	-	-	-	-	-	-	-	-	2	1	-	4	
S. ATLANTIC	38	-	47	-	-	3	6	-	40	104	21	1	84	
Del.	1	-	1	-	-	-	-	-	-	2	-	-	1	
Md.	14	-	1	-	-	-	-	-	4	5	1	1	20	
D.C.	-	-	1	-	-	-	-	-	-	-	-	-	2	
Va. †	4	-	-	-	-	1	3	-	5	4	4	-	18	
W. Va. †	-	-	29	-	-	1	2	-	1	3	-	-	1	
N.C.	10	-	NN	-	-	1	-	-	10	16	5	-	7	
S.C.	2	-	-	-	-	-	-	-	2	2	-	-	4	
Ga.	-	-	-	-	-	-	-	-	7	35	-	-	6	
Fla.	7	-	16	-	-	1	-	-	11	37	11	-	25	
E.S. CENTRAL	6	-	3	-	-	2	2	-	14	61	5	-	4	
Ky.	-	-	1	-	-	-	-	-	4	3	-	-	1	
Tenn.	4	-	NN	-	-	2	1	-	5	19	1	-	1	
Ala.	-	-	1	-	-	-	-	-	5	31	4	-	1	
Miss.	2	-	1	-	-	-	1	-	-	8	-	-	1	
W.S. CENTRAL	25	2	10	-	1	3	5	1	19	64	43	1	22	
Ark.	1	1	-	-	1	-	1	1	2	4	7	-	1	
La.	3	-	NN	-	-	-	2	-	3	10	5	-	3	
Okl.	2	-	-	-	-	1	-	-	2	5	3	-	-	
Tex.	19	1	10	-	-	2	2	-	12	45	28	1	18	
MOUNTAIN	17	-	20	-	3	-	2	-	10	54	33	-	4	
Mont. †	8	-	5	-	-	-	1	-	1	5	1	-	-	
Idaho	2	-	-	-	-	-	-	-	-	7	-	-	-	
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-	
Colo.	1	-	7	-	2	-	1	-	6	6	2	-	1	
N. Mex.	-	-	-	-	-	-	-	-	-	9	1	-	1	
Ariz.	-	-	NN	-	-	-	-	-	-	12	19	-	1	
Utah	6	-	8	-	-	-	-	-	2	15	8	-	-	
Nev.	-	-	-	-	1	-	-	-	1	-	2	-	1	
PACIFIC	72	-	20	4	47	4	2	1	80	152	34	7	175	
Wash.	12	-	12	4	43	2	1	-	6	16	3	-	6	
Oreg.	18	-	2	-	-	-	-	1	12	35	5	-	4	
Calif. †	38	-	-	-	1	1	1	-	61	98	26	7	147	
Alaska	-	-	5	-	3	1	-	-	-	2	-	-	3	
Hawaii	4	-	1	-	-	-	-	-	1	1	-	-	15	
Guam	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-	
P.R.	-	-	6	-	-	-	-	-	1	1	3	-	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.: N.H. +1, Pa. -2, Wis. -4; Chickenpox: Calif. +17; Enceph.: Wis. +1; Hep. B: N.J. -5, Ohio -2, W. Va. -1; Hep. A: N.J. -8, Mo. -2, Va. -1, W. Va. +1, Mont. -2; Hep. unsp.: N.J. -9, Wis. +3.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 19, 1978, and August 20, 1977 (33rd 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	291	22,546	52,497	28	1,669	1,210	95	12,909	41	153	14,843	50
NEW ENGLAND	9	1,966	2,476	-	85	52	2	716	-	7	724	1
Maine	2	1,314	169	-	6	3	-	484	-	-	148	-
N.H.	-	46	510	-	8	8	-	13	-	1	100	-
Vt.	-	25	290	-	2	5	-	5	-	-	27	1
Mass.	4	251	620	-	27	17	2	85	-	1	211	-
R.I.	-	8	64	-	17	1	-	32	-	1	42	-
Conn.	3	322	823	-	25	23	-	97	-	4	196	-
MID. ATLANTIC	22	2,137	8,296	11	296	162	5	586	6	12	2,962	3
Upstate N.Y.	21	1,380	3,781	5	103	36	1	197	2	2	514	1
N.Y. City	1	332	709	2	67	44	1	134	4	3	118	-
N.J.†	-	73	195	1	50	37	1	130	-	6	1,596	-
Pa.†	-	352	3,613	3	76	45	7	125	-	1	734	2
E.N. CENTRAL	150	9,830	11,091	-	151	132	56	5,168	4	85	6,820	2
Ohio†	-	476	1,834	-	55	44	16	871	-	1	1,256	1
Ind.	6	182	4,300	-	29	9	5	301	-	5	562	1
Ill.	3	621	1,637	-	7	33	7	1,646	1	2	422	-
Mich.	137	7,100	523	-	49	34	4	1,341	-	69	3,066	-
Wis.	11	1,451	2,397	-	11	12	24	1,009	3	8	1,514	-
W.N. CENTRAL	1	378	9,428	1	56	54	2	1,890	5	20	655	6
Minn.†	-	34	2,618	1	14	19	-	18	5	-	128	1
Iowa	1	52	4,267	-	5	8	-	120	-	-	52	-
Mo.	-	11	1,036	-	23	16	2	1,153	-	1	97	-
N. Dak.	-	191	23	-	3	1	-	12	-	-	81	-
S. Dak.	-	-	66	-	2	4	-	6	-	-	111	1
Nebr.	-	5	210	-	1	1	-	21	-	-	34	-
Kans.	-	85	1,208	-	9	5	-	560	-	19	157	4
S. ATLANTIC	67	4,809	4,503	10	418	281	8	727	9	5	989	9
Del.	1	6	22	-	15	17	-	49	-	-	34	-
Md.	-	46	371	2	25	18	-	65	-	1	7	1
D.C.	-	-	14	-	1	-	-	1	-	-	1	-
Va.†	6	2,804	2,689	-	52	22	2	132	2	-	234	-
W. Va.	2	1,030	220	-	9	9	1	164	-	?	328	-
N.C.	2	116	62	4	82	60	1	65	5	-	178	2
S.C.	2	196	147	-	34	28	-	15	-	-	28	1
Ga.	-	17	764	-	46	44	-	64	-	-	5	-
Fla.	56	594	214	4	164	83	4	172	2	2	174	5
E.S. CENTRAL	1	1,377	1,965	1	134	130	3	1,102	1	3	492	2
Ky.	1	118	1,179	-	27	26	-	181	-	2	128	1
Tenn.	-	956	672	-	32	32	-	444	1	1	196	-
Ala.	-	89	77	1	41	48	2	406	-	-	21	-
Miss.	-	214	37	-	34	24	1	71	-	-	147	1
W.S. CENTRAL	23	1,010	2,056	5	261	214	6	1,631	3	5	903	14
Ark.	-	16	29	1	22	11	-	581	1	-	58	1
La.	12	341	74	3	108	80	-	61	-	-	483	1
Okla.	-	13	54	-	16	10	-	4	-	-	11	3
Tex.†	11	640	1,899	1	115	113	6	985	2	5	351	9
MOUNTAIN	2	247	2,500	-	35	30	7	383	-	1	195	1
Mont.	-	105	1,157	-	1	2	-	141	-	-	17	-
Idaho	-	1	161	-	3	4	-	20	-	-	3	-
Wyo.	-	-	19	-	-	1	-	-	-	-	-	-
Colo.	-	29	494	-	2	1	-	77	-	-	45	-
N. Mex.	-	-	255	-	7	8	-	15	-	-	3	-
Ariz.	-	49	299	-	13	10	1	11	-	1	91	-
Utah	-	44	18	-	5	3	5	114	-	-	26	1
Nev.	2	19	93	-	4	1	1	5	-	-	11	-
PACIFIC	16	792	11,180	-	233	155	6	706	13	15	1,103	12
Wash.	14	157	531	-	39	18	-	164	-	4	98	-
Oreg.	-	144	364	-	22	17	2	82	5	-	101	-
Calif.	?	487	9,190	-	162	92	3	427	5	11	891	12
Alaska	-	-	60	-	6	26	1	8	3	-	3	-
Hawaii	-	9	35	-	4	2	-	25	-	-	10	-
Guam	NA	24	6	-	-	-	NA	33	NA	NA	3	1
P.R.	9	223	867	1	4	1	14	1,101	-	-	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: Pa. +3, Ohio -1, Va. -1, Tex. -1; Men. inf.: N.J. +1; Pertussis: Minn. -1.

TABLE III (Cont'd). Cases of specified notifiable diseases, United States, weeks ending August 19, 1978, and August 20, 1977 (33rd 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*	
UNITED STATES	577	19,154	67	7	273	39	701	21,778	618,406	615,352	404	13,209	13,011	1,963
NEW ENGLAND	22	628	-	1	39	1	12	571	16,111	16,169	7	374	536	72
Maine	2	45	-	-	-	-	-	27	1,211	1,155	-	7	15	60
N.H.†	-	11	-	-	5	-	-	37	78	642	-	4	3	2
Vt.	3	28	-	-	1	-	-	19	374	424	-	3	6	1
Mass.	10	365	-	-	22	1	4	253	7,134	6,969	4	229	386	6
R.I.	1	44	-	-	4	-	1	43	1,151	1,314	-	16	7	-
Conn.	6	135	-	1	7	-	7	192	5,493	5,665	3	115	119	3
MID. ATLANTIC	83	3,254	3	2	32	1	42	2,213	66,086	62,547	47	1,750	1,810	62
Upstate N.Y.†	19	489	2	-	7	1	24	183	11,160	10,572	-	133	174	44
N.Y. City	32	1,177	1	1	17	-	2	628	25,484	24,492	36	1,227	1,136	-
N.J.	14	755	-	-	4	-	8	640	12,237	10,848	6	194	236	11
Pa.†	18	753	-	1	4	-	8	762	17,205	16,635	5	196	264	7
E.N. CENTRAL	111	2,947	1	2	19	7	21	3,24	93,201	96,242	46	1,454	1,378	117
Ohio†	20	540	1	1	6	6	15	750	24,168	25,332	8	269	325	11
Ind.	5	341	-	-	4	-	1	267	9,604	8,633	6	92	102	8
Ill.	44	1,104	-	-	4	1	5	1,302	29,484	31,374	28	910	724	37
Mich.	34	830	-	1	9	-	-	753	21,512	22,112	4	139	160	5
Wis.	8	132	-	-	-	-	-	352	8,428	8,791	-	44	67	56
W.N. CENTRAL	14	630	13	-	12	1	21	1,147	31,189	32,320	13	317	288	413
Minn.	4	117	-	-	4	-	-	186	5,383	5,845	3	127	86	134
Iowa	1	70	-	-	2	-	-	122	3,484	3,759	6	44	28	81
Mo.†	3	266	12	-	4	-	13	591	13,490	13,587	3	84	106	49
N. Dak.	-	29	-	-	-	-	1	17	565	620	-	2	3	67
S. Dak.	-	53	-	-	-	-	2	30	1,101	946	-	2	3	56
Nebr.	-	12	-	-	-	1	1	97	2,340	2,774	-	9	24	4
Kans.	5	63	1	-	2	-	4	104	4,822	4,789	1	49	38	22
S. ATLANTIC	121	4,156	7	-	37	10	394	5,232	151,218	152,985	103	3,483	3,693	269
Del.	2	33	-	-	1	-	5	87	2,080	2,061	-	6	18	1
Md.†	16	630	4	-	6	3	90	588	19,140	19,153	9	267	246	-
D.C.	6	216	-	-	1	-	-	447	9,920	9,995	6	265	390	1
Va.†	16	443	3	-	9	2	84	688	14,450	15,815	11	292	367	6
W. Va.†	9	176	-	-	2	-	9	48	2,108	2,063	1	10	3	8
N.C.†	12	635	-	-	2	3	132	893	21,752	22,876	11	356	520	8
S.C.	13	378	-	-	4	1	44	588	14,823	14,036	6	179	158	63
Ga.	19	572	-	-	3	1	31	905	29,029	29,609	33	857	769	172
Fla.†	28	1,073	-	-	13	-	-	988	37,916	37,373	26	1,251	1,222	11
E.S. CENTRAL	55	1,769	5	-	7	14	131	1,853	53,233	54,990	28	684	471	95
Ky.	12	389	2	-	2	-	34	231	6,624	7,383	1	86	54	52
Tenn.	13	544	2	-	3	12	85	690	19,684	22,201	11	234	147	19
Ala.	22	423	-	-	1	1	6	686	15,374	14,993	9	113	97	24
Miss.†	8	413	-	-	1	1	6	246	11,551	10,413	7	251	173	-
W.S. CENTRAL	68	2,258	32	-	31	5	71	3,196	84,812	77,506	74	2,095	1,810	626
Ark.	9	241	21	-	2	2	11	72	6,248	5,975	-	49	46	99
La.	7	355	5	-	3	-	1	458	13,802	11,194	12	446	417	11
Okl.	4	223	3	-	2	2	40	266	7,940	7,345	2	60	51	131
Tex.	48	1,399	3	-	24	1	19	2,400	56,822	52,992	60	1,540	1,246	385
MOUNTAIN	16	565	4	1	15	-	6	835	23,237	24,948	9	266	262	54
Mont.	6	42	-	1	1	-	2	45	1,341	1,266	-	7	4	11
Idaho	-	22	2	-	5	-	2	45	895	1,174	1	8	7	-
Wyo.	-	13	1	-	-	-	1	18	546	607	3	8	2	-
Colo.	-	53	-	-	3	-	-	253	6,448	6,446	4	79	80	18
N. Mex.†	5	50	-	-	2	-	-	73	3,310	3,667	-	60	48	11
Ariz.	4	270	-	-	2	-	-	220	6,024	7,073	-	61	105	12
Utah†	-	27	1	-	1	-	-	60	1,254	1,425	-	11	5	2
Nev.	1	48	-	-	1	-	1	121	3,415	3,270	-	32	11	-
PACIFIC	87	2,947	2	1	81	-	3	3,307	99,319	97,645	78	2,786	2,763	255
Wash.	NA	145	-	-	6	-	-	285	7,895	7,344	NA	118	155	-
Oreg.	4	126	-	-	1	-	2	233	6,950	6,656	3	90	81	6
Calif.	70	2,263	2	1	67	-	1	2,551	79,507	78,456	74	2,544	2,484	241
Alaska	-	46	-	-	-	-	-	101	3,144	3,186	-	7	18	9
Hawaii	13	367	-	-	7	-	-	37	1,823	2,003	1	27	25	-
Guam	NA	37	-	NA	-	NA	-	NA	119	144	NA	-	1	-
P.R.	1	253	-	-	1	-	-	62	1,445	2,034	29	307	361	23
V.I.	-	4	-	-	2	-	-	5	138	131	-	12	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: N.H. +2, Mo. -2, Md. -2, W. Va. -36, N.C. -1, Fla. -1, Miss. -4, Utah -1; Tularemia: Mo. +1; T. fever: Ohio +1; RMSF: Pa. -1, Va. -1; Syphilis: N.H. +1; An. rabies: Ups. N.Y. +5, N. Mex. +2.

TABLE IV. Deaths in 121 U.S. cities,* week ending
August 19, 1978 (33rd week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL	REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1			ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	622	396	155	29	20	33	S. ATLANTIC	1,061	628	267	81	43	32
Boston, Mass.	177	100	54	10	7	8	Atlanta, Ga.	102	51	37	10	-	2
Bridgeport, Conn.	4c	33	9	2	1	2	Baltimore, Md.	171	103	34	20	8	6
Cambridge, Mass.	20	16	1	2	1	1	Charlotte, N.C.	43	23	10	4	5	2
Fall River, Mass.	26	19	5	1	1	2	Jacksonville, Fla.	97	64	17	7	4	1
Hartford, Conn.	48	28	12	4	3	3	Miami, Fla.	90	53	27	5	4	2
Lowell, Mass.	30	18	8	3	-	-	Norfolk, Va.	50	26	15	2	3	1
Lynn, Mass.	21	14	5	-	1	-	Richmond, Va.	79	38	23	10	2	4
New Bedford, Mass.	24	18	4	1	-	2	Savannah, Ga.	35	20	11	1	2	1
New Haven, Conn.	51	29	17	2	1	1	St. Petersburg, Fla.	77	66	10	-	1	3
Providence, R.I.	41	25	11	1	-	4	Tampa, Fla.	84	54	22	3	2	3
Somerville, Mass.	10	7	3	-	-	-	Washington, D.C.	175	97	44	16	11	6
Springfield, Mass.	42	25	12	1	3	3	Wilmington, Del.	58	33	17	3	1	1
Waterbury, Conn.	27	24	2	-	-	4							
Worcester, Mass.	55	36	12	2	2	3							
							E.S. CENTRAL	664	390	166	33	38	31
MID. ATLANTIC	2,506	1,544	623	178	75	110	Birmingham, Ala.	81	48	25	3	2	-
Albany, N.Y.	45	27	14	2	2	1	Chattanooga, Tenn.	32	18	12	-	-	4
Allentown, Pa.	20	10	4	4	-	-	Knoxville, Tenn.	48	34	9	2	1	1
Buffalo, N.Y.	111	69	26	6	6	9	Louisville, Ky.	115	67	23	8	10	12
Camden, N.J.	34	22	9	1	2	5	Memphis, Tenn.	196	114	49	9	15	4
Elizabeth, N.J.	24	16	6	2	-	-	Mobile, Ala.	68	33	16	7	7	4
Erie, Pa.	25	18	5	1	-	2	Montgomery, Ala.	46	27	13	2	-	3
Jersey City, N.J.	27	11	12	2	-	-	Nashville, Tenn.	78	49	19	2	3	3
Newark, N.J.	73	26	23	10	7	5							
N.Y. City, N.Y.	1,293	808	317	105	22	43	W.S. CENTRAL	1,146	625	304	90	58	16
Paterson, N.J.	41	20	8	1	12	4	Austin, Tex.	57	35	15	3	-	1
Philadelphia, Pa.	386	227	105	29	15	18	Baton Rouge, La.	25	15	5	3	-	-
Pittsburgh, Pa.	62	41	18	-	2	4	Corpus Christi, Tex.	32	14	12	3	1	1
Reading, Pa.	35	26	8	1	-	-	Dallas, Tex.	168	91	47	9	13	-
Rochester, N.Y.	113	69	32	4	3	8	El Paso, Tex.	45	17	17	3	3	2
Schenectady, N.Y.	18	14	2	2	-	1	Fort Worth, Tex.	79	46	21	8	1	-
Scranton, Pa.	18	12	4	2	-	-	Houston, Tex.	229	106	69	25	9	3
Syracuse, N.Y.	97	67	17	4	4	2	Little Rock, Ark.	71	41	12	9	6	1
Trenton, N.J.	37	25	9	1	-	-	New Orleans, La.	175	101	42	16	8	3
Utica, N.Y.	18	17	-	1	-	2	San Antonio, Tex.	147	84	32	8	13	1
Yonkers, N.Y.	23	19	4	-	-	2	Shreveport, La.	42	24	14	-	1	2
							Tulsa, Okla.	76	51	18	3	3	2
E.N. CENTRAL	2,151	1,231	579	147	89	43	MOUNTAIN	480	280	113	41	20	12
Akron, Ohio	82	52	20	4	4	-	Albuquerque, N.Mex.	56	31	14	6	3	5
Canton, Ohio	47	33	10	1	2	1	Colo. Springs, Colo.	31	18	7	3	-	-
Chicago, Ill.	560	317	150	49	21	11	Denver, Colo.	96	58	23	7	7	3
Cincinnati, Ohio	136	77	38	9	3	2	Las Vegas, Nev.	41	19	15	3	1	-
Cleveland, Ohio	150	82	41	6	11	1	Ogden, Utah	22	13	4	2	1	-
Columbus, Ohio	135	75	41	8	7	7	Phoenix, Ariz.	102	65	21	7	4	-
Dayton, Ohio	97	47	31	11	5	-	Pueblo, Colo.	19	12	2	3	-	2
Detroit, Mich.	243	137	58	23	11	5	Salt Lake City, Utah	53	32	10	4	2	2
Evansville, Ind.	52	30	11	6	-	3	Tucson, Ariz.	60	32	17	6	2	-
Fort Wayne, Ind.	43	26	11	3	-	-							
Gary, Ind.	18	12	5	-	-	-							
Grand Rapids, Mich.	42	25	16	-	1	1	PACIFIC	1,411	855	356	78	55	39
Indianapolis, Ind.	139	75	37	10	10	1	Berkeley, Calif.	16	15	-	1	-	-
Madison, Wis.	36	17	10	3	-	3	Fresno, Calif.	69	39	13	4	6	1
Milwaukee, Wis.	123	65	30	5	2	2	Glendale, Calif.	23	15	7	1	-	-
Peoria, Ill.	20	7	6	1	4	1	Honolulu, Hawaii	49	24	15	3	2	-
Rockford, Ill.	34	21	7	2	2	1	Long Beach, Calif.	84	49	28	1	4	2
South Bend, Ind.	36	21	11	2	-	2	Los Angeles, Calif.	379	217	96	30	16	17
Toledo, Ohio	97	58	28	1	3	2	Oakland, Calif.	59	39	14	4	1	3
Youngstown, Ohio	60	34	18	3	3	-	Pasadena, Calif.	25	16	5	2	-	-
							Portland, Ore.	108	69	26	2	7	3
W.N. CENTRAL	700	410	176	55	30	27	Sacramento, Calif.	66	40	20	4	-	3
Des Moines, Iowa	53	30	12	7	2	5	San Diego, Calif.	111	73	21	5	5	1
Duluth, Minn.	24	23	1	-	-	1	San Francisco, Calif.	138	84	36	8	5	-
Kansas City, Kans.	30	14	6	3	3	2	San Jose, Calif.	61	39	14	3	-	-
Kansas City, Mo.	126	79	32	5	9	3	Seattle, Wash.	133	79	33	8	6	2
Lincoln, Nebr.	31	20	10	-	4	1	Spokane, Wash.	46	27	15	2	2	2
Minneapolis, Minn.	75	44	18	-	4	2	Tacoma, Wash.	44	30	13	-	1	1
Omaha, Nebr.	64	43	9	4	4	2							
St. Louis, Mo.	164	10	68	18	4	5							
St. Paul, Minn.	67	45	9	6	2	1							
Wichita, Kans.	57	38	11	5	2	5							
							TOTAL	10,741	6,359	2,739	732	428	343
							Expected Number	10,890	6,522	2,802	716	430	366

*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

Asphyxia — Continued

sulfur exposure may have been due in part to the inhalation of a high concentration of sulfur dioxide gas. The presence of sulphemoglobin may have made the crewmen (who used the dip) but not the captain particularly sensitive to the low oxygen content or to the toxicity of other gases in the hold.

References

1. Idyll CP: How to use sodium bisulfite to control "black spot" on shrimp. Florida State Board of Conservation and the Marine Laboratory, University of Miami, Coral Gables, Florida. Special Services Bulletin No. 12, August 1956
2. Hydrogen sulfide poisoning, editorial. Lancet 1:28-29, 1978
3. Dalgaard JB, Dencher B, Fallentin P, Hansen P, Kaempe B, Steensberg J, Wilhardt P: Fatal poisoning and other health hazards connected with industrial fishing. Br J Ind Med 29, 307-316, 1972

Salmonellae in Precooked Roasts of Beef — New York

The U.S. Department of Agriculture (USDA) has issued a recall of precooked roasts of beef associated with 3 outbreaks of salmonellosis in New York that have involved a total of 41 persons, to date. *Salmonella* organisms have been isolated from the implicated beef.

The first outbreak was associated with a luncheon buffet in Oswego County, New York, on July 21, 1978. Within 48 hours of this luncheon, 30 of the 78 persons who attended had developed gastrointestinal illness; 2 were hospitalized. A *Salmonella* group C1 organism was isolated from 1 patient, and *Salmonella* C1 and C2 from another. Since the initial outbreak, 11 other cases of salmonellosis in this and a neighboring county have been traced to precooked roast beef.

Investigation by the county and state health departments determined that 1 of 2 whole, unopened roasts, produced on the same date as the beef used at the luncheon, was positive for a *Salmonella* C2 organism. Cultures by the USDA of 4 of 12 whole, unopened roasts from production dates later than those associated with the initial outbreak have also been found to contain isolates of *Salmonella* groups C1, C2, and E organisms. On August 11, the New York State Department of Agriculture initiated seizure of the implicated product, which was produced by a New Jersey company and distributed in New York and northern New Jersey.

Serotyping of the human and beef isolates from the outbreak is in progress at CDC. Reported by DO Lyman, MD, State Epidemiologist, New York Dept of Health; R Altman, MD, State Epidemiologist, New Jersey Dept of Health; USDA; Epidemiologic Investigations Laboratory Br, Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: This is the fourth consecutive year in which precooked roasts of beef have been associated with outbreaks of salmonellosis (1-3). All of these outbreaks have occurred in the summer. As a result of the outbreak last year, when cases due primarily to *S. newport* occurred in 7 northeastern states, the USDA issued regulations that precooked roast beef be cooked to an internal temperature of 145 F (62.7 C) to eliminate salmonellae. However, when beef is cooked to this temperature, it no longer has the rare appearance preferred by many consumers. Consequently, roast beef producers in collaboration with independent laboratories presented to the USDA data supporting various time and temperature formulas that eliminate salmonellae from beef but maintain its rare appearance. Subsequently, beginning July 18, the USDA has allowed 15 alternative time and temperature formulas for production of beef (4).

USDA tests have determined that the producer of the beef associated with the current outbreak did not follow the USDA regulations.

References

1. MMWR 25:34, 1976
2. MMWR 25:333, 1976
3. MMWR 26:277, 1977
4. Federal Register 43:30793, July 18, 1978

*Current Trends***Tuberculosis — United States, 1977**

In the United States in 1977 there were 30,145 reported cases of tuberculosis (Table 1), a decline of 6.1% from the 32,105 cases reported in 1976. The case rate was 13.9 per 100,000 population, down 7.3% from the 1976 case rate of 15.0.

TABLE 1. Tuberculosis cases, rates,* and ranks, final figures, by state, 1976 and 1977**

State	1976			1977		
	Total cases	Case rate	Rank	Total cases	Case rate	Rank
UNITED STATES	32,105	15.0	N/A+	30,145	13.9	N/A
Alabama	824	22.5	3	704	19.1	9
Alaska	88	23.0	2	92	22.6	2
Arizona	405	17.8	12	358	15.6	17
Arkansas	444	21.1	7	392	18.3	11
California	3,620	16.8	15	3,465	15.8	15
Colorado	174	6.7	39	149	5.7	41
Connecticut	227	7.3	36	247	7.9	35
Delaware	82	14.1	25	67	11.5	24
District of Columbia	319	45.4	N/A+	342	49.6	N/A+
Florida	1,630	19.4	10	1,674	19.8	7
Georgia	824	16.6	16	916	18.1	12
Hawaii	665	75.0	1	584	65.3	1
Idaho	37	4.5	47	38	4.4	45
Illinois	1,711	15.2	21	1,727	15.4	18
Indiana	544	10.3	30	560	10.5	28
Iowa	115	4.0	49	99	3.4	47
Kansas	135	5.8	42	153	6.6	40
Kentucky	586	17.1	13	719	20.8	4
Louisiana	614	16.0	19	615	15.7	16
Maine	72	6.7	40	82	7.6	38
Maryland	925	22.3	4	827	20.0	6
Massachusetts	676	11.6	28	647	11.2	25
Michigan	1,349	14.8	22	1,290	14.1	20
Minnesota	213	5.4	43	211	5.3	42
Mississippi	434	18.4	11	460	19.3	8
Missouri	568	11.9	27	497	10.4	30
Montana	51	6.8	38	68	8.9	32
Nebraska	58	3.7	50	42	2.7	49
Nevada	42	6.9	37	58	9.2	31
New Hampshire	34	4.1	48	22	2.6	50
New Jersey	1,201	16.4	17	1,162	15.9	14
New Mexico	181	15.5	20	152	12.8	23
New York	3,072	17.0	14	2,434	13.6	21
North Carolina	1,220	22.3	5	1,042	18.9	10
North Dakota	40	6.2	41	32	4.9	44
Ohio	926	8.7	33	845	7.9	36
Oklahoma	399	14.4	24	305	10.9	27
Oregon	197	8.5	34	171	7.2	39
Pennsylvania	1,511	12.7	26	1,282	10.9	26
Rhode Island	82	8.8	32	78	8.3	34
South Carolina	589	20.7	8	643	22.4	3
South Dakota	62	9.0	31	58	8.4	33
Tennessee	902	21.4	6	864	20.1	5
Texas	2,454	19.7	9	2,326	18.1	13
Utah	60	4.9	45	43	3.4	48
Vermont	36	7.6	35	37	7.7	37
Virginia	821	16.3	18	742	14.4	19
Washington	378	10.5	29	384	10.5	29
West Virginia	263	14.4	23	239	12.9	22
Wisconsin	225	4.9	46	181	3.9	46
Wyoming	20	5.1	44	20	4.9	43

* Rates per 100,000 population

** By rate

† District of Columbia is not ranked with the states but is included in totals.

Tuberculosis – Continued

There was considerable geographic disparity in the distribution of cases. For example, 8 states (Alabama, Alaska, Arkansas, Hawaii, Maryland, North Carolina, South Carolina, and Tennessee) and the District of Columbia had case rates of 20 or more per 100,000 population. However, 6 states (Idaho, Iowa, Nebraska, New Hampshire, Utah, and Wisconsin) had fewer than 5 cases per 100,000.

Reported by the Tuberculosis Control Div, Bur of State Services, CDC.

Editorial Note: Prior to 1975, cases were classified as "active" and "inactive" tuberculosis; only previously unreported "active" cases were reported and counted as new tuberculosis cases. In 1975 CDC introduced new guidelines for counting tuberculosis cases; these were based on classification changes introduced by the American Thoracic Society. Currently, first-time and recurrent cases with *verified* current disease are to be counted at the time of diagnosis.

Although suspected cases of tuberculosis should be reported immediately to health departments, a case is counted only after it is verified. Most cases should be verified by identification of the *Mycobacterium tuberculosis* organism. When bacteriologic verification cannot be obtained, reported cases should be considered verified for counting only if the following 4 factors are present:

1. Completed diagnostic procedures;
2. Evidence of tuberculous infection (i.e., "positive" tuberculin test);
3. Abnormal chest X ray (not stable; i.e., worsening or improving) and/or clinical evidence of *current* disease; and
4. Decision to give a full course of therapy with 2 or more anti-tuberculosis drugs.

A case with a diagnosis pending is classified as suspected and is not counted even though multiple-drug therapy may have been started. When a case is counted, it is then included in a state's weekly morbidity report to CDC. When cases are routinely reported to CDC only after diagnoses are certain, the need to add and delete cases in subsequent weeks will be eliminated. The 52nd week cumulative total of tuberculosis cases published in the MMWR should then be very close to the final official count reported by the states to CDC.

Epidemiologic Notes and Reports

Follow-up on Legionnaires' Disease – Bloomington, Indiana

An organism previously reported to have been isolated by inoculation of a guinea pig with water from a creek near the Indiana Memorial Union (1) has been confirmed as the Legionnaires' disease bacterium on the basis of studies of DNA homology. Similar studies of an organism that was isolated from water in a cooling tower of the Union and resembles the Legionnaires' disease bacterium are in process. Attempts are being made to eradicate the organism from the cooling tower by chemical treatment.

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.

Send mailing list additions, deletions, and address changes to: Center for Disease Control, Attn: Distribution Services, GSO, 1 SB-36, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Legionnaires' disease – Continued

Reported by Enterobacteriology Br, Bacteriology Div, Bur of Laboratories, and Bacterial Diseases Div, Bur of Epidemiology, CDC.

Reference

1. MMWR 27:283-285, 1978

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