CENTER FOR DISEASE CONTROL

Morbidity and Mortality

Vol. 23, No. 11

WEEKLY REPORT

For Week Ending March 16, 1974

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE
DATE OF RELEASE: MARCH 22, 1974 – ATLANTA, GEORGIA 30333

CURRENT TRENDS

ISONIAZID-ASSOCIATED HEPATITIS: SUMMARY OF THE REPORT OF THE TUBERCULOSIS ADVISORY COMMITTEE AND SPECIAL CONSULTANTS TO THE DIRECTOR, CENTER FOR DISEASE CONTROL

On February 28-March 1, 1974, the Tuberculosis Advisory Committee and special consultants met at the Center for Disease Control, Atlanta, Georgia, to review the occurrence of hepatic dysfunction in persons on isoniazid (INH) therapy to prevent tuberculosis. Previous meetings of an Ad Hoc Committee on INH and Liver Disease had led to recommendations for the continued use of INH preventive therapy pending further investigations of the problem (MMWR, Vol. 20, No. 26). These investigations have recently been completed. The Advisory Committee and consultants were therefore asked to discuss the additional findings, to determine whether or not changes in the recommendations on the use of isoniazid are indicated, to determine by what means the risk of hepatitis can be minimized, and to advise CDC accordingly.

General conclusions reached by the group were that liver disease can occur in patients receiving isoniazid preventive therapy. Age is the predominant factor that seems to increase the risk of liver disease among subjects receiving isoniazid. Progressive liver damage is observed rarely under 20 years of age, up to 0.3% at ages 20-34 years, up to 1.2% at 35-49 years, and up to 2.3% at 50 years and over. Daily use of alcohol may also increase the risk. The frequency may vary from place to place and time to time, depending on factors not known. The liver disease that develops is not the result of any particular manufacturing process or contaminant. The development of liver disease is not predictable in any individual patient. The morphologic pathology of isoniazid liver disease, as presently understood, does not permit its ready differentiation from viral hepatitis. Routine monitoring by laboratory tests (SGOT, SGPT) is not useful in predicting hepatic disease in isoniazid recipients.

Persons for Whom Preventive Therapy is Recommended

The use of isoniazid with appropriate safeguards must be based on a comparison of the benefit of preventive therapy with the risk of hepatic injury. For positive tuberculin reactors under 35 years of age, the benefit of isoniazid therapy in preventing tuberculosis clearly outweighs the risk of hepatitis, even in the absence of additional risk factors. In positive tuberculin reactors 35 years and over, the risk of hepatitis precludes the routine use of preventive therapy. However, the presence of additional risk factors may increase the likelihood of subsequent tuberculous disease sufficiently to warrant offering preventive therapy regardless of age.

No significant changes were made in the recommendations for preventive therapy for the following groups, listed in order of priority:

a. Household members and other close associates of persons with recently diagnosed tuberculous disease
b. Positive tuberculin reactors with findings on the chest roentgenogram consistent with nonprogressive tuberculous disease, without positive bacteriologic findings, and without a history of adequate chemotherapy
c. Newly infected persons
d. Positive tuberculin reactors in the following special clinical situations:
   (1) Prolonged therapy with adrenocorticoids
   (2) Immunosuppressive therapy
   (3) Some hematologic and reticuloendothelial diseases, such as leukemia or Hodgkin's disease
   (4) Diabetes mellitus
   (5) Silicosis
   (6) After gastrectomy

Screening Procedures

The only significant change recommended in screening procedures was to include pregnancy as a contraindication to the administration of isoniazid. The contraindications are:

a. Previous isoniazid-associated hepatic injury
b. Severe adverse reactions to isoniazid, such as drug fever, chills, rash, and arthritis
c. Acute liver disease of any etiology
d. Pregnancy (Preventive treatment should be started after delivery.)

Five groups were identified for whom preventive treatment is not contraindicated but who should receive special attention:

CONTENTS

HEPATITIS – Continued

a. Those concurrently using any other medication on a long-term basis.
b. Those taking diphenylhydantoin.
c. Those who are daily users of alcohol.
d. Those who have previously discontined isoniazid because of possible but not definitely related side effects.
e. Those who may now have chronic liver disease.

Monitoring and Motivating

The group did not recommend any changes in procedures for monitoring and motivating the patients. It concluded that monitoring by routine laboratory tests is not useful in predicting hepatic disease in isoniazid recipients and therefore is not recommended. However, in evaluating signs and symptoms, such tests are mandatory.

Members of Tuberculosis Advisory Committee and Special Consultants

†Barlow, Peter B., M.D., Staff Physician, Pulmonary Section B, Veterans' Administration Hospital, Cleveland, Ohio

Black, Martin, M.D., Associate Professor of Medicine and Pharmacology, Head, Liver Unit, Temple University, Philadelphia, Pennsylvania

†Brummer, Donald L., M.D., Associate Professor of Medicine, Health Sciences Center, Medical College of Virginia, Richmond, Virginia

Comstock, George W., M.D., Director of Research, Washington County Health Department, Hagerstown, Maryland, and Professor of Epidemiology, Johns Hopkins University, Baltimore, Maryland

Dubin, I. Nathan, M.D., Professor of Pathology, Medical College of Pennsylvania, Philadelphia, Pennsylvania

Enterline, Philip, Ph.D., Professor of Biostatistics, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, Pennsylvania

Gibson, Merle, M.D., Director, Division of Anti-Infective Drugs, Food and Drug Administration, Rockville, Maryland

†Hardy, George E., Jr., M.D., Health Officer, Jefferson County Department of Health, Birmingham, Alabama

†Harrel, John A., M.D., Director, State Department of Health, Little Rock, Arkansas

Johnston, Robert, M.D., Director, Division of Pulmonary Diseases, Hahnemann Medical College and Hospital, Philadelphia, Pennsylvania

Kent, Donald C., M.D., Director of Medicine, Methodist Hospital, Brooklyn, New York

†Marvin, Beverly A., R.N., Nursing Supervisor, Disease Control Service, City and County of Denver, Denver, Colorado

†McCaig, Nancy C., M.D., Chief, Preventive Medicine Section, New Mexico Health and Social Services Department, Santa Fe, New Mexico

Mitchell, Jerry, M.D., Head, Clinical Pharmacology and Toxicology, Laboratory of Clinical Pharmacology, Attending Visitor, Experimental Therapeutics Branch, National Heart and Lung Institute, NIH, Bethesda, Maryland

Mosley, James W., M.D., Director, Hepatic Epidemiology Laboratory, Liver Service, John Wesley Hospital, University of Southern California School of Medicine, Los Angeles, California

Ogasawara, Frances, Special Consultant, Tuberculosis Program, American Lung Association, New York, N.Y.

Popper, Hans, M.D., Fogarty Scholar-in-Residence, John E. Fogarty International Center for Advanced Study in the Health Sciences, National Institutes of Health, Bethesda, Maryland

Reichman, Lee B., M.D., M.P.H., New York City Health Department, Associate in Medicine, College of Physicians and Surgeons, Harlem Hospital Center, New York, New York

Zimmerman, Hyman, M.D., Chief of Medical Service, Veterans' Administration Hospital, Washington, D.C.

†Member of Tuberculosis Advisory Committee

EPIDEMIOLOGIC NOTES AND REPORTS
VIRAL HEPATITIS-B ASSOCIATED WITH TRANSFUSION OF PLASMA PROTEIN FRACTION – Indiana

A blood bank of an Indianapolis, Indiana, hospital reported that of 7 persons who developed viral hepatitis following transfusions in June 1973, 5 had been transfused with 1 particular lot of Armour Pharmaceutical Company's plasma protein fraction (PPF); 1 of these 5 persons had received only PPF. A subsequent investigation revealed that 180 units of the lot of PPF in question were distributed among 52 recipients at this hospital. Of these 52 recipients, 20 were excluded from consideration because of 1) death due to causes other than hepatitis or 2) the presence of chronic renal failure and exposure to hemodialysis machines. Of the remaining 32 recipients, 19 were identified as having had clinical viral hepatitis,* for an attack rate of 59%. Nine of the 19 ill persons were tested for the hepatitis-B antigen (HBAg) during the acute phase of their illness, and 7 were positive.

The 32 recipients of the PPF were on 5 different medical and surgical services at the time of transfusion. Since 20 of these 32 patients were on the cardiovascular surgery service, they were selected as the study group. Twenty-two controls were chosen from other patients on the same service who were hospitalized at the same time as the sick individuals, but who did not receive the PPF in question; they were matched for age, sex, and number of units of transfused blood, albumin, and other PPF administered. Of the 20 recipients of the PPF in question, 11 had clinical hepatitis for an attack rate of 55%; in comparison, of the 22 controls, none had clinical hepatitis ($p < 0.001$; Table 1). Results of studies for HBAg and anti-HBAg in all patients are pending.

Table 1
Distribution of Hepatitis Cases Among Persons Who Did and Did Not Receive the Suspect Lot of Plasma Protein Fraction Indianapolis, Indiana

	Received Suspect Lot of PPF	Did Not Receive Suspect Lot of PPF
Hepatitis	11	0
No Hepatitis	9	22

$p < 0.001$

Further studies at this same hospital demonstrated that the administration of 2 other lots of PPF was also associated with the development of clinical viral hepatitis, with attack rates of 34% and 44%. These 2 lots were infused primarily in April and November 1973.

Because of the epidemiologic evidence incriminating these 3 lots and subsequent suggestive evidence for defective manufacturing methods the Armour Pharmaceutical Company issued a recall of all lots of PPF as well as normal serum albumin (human) 5%. The 5% albumin is included in the recall because it is manufactured by a similar process.

*Case definition

1) A history of jaundice or dark urine, and two minor symptoms, including fever, anorexia, nausea, vomiting, abdominal discomfort

2) Two minor symptoms with a documented rise in SGOT twice normal

(Reported by Charles E. Barrett, M.D., State Epidemiologist, Indiana State Board of Health; Lewellys F. Barker, M.D., Director, Division of Blood and Blood Products, Bureau of Biologics, U.S. Food and Drug Administration, Bethesda Maryland; the Phoenix Laboratories Division and the Viral Diseases Division, Bureau of Epidemiology, CDC; and 3 EIS Officers.)

Editorial Note

Plasma protein fraction is prepared from pooled human plasma by the Cohn cold alcohol fractionation process *(1)*. During fractionation, HBAg that may be present in the pooled plasma partially localizes into the PPF fraction *(2)*. The heating of PPF at 60° C for 10 hours, however, has been considered effective in rendering the hepatitis-B virus non-infectious *(3)*. The efficacy of this heating process is dependent upon the thoroughness of the mixing of the protein product and an even distribution of heat. Evidence indicates that inadequate heating is the cause for the presence of infective virus in this commercial product.

This correlation between PPF and viral hepatitis was identified because of this hospital's effective post-transfusion hepatitis surveillance program and its unusually meticulous record system of the distribution of blood derivatives. The lot numbers of all distributed units of PPF and albumin and the names of each recipient are routinely recorded. Undoubtedly, this was the key to uncovering the true nature of this outbreak.

References

1. Cohn EJ, Strong WI, Hughes DJ, et al: Preparation and properties of serum and plasma proteins. IV. A system for the separation into fractions of the protein and lipoprotein components of biological tissues and fluids. J Amer Chem Society 68:459, 1946

2. Holland PV, Alter HJ, Purcell RH, et al: Hepatitis-B antigen (HBAg) and antibody (anti-HBAg) in cold ethanol fractions of human plasma. Transfusion 12(6):363, 1972

3. Gellis SS, Neefe JR, Stokes J, et al: Chemical, clinical, and immunological studies on the products of human plasma fractionation. XXXVI. Inactivation of the virus of homologous serum hepatitis in solutions of normal human serum albumin by means of heat. J Clin Invest 27:239, 1948

AMPICILLIN-RESISTANT *HEMOPHILUS INFLUENZAE* – Texas

On February 5, 1974, a 19-month-old boy awakened at midnight with a slight fever and irritability. Three hours later, he had a temperature of 103° F and respiratory difficulty. Treatment with a vaporizer and baby aspirin was ineffective, and the child was taken to a physician. The physician gave the patient an injection of dexamethasone and sent him to a hospital.

During admission procedures at the hospital, the child had a respiratory arrest. He was intubated, and a diagnosis of acute epiglottitis was made. Because of a history of penicillin allergy, treatment was begun with chloramphenicol, 100 mg/kg/day intravenously. He was also treated with dexamethasone, 1 mg intramuscularly every 4 hours initially, later changed to every 6 hours. A blood culture and tracheal aspirate subsequently yielded *Hemophilus influenzae* type b.

The child improved rapidly and, after intravenous therapy was stopped, continued to take oral chloramphenicol, 250 mg every 6 hours until February 13. After 3 days of normal activities at home, he again developed a temperature of 103° F, and a diagnosis of bilateral otitis media and pneumonia was made. The child was begun on a decongestant and ampicillin, 250 mg intramuscularly, then 250 mg orally every 6 hours. On February 21, after apparent improvement, the boy developed a temperature of 105° F and was again hospitalized; X-ray showed a right middle lobe infiltrate. The child was begun on ampicillin 200 mg/kg/day intravenously. Although cerebrospinal fluid and several blood cultures were sterile, bilateral myringotomies yielded *H. influenzae* type b, which was reported to be resistant to ampicillin. On February 24, ampicillin was discontinued and intravenous chloramphenicol, 100 mg/kg/day, was begun. The child was treated with this regimen for 9 days and recovered without further incident.

Isolates of *H. influenzae* type b from the first and second episodes of illness were reported as ampicillin-resistant by the Brackenridge Hospital Laboratory. CDC laboratories reported minimum inhibitory concentrations (MICs) of 32 mcg/ml for strains isolated during the first hospitalization from the trachea and blood culture and isolates from the ear taken at the time of second hospitalization. Ampicillin disc sensitivities showed 11-13 mm of inhibition (6 mm disc diameter included).

(Reported by Richard Holt, M.D., private physician, Austin; Karen Teel, M.D., Director, Pediatric Education, and Judy White, ASMT, Bacteriologist, Brackenridge Hospital, Austin; John Sessums, M.D., Director, Austin-Travis County Health Department; M.S. Dickerson, M.D., State Epidemiologist, Bureau of Communicable Disease Control, Texas State Department of Health; the Antimicrobics Investigation Unit, Clinical Bacteriology Section, Bacteriology Division, Bureau of Laboratories, CDC; the Special Pathogens Section, and the Epidemiologic Services Laboratory Section, Bacterial Diseases Division, Bureau of Epidemiology, CDC; and an EIS Officer.)

Editorial Note

This is the third case of disease due to ampicillin-resistant *H. influenzae* reported in the MMWR; the first 2 were from Maryland and Georgia (MMWR, Vol. 23, No. 9). While these cases are a cause for concern, they do not warrant change from primary reliance on an ampicillin regimen for treatment of *H. influenzae* type b disease at this time.

The reliability of the ampicillin disc sensitivity test with *H. influenzae* is improved by: 1) storing the disc packet at -20° C until it is opened, then refrigerating and desiccating the packet until it is used for testing, and 2) using a diameter of 22 mm or greater (National Committee for Clinical Laboratory Standards criterion) to represent ampicillin disc sensitivity to *H. influenzae*. As in the 2 earlier cases, ampicillin disc sensitivity testing showed the isolates not to be sensitive, and tube dilution results confirmed this.

SURVEILLANCE SUMMARY
MEASLES – Oregon, October 1973–February 1974

In the last 12 weeks of 1973 and the first 11 weeks of 1974, no cases of measles were reported in Oregon (Figure 1). During this period, active surveillance continued, with intensive follow-up of all suspect cases. These follow-up efforts have included performing serologic tests, conducting epidemiologic investigations, and determining whether clinical manifestations were consistent with measles. In previous years during the same period a steady and consistent increase in measles cases had been reported in Oregon.

The decrease in measles is largely attributable to extensive outbreak control programs conducted during the spring of 1973, institution of telephonic reporting of measles, and enactment of a mandatory immunization law for school entry. Assessment surveys indicate that 81.9% of the children entering Oregon schools have either received measles vaccination or give a history of having had the disease.

(Reported by Lester Cour, Immunization Program Director, Katherine Jones, M.S.P.H., Assistant Epidemiologist, and John A. Googins, M.D., M.P.H., State Epidemiologist, Oregon State Health Division; a Public Health Advisor, and an EIS Officer.)

Figure 1
REPORTED MEASLES CASES IN OREGON, 1970-1974

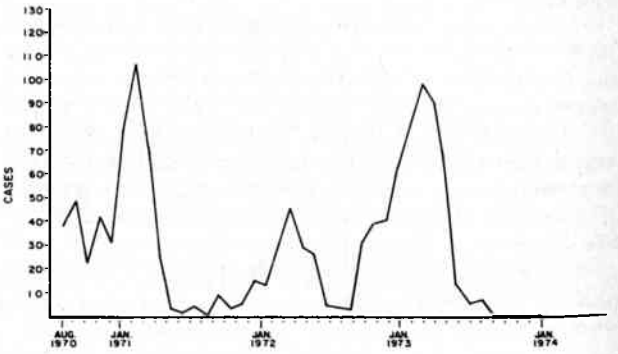

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	11th WEEK ENDING		MEDIAN 1969-1973	CUMULATIVE, FIRST 11 WEEKS		MEDIAN 1969-1973
	March 16, 1974	March 17, 1973		1974	1973	
Aseptic meningitis	23	33	29	361	393	376
Brucellosis	2	1	4	18	18	20
Chickenpox	3,814	6,869	— — —	38,976	57,786	— — —
Diphtheria	10	4	7	35	54	47
Encephalitis:						
Primary: Arthropod-borne and unspecified	15	18	19	172	182	211
Post-Infectious	7	6	7	44	41	48
Hepatitis, Viral:						
Type B	166	160	160	1,808	1,497	1,497
Type A	933	1,030	1,187	9,349	10,610	11,908
Type unspecified	246			1,776		
Malaria	—	7	51	33	45	493
Measles (rubeola)	665	782	972	5,549	7,272	7,949
Meningococcal infections, total	39	44	83	320	366	730
Civilian	37	43	67	314	354	622
Military	2	1	7	6	12	58
Mumps	1,847	2,249	2,907	18,287	20,722	25,316
Pertussis	33	— — —	— — —	326	— — —	— — —
Rubella (German measles)	364	1,130	1,871	2,638	6,780	9,509
Tetanus	2	—	1	9	9	15
Tuberculosis, new active	586	645	— — —	5,737	6,067	— — —
Tularemia	1	—	1	22	11	23
Typhoid fever	8	5	6	75	54	53
Typhus, tick-borne (Rky. Mt. spotted fever)	—	—	—	14	11	4
Venereal Diseases:						
Gonorrhea	15,541	15,395	— — —	175,367	158,212	— — —
Syphilis, primary and secondary	425	460	— — —	4,921	5,284	— — —
Rabies in animals	68	70	86	504	637	770

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	2	Poliomyelitis, total:	1
Botulism:	3	Paralytic:	1
Congenital rubella syndrome: N.C. 1, Tex. 1	20	Psittacosis: Minn. 1	5
Leprosy: Calif. 3, Hawaii 1, Md. 1	18	Rabies in man:	—
Leptospirosis:	14	Trichinosis: La. 2, R.I. 2	29
Plague:	—	Typhus, murine:	5

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING MARCH 16, 1974 AND MARCH 17, 1973 (11th WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary	Arthropod-borne and Unspecified	Post Infectious	Type B	Type A	Type Unspecified		
	1974	1974	1974	1974	Cum. 1974	1974	1973	1974	1974	1974	1974	1974	Cum. 1974
UNITED STATES	23	2	3,814	10	35	15	18	7	166	933	246	–	33
NEW ENGLAND	1	–	697	–	–	–	2	–	5	27	11	–	3
Maine*	–	–	7	–	–	–	–	–	1	–	–	–	–
New Hampshire*	–	–	35	–	–	–	–	–	–	1	–	–	–
Vermont	–	–	67	–	–	–	–	–	–	1	1	–	–
Massachusetts	1	–	269	–	–	–	2	–	2	4	10	–	1
Rhode Island	–	–	151	–	–	–	–	–	2	3	–	–	2
Connecticut	–	–	168	–	–	–	–	–	–	18	–	–	–
MIDDLE ATLANTIC	–	–	135	–	–	2	2	–	30	114	33	–	2
Upstate New York	–	–	28	–	–	1	1	–	4	52	12	–	–
New York City	–	–	104	–	–	–	–	–	3	13	–	–	1
New Jersey	–	–	NN	–	–	1	–	–	9	24	18	–	–
Pennsylvania*	–	–	3	–	–	–	1	–	14	25	3	–	1
EAST NORTH CENTRAL	3	–	1,531	–	–	3	4	1	20	149	24	–	3
Ohio	–	–	257	–	–	1	2	–	–	21	–	–	2
Indiana	–	–	109	–	–	–	1	–	–	19	7	–	–
Illinois	3	–	–	–	–	1	–	1	9	21	15	–	1
Michigan	–	–	614	–	–	1	1	–	9	76	2	–	–
Wisconsin	–	–	551	–	–	–	–	–	2	12	–	–	–
WEST NORTH CENTRAL	1	1	412	–	–	2	2	–	6	36	15	–	1
Minnesota	–	–	47	–	–	–	1	–	1	5	–	–	–
Iowa	–	–	268	–	–	1	–	–	4	9	1	–	–
Missouri	–	1	52	–	–	1	–	–	1	7	13	–	–
North Dakota	–	–	4	–	–	–	–	–	–	–	–	–	–
South Dakota	–	–	–	–	–	–	–	–	–	5	–	–	1
Nebraska	–	–	7	–	–	–	1	–	–	–	1	–	–
Kansas	1	–	34	–	–	–	–	–	–	10	–	–	–
SOUTH ATLANTIC	6	–	234	–	1	2	7	1	14	151	22	–	7
Delaware	1	–	6	–	–	–	–	–	–	–	–	–	–
Maryland	–	–	3	–	–	–	1	–	3	10	3	–	1
District of Columbia	–	–	4	–	–	–	–	–	3	–	–	–	2
Virginia	–	–	14	–	–	–	4	–	1	16	6	–	1
West Virginia*	–	–	180	–	–	–	–	–	1	4	–	–	–
North Carolina*	–	–	NN	–	–	1	1	–	1	21	1	–	1
South Carolina	1	–	25	–	–	–	–	–	–	8	1	–	–
Georgia	–	–	2	–	–	–	–	–	–	19	–	–	–
Florida	4	–	–	–	1	1	1	1	5	73	11	–	2
EAST SOUTH CENTRAL	–	–	118	–	–	–	–	2	5	52	12	–	–
Kentucky	–	–	115	–	–	–	–	–	2	11	9	–	–
Tennessee	–	–	–	–	–	–	–	2	3	36	1	–	–
Alabama	–	–	1	–	–	–	–	–	–	1	2	–	–
Mississippi	–	–	2	–	–	–	–	–	–	4	–	–	–
WEST SOUTH CENTRAL	4	–	271	–	6	1	1	–	17	127	12	–	2
Arkansas	–	–	11	–	–	–	–	–	1	7	2	–	–
Louisiana*	2	–	NN	–	–	–	–	–	15	17	2	–	1
Oklahoma	–	–	11	–	–	–	–	–	1	23	8	–	1
Texas	2	–	249	–	6	1	1	–	–	80	–	–	–
MOUNTAIN	–	–	118	–	1	–	–	–	9	98	49	–	1
Montana*	–	–	37	–	–	–	–	–	–	8	–	–	–
Idaho	–	–	–	–	–	–	–	–	1	4	–	–	–
Wyoming	–	–	–	–	–	–	–	–	–	–	–	–	–
Colorado	–	–	35	–	–	–	–	–	8	14	37	–	1
New Mexico	–	–	45	–	1	–	–	–	–	24	–	–	–
Arizona*	–	–	–	–	–	–	–	–	–	35	3	–	–
Utah	–	–	1	–	–	–	–	–	–	4	9	–	–
Nevada*	–	–	–	–	–	–	–	–	–	9	–	–	–
PACIFIC	8	1	298	10	27	5	–	3	60	179	68	–	14
Washington	1	–	271	10	24	–	–	1	6	22	25	–	–
Oregon	–	–	–	–	–	1	–	–	6	15	5	–	–
California*	7	1	–	–	1	4	–	2	48	141	35	–	14
Alaska	–	–	4	–	2	–	–	–	–	–	–	–	–
Hawaii	–	–	23	–	–	–	–	–	–	1	3	–	–
Guam*	–	–	–	–	–	–	–	–	–	–	–	–	1
Puerto Rico	–	–	43	–	–	–	–	–	1	–	9	–	–
Virgin Islands*	–	–	10	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Brucellosis: Pa. 1 (1973), Montana 2 (1974)
Chickenpox: Me. 12, N.H. 20, Calif. 11, Guam 1 (1974)
Hepatitis B: Pa. 2, La. delete 1 (1973) W. Va. 1, N. C. delete 1, Nevada 1, Pa. delete 2, Guam 1 (1974)
Hepatitis A: La. delete 8, V.I. 1 (1973), Me. 6, N.H. 6, W. Va. delete 1, La. delete 1, Ariz. delete 1, Nevada 9, Guam 11 (1974)
Hepatitis Unspecified: Me. 1, La. delete 1 (1974)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING MARCH 16, 1974 AND MARCH 17, 1973 (11th WEEK) – Continued

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1974	Cumulative		1974	Cumulative		1974	Cum. 1974	1974	1974	Cum. 1974	Cum. 1974
		1974	1973		1974	1973						
UNITED STATES	665	5,549	7,272	39	320	366	1,847	18,287	33	364	2,638	9
NEW ENGLAND	21	296	2,929	–	19	19	269	2,624	–	40	205	–
Maine*	2	12	11	–	–	–	28	440	–	11	32	–
New Hampshire*	12	152	516	–	4	2	–	117	–	–	6	–
Vermont	–	1	59	–	–	2	2	9	–	–	5	–
Massachusetts	1	68	1,413	–	6	7	19	398	–	21	105	–
Rhode Island	3	43	234	–	3	1	91	832	–	1	10	–
Connecticut	3	20	696	–	6	7	129	828	–	7	47	–
MIDDLE ATLANTIC	335	2,041	570	3	36	52	161	1,405	5	26	236	1
Upstate New York	4	27	138	3	15	15	24	261	1	18	70	–
New York City	21	105	323	–	10	13	22	207	4	2	33	–
New Jersey	295	1,644	58	–	8	11	20	351	–	1	64	1
Pennsylvania	15	265	51	–	3	13	95	586	–	5	69	–
EAST NORTH CENTRAL	161	2,184	2,039	2	32	37	380	5,344	10	77	935	–
Ohio*	11	934	97	–	8	21	54	1,339	–	23	114	–
Indiana	4	71	200	–	2	1	23	465	–	5	240	–
Illinois	53	384	585	1	5	3	21	505	3	12	134	–
Michigan	82	661	767	1	11	9	191	2,265	–	24	334	–
Wisconsin	11	134	390	–	6	3	91	770	7	13	113	–
WEST NORTH CENTRAL	18	162	195	3	18	31	189	1,433	2	7	59	2
Minnesota	–	76	13	–	5	–	3	25	–	–	2	–
Iowa	2	6	139	1	5	3	89	1,022	–	–	5	–
Missouri	4	23	11	1	4	16	74	170	–	6	14	2
North Dakota	–	13	21	–	1	3	1	8	–	1	6	–
South Dakota	–	1	–	–	–	2	–	2	–	–	–	–
Nebraska	–	1	1	–	–	3	6	41	2	–	3	–
Kansas	12	42	10	1	3	4	16	165	–	–	29	–
SOUTH ATLANTIC	36	205	239	16	73	65	286	1,947	2	24	221	2
Delaware*	–	2	1	–	3	–	1	30	–	2	7	–
Maryland	–	2	–	3	12	12	9	38	1	–	–	–
District of Columbia	–	–	–	–	–	1	–	22	–	–	1	–
Virginia	2	12	17	1	11	8	27	142	–	1	8	–
West Virginia	7	54	71	–	2	1	180	1,149	–	1	46	–
North Carolina	1	2	4	4	15	12	NN	NN	–	1	5	–
South Carolina	3	13	17	5	9	5	3	17	1	16	85	–
Georgia	–	1	8	–	4	14	–	–	–	–	2	–
Florida	23	119	121	3	17	12	66	549	–	3	67	2
EAST SOUTH CENTRAL	8	42	148	4	35	22	186	1,861	1	17	180	2
Kentucky	7	33	52	3	16	6	87	717	–	4	48	–
Tennessee	–	–	73	1	17	11	84	955	1	8	99	1
Alabama	–	1	–	–	2	2	12	165	–	5	24	–
Mississippi	1	8	23	–	–	3	3	24	–	–	9	1
WEST SOUTH CENTRAL	12	73	302	6	57	56	125	1,149	–	27	94	1
Arkansas	–	4	16	–	4	6	–	84	–	–	7	–
Louisiana*	–	6	27	2	13	8	17	61	–	–	6	–
Oklahoma	2	10	7	1	8	4	3	161	–	2	16	–
Texas	10	53	252	3	32	38	105	843	–	25	65	1
MOUNTAIN	25	199	206	1	8	12	35	569	–	41	142	–
Montana	–	110	2	–	1	2	5	96	–	–	56	–
Idaho	2	40	99	–	1	1	5	128	–	–	5	–
Wyoming	–	3	5	–	–	–	–	4	–	–	–	–
Colorado*	5	12	20	–	–	2	23	224	–	4	30	–
New Mexico	16	28	71	–	2	1	2	114	–	14	24	–
Arizona	–	3	8	1	3	3	–	–	–	–	–	–
Utah	–	–	1	–	1	1	–	3	–	2	4	–
Nevada	2	3	–	–	–	2	–	–	–	21	23	–
PACIFIC	49	347	644	4	42	72	216	1,955	13	105	566	1
Washington	3	23	292	1	6	6	59	743	3	16	162	–
Oregon	–	–	159	–	6	4	34	395	2	11	69	–
California	44	321	188	2	27	61	115	745	8	78	326	1
Alaska	–	–	–	–	2	1	5	55	–	–	–	–
Hawaii	2	3	5	1	1	–	3	17	–	–	9	–
Guam*	–	1	3	–	–	–	–	66	–	–	–	–
Puerto Rico	37	159	454	–	–	3	17	214	–	–	4	1
Virgin Islands	–	–	–	–	–	–	–	3	–	–	–	1

*Delayed reports: Measles: Me. 1, N.H. 3, Ohio 2, Colorado delete 2 (1974)
Meningococcal Infections: Del. 1 (1973)
Mumps: Me. 22, N.H. 15, Guam 10 (1974)
Pertussis: La. 3 (1974)
Rubella: Me. 3, Colorado 1 (1974)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING MARCH 16, 1974 AND MARCH 17, 1973 (11th WEEK) – Continued

AREA	TUBERCULOSIS (New Active)		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1974	Cum. 1974	Cum. 1974	1974	Cum. 1974	1974	Cum. 1974	1974	Cumulative 1974	Cumulative 1973	1974	Cumulative 1974	Cumulative 1973	Cum. 1974
UNITED STATES	586	5,737	22	8	75	–	14	15,541	175,367	158,212	425	4,921	5,284	504
NEW ENGLAND	22	261	–	–	2	–	–	264	4,479	4,124	9	102	137	3
Maine	–	21	–	–	–	–	–	38	348	238	–	10	6	1
New Hampshire	–	10	–	–	–	–	–	12	144	145	–	3	4	–
Vermont	–	3	–	–	–	–	–	11	144	52	–	–	8	–
Massachusetts	14	147	–	–	–	–	–	–	1,913	1,955	4	40	55	–
Rhode Island	2	27	–	–	2	–	–	60	402	490	–	3	5	2
Connecticut	6	53	–	–	–	–	–	143	1,528	1,244	5	46	59	–
MIDDLE ATLANTIC	110	961	1	–	12	–	9	2,251	22,841	20,624	99	1,113	1,197	3
Upstate New York	16	89	1	–	–	–	–	632	4,280	5,049	6	108	82	1
New York City	42	407	–	–	11	–	–	576	8,987	8,180	49	650	756	–
New Jersey	8	205	–	–	1	–	–	359	3,944	2,761	19	174	198	–
Pennsylvania	44	260	–	–	–	–	9	684	5,630	4,634	25	181	161	2
EAST NORTH CENTRAL	75	747	–	–	5	–	–	2,005	22,993	18,666	23	259	301	30
Ohio *	11	216	–	–	–	–	–	655	8,386	6,053	4	48	61	–
Indiana	5	116	–	–	–	–	–	221	2,356	2,197	2	40	66	1
Illinois	39	201	–	–	3	–	–	310	2,890	2,324	9	61	42	2
Michigan	20	214	–	–	2	–	–	602	6,827	6,044	4	83	112	–
Wisconsin	–	–	–	–	–	–	–	217	2,534	2,048	4	27	20	27
WEST NORTH CENTRAL	19	189	8	1	3	–	–	780	8,825	9,238	15	82	63	129
Minnesota	1	28	–	1	2	–	–	214	2,195	1,817	2	10	24	64
Iowa	1	16	–	–	–	–	–	92	1,121	1,198	1	9	6	27
Missouri	13	108	7	–	1	–	–	280	2,589	3,441	10	47	19	3
North Dakota	2	4	–	–	–	–	–	19	159	145	–	–	1	26
South Dakota	1	10	1	–	–	–	–	35	437	443	–	1	1	–
Nebraska	–	5	–	–	–	–	–	–	677	888	–	2	1	–
Kansas	1	18	–	–	–	–	–	140	1,647	1,306	2	13	11	9
SOUTH ATLANTIC	137	1,208	1	1	11	–	4	3,660	44,799	41,123	112	1,618	1,557	66
Delaware	–	18	–	–	–	–	–	100	697	549	1	24	19	–
Maryland	23	140	–	–	1	–	1	351	4,220	3,661	11	188	177	–
District of Columbia	12	87	–	–	–	–	–	334	3,534	3,456	9	147	172	–
Virginia	15	151	1	–	–	–	–	310	3,951	3,879	24	212	138	30
West Virginia	5	72	–	–	3	–	–	42	564	599	–	5	6	10
North Carolina *	23	225	–	–	–	–	–	308	5,834	5,999	12	165	120	1
South Carolina	7	115	–	–	–	–	–	389	5,189	4,466	4	218	232	1
Georgia	20	132	–	–	–	–	2	679	8,820	7,521	15	169	316	18
Florida	32	268	–	1	7	–	1	1,147	11,990	10,993	36	490	377	6
EAST SOUTH CENTRAL	57	554	6	3	13	–	–	1,195	14,760	13,676	25	271	382	76
Kentucky *	10	120	1	–	7	–	–	183	1,891	1,572	7	62	163	51
Tennessee	17	170	3	1	4	–	–	505	5,966	5,236	14	105	91	17
Alabama	15	170	2	2	2	–	–	241	3,746	3,744	–	51	29	8
Mississippi	15	94	–	–	–	–	–	266	3,157	3,124	4	53	99	–
WEST SOUTH CENTRAL	61	690	5	–	4	–	–	2,264	24,166	20,716	41	483	615	111
Arkansas	15	111	1	–	1	–	–	135	2,409	2,685	1	24	43	17
Louisiana *	15	114	1	–	1	–	–	446	5,210	4,180	2	130	169	3
Oklahoma	–	50	2	–	–	–	–	216	2,033	2,245	7	36	52	23
Texas	31	415	1	–	2	–	–	1,467	14,514	11,606	31	293	351	68
MOUNTAIN	17	175	1	2	7	–	1	573	6,451	6,033	12	114	176	16
Montana	2	15	–	–	–	–	–	20	379	359	–	–	–	–
Idaho	1	9	–	–	–	–	–	26	449	328	–	1	4	–
Wyoming	1	3	1	–	2	–	–	13	131	98	–	1	5	2
Colorado	–	16	–	–	–	–	1	183	1,833	1,662	7	26	64	–
New Mexico *	–	48	–	2	2	–	–	51	919	948	–	18	20	7
Arizona	10	57	–	–	3	–	–	166	1,965	1,754	5	38	46	7
Utah	2	11	–	–	–	–	–	26	302	330	–	6	4	–
Nevada	1	16	–	–	–	–	–	88	473	554	–	24	33	–
PACIFIC	88	952	–	1	18	–	–	2,549	26,053	24,012	89	879	856	70
Washington	11	66	–	–	2	–	–	162	2,254	2,222	–	27	34	–
Oregon	6	38	–	–	–	–	–	225	2,089	2,172	3	19	20	8
California	63	763	–	1	16	–	–	2,102	20,536	18,522	86	821	762	62
Alaska	–	20	–	–	–	–	–	17	569	600	–	1	19	–
Hawaii	8	65	–	–	–	–	–	43	605	496	–	11	21	–
Guam *	–	3	–	–	–	–	–	–	35	71	–	–	–	–
Puerto Rico	17	134	–	–	–	–	–	67	603	763	19	192	166	14
Virgin Islands *	–	–	–	–	–	–	–	7	51	47	4	7	6	–

*Delayed reports: Tuberculosis: Ohio delete 20 (1973), N.C. delete 1, Ky. delete 3 (1973)
Typhoid: N.M. 1 (1973)
Gonorrhea: La. delete 22 (1973), La. delete 5, V.I. 5, Guam delete 45 (1974)
Syphilis: V.I. 4 (1974)

Week No. 11

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING MARCH 16, 1974

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

Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
NEW ENGLAND	652	402	169	36	15	39
Boston, Mass.	217	119	60	14	8	17
Bridgeport, Conn.	30	19	6	3	1	4
Cambridge, Mass.	29	23	6	–	–	4
Fall River, Mass.	25	15	8	1	–	–
Hartford, Conn.	45	24	12	6	1	1
Lowell, Mass.	27	16	8	1	1	–
Lynn, Mass.	26	19	6	–	–	–
New Bedford, Mass.	29	21	6	2	–	1
New Haven, Conn.	39	18	18	1	–	–
Providence, R. I.	49	30	12	3	2	6
Somerville, Mass.	12	11	1	–	–	–
Springfield, Mass.	45	33	8	2	1	4
Waterbury, Conn.	26	17	5	3	1	–
Worcester, Mass.	53	37	13	–	–	2
MIDDLE ATLANTIC	3,637	2,243	952	238	82	179
Albany, N. Y.	49	32	11	2	1	2
Allentown, Pa.	27	18	7	1	1	2
Buffalo, N. Y.	145	79	43	10	4	10
Camden, N. J.	52	29	18	3	1	3
Elizabeth, N. J.	24	15	9	–	–	–
Erie, Pa.	40	27	9	1	1	3
Jersey City, N. J.	55	39	12	2	1	3
Newark, N. J.	85	40	21	13	6	4
New York City, N. Y.†	1,675	1,063	426	105	36	95
Paterson, N. J.	45	20	16	7	1	8
Philadelphia, Pa.	805	471	214	61	21	6
Pittsburgh, Pa.	185	99	63	12	4	9
Reading, Pa.	38	25	10	–	1	5
Rochester, N. Y.	135	101	23	6	1	11
Schenectady, N. Y.	19	12	6	1	–	2
Scranton, Pa.	41	31	9	1	–	1
Syracuse, N. Y.	90	60	22	5	1	3
Trenton, N. J.	57	32	17	4	2	3
Utica, N. Y.	32	24	7	1	–	3
Yonkers, N. Y.	38	26	9	3	–	6
EAST NORTH CENTRAL	2,536	1,504	661	170	102	88
Akron, Ohio	79	50	23	2	4	–
Canton, Ohio	30	20	8	–	1	3
Chicago, Ill.	656	377	174	61	24	29
Cincinnati, Ohio	159	94	49	10	2	6
Cleveland, Ohio	233	130	65	15	8	9
Columbus, Ohio	132	74	27	11	11	7
Dayton, Ohio	112	69	29	6	4	2
Detroit, Mich.	334	181	88	29	22	5
Evansville, Ind.	37	25	9	1	1	1
Fort Wayne, Ind.	60	40	13	2	1	3
Gary, Ind.	44	26	11	4	1	1
Grand Rapids, Mich.	55	35	18	–	1	2
Indianapolis, Ind.	134	80	39	6	4	2
Madison, Wis.	41	20	9	2	5	4
Milwaukee, Wis.	120	87	22	2	4	5
Peoria, Ill.	37	19	15	1	2	–
Rockford, Ill.	51	30	15	4	2	3
South Bend, Ind.	51	35	8	4	–	4
Toledo, Ohio	106	70	24	5	3	2
Youngstown, Ohio	65	42	15	5	2	–
WEST NORTH CENTRAL	872	546	211	39	40	36
Des Moines, Iowa	59	42	12	2	–	2
Duluth, Minn.	28	21	3	–	3	3
Kansas City, Kans.	34	15	13	2	2	1
Kansas City, Mo.	133	72	43	7	6	2
Lincoln, Nebr.	27	21	4	1	–	–
Minneapolis, Minn.	108	68	27	3	5	3
Omaha, Nebr.	100	70	17	4	4	1
St. Louis, Mo.	215	132	57	8	11	6
St. Paul, Minn.	85	63	11	4	2	7
Wichita, Kans.	83	42	24	8	7	11
SOUTH ATLANTIC	1,426	812	360	75	122	59
Atlanta, Ga.	144	74	44	13	7	2
Baltimore, Md.	264	157	59	14	14	2
Charlotte, N. C.	63	37	17	3	5	–
Jacksonville, Fla.	95	49	32	5	3	1
Miami, Fla.	134	83	37	8	5	7
Norfolk, Va.	58	32	22	2	1	4
Richmond, Va.	90	60	21	4	2	9
Savannah, Ga.	34	21	12	1	–	1
St. Petersburg, Fla.	106	86	16	2	2	4
Tampa, Fla.	77	53	14	4	3	13
Washington, D. C.	301	129	63	16	80	13
Wilmington, Del.	60	31	23	3	–	3
EAST SOUTH CENTRAL	678	371	206	45	22	34
Birmingham, Ala.	109	51	35	10	7	4
Chattanooga, Tenn.	51	30	13	2	3	–
Knoxville, Tenn.	27	15	9	2	1	–
Louisville, Ky.	139	86	42	3	3	10
Memphis, Tenn.	177	94	52	16	2	6
Mobile, Ala.	42	20	17	3	–	4
Montgomery, Ala.	37	22	11	2	1	3
Nashville, Tenn.	96	53	27	7	5	7
WEST SOUTH CENTRAL	1,278	682	371	100	62	59
Austin, Tex.	45	17	17	4	3	4
Baton Rouge, La.	48	27	14	4	2	3
Corpus Christi, Tex.	47	28	13	3	3	3
Dallas, Tex.	193	98	59	17	11	7
El Paso, Tex.	51	28	12	2	6	5
Fort Worth, Tex.	80	56	15	–	5	2
Houston, Tex.	266	127	86	27	11	6
Little Rock, Ark.	65	49	11	1	2	7
New Orleans, La.	173	78	61	21	5	5
San Antonio, Tex.	155	83	37	13	8	6
Shreveport, La.	80	41	30	5	3	3
Tulsa, Okla.	75	50	16	3	3	8
MOUNTAIN	574	335	154	40	15	35
Albuquerque, N. Mex.	51	22	14	7	3	5
Colorado Springs, Colo.	35	23	7	2	1	4
Denver, Colo.	105	66	25	7	1	6
Las Vegas, Nev.	43	17	19	4	2	3
Ogden, Utah	25	18	5	–	–	6
Phoenix, Ariz.	127	65	41	12	4	2
Pueblo, Colo.	32	22	5	2	2	6
Salt Lake City, Utah	39	21	13	1	2	3
Tucson, Ariz.	117	81	25	5	–	–
PACIFIC	1,726	1,092	417	116	44	41
Berkeley, Calif.	26	17	6	3	–	1
Fresno, Calif.	65	39	17	6	2	2
Glendale, Calif.	29	22	4	–	–	1
Honolulu, Hawaii	60	35	16	6	2	–
Long Beach, Calif.	107	65	32	5	4	3
Los Angeles, Calif.	556	347	130	42	13	10
Oakland, Calif.	88	55	21	6	2	1
Pasadena, Calif.	29	25	3	–	1	2
Portland, Oreg.	133	93	25	8	3	2
Sacramento, Calif.	54	32	14	6	1	1
San Diego, Calif.	126	74	36	6	5	1
San Francisco, Calif.	168	104	44	10	3	6
San Jose, Calif.	45	28	11	5	–	1
Seattle, Wash.	136	89	32	9	3	5
Spokane, Wash.	65	42	17	2	3	3
Tacoma, Wash.	39	25	9	2	2	2
Total	13,379	7,987	3,501	859	504	570
Expected Number	12,812	7,584	3,486	817	438	511

†Delayed report for week ending March 9, 1974

EPIDEMIOLOGIC NOTES AND REPORTS
IMPORTED SCRUB TYPHUS – Connecticut

On November 25, 1973, a 38-year-old man from Greenwich, Connecticut, developed an acute illness characterized by fever, headache, and maculopapular cutaneous rash after returning from a vacation in Japan. On November 6, prior to his vacation, he had received a smallpox vaccination and was thought to have systemic generalized vaccinia. He was given vaccinia immune globulin. His illness progressed, with splenomegaly, right lower lobe pneumonitis, and symptoms of encephalitis. No lymphadenopathy was observed.

An interview with the patient revealed that while in Japan, he had taken a side trip to the Mount Fujiyama area, the base of which is an endemic focus for scrub typhus. He recalled walking through low scrub, where he could have been bitten by an infected mite. Three days later, an eschar developed on his left ankle.

On the basis of the epidemiologic factors and clinical manifestations, the diagnosis of scrub typhus was made, and tetracycline therapy was initiated. The patient's condition rapidly improved, and he is now well and has returned to work. The results of fluorescent antibody tests on acute and convalescent serum specimens are shown in Table 2.

(Reported by Peter Maher, M.D., private physician, George Kraus, M.D., Director of Health, Greenwich, Connecticut; James C. Hart, M.D., State Epidemiologist, and Martin Ross, Ph.D., Chief, Virology Section, Laboratory Division, Connecticut State Department of Health; and an EIS Officer.)

Editorial Note

Rickettsia tsutsugamushi, transmitted by Trombiculidae mites, is widely distributed throughout eastern Asia and the larger islands of the South and East Pacific. Endemic foci have been found from northern Australia to southeastern Siberia, as far west as the Kirgiz Republic of the USSR and in valleys as high as 10,000 feet in the Himalaya Mountains. It is primarily a rural or sylvan disease where ecological "mite islands" as small as 1 square meter may serve as reservoirs and intense foci of transmission. Imported cases diagnosed and reported to CDC have been uncommon, occurring approximately every 1½ to 2 years.

The untreated disease is frequently severe and often fatal, but prompt recognition and treatment with tetracycline or chloramphenicol frequently results in complete recovery. The fluorescent antibody technique using strain-specific *R. tsutsugamushi* antigens provides a more sensitive and accurate diagnostic method than the Proteus OXK complement fixation test. However, with the high specificity of some strains, several antigens must be used to screen effectively for scrub typhus.

Table 2
Results of Fluorescent Antibody Tests on Acute and Convalescent Serum Specimens

Fluorescent Antibody Test	Acute Specimen	Convalescent Specimen
*Karp (Scrub typhus)	1:640	1:10,240
*Gilliam (Scrub typhus)	1:160	1:2,560
*Kato (Scrub typhus)	1:640	1:2,560
Rocky Mt. Spotted Fever	1:10	1:10
Q Fever	1:10	1:10

*Type-specific antigen

WATERBORNE SHIGELLOSIS – Arizona

In June 1973, 2 brothers, ages 4 and 9, were admitted to a hospital in Fort Huachuca, Arizona, with fever and diarrhea. Fecal cultures revealed *Shigella* organisms of undetermined serotype. The children recovered uneventfully with parenteral ampicillin therapy. Stool specimens obtained from the other 2 family members, the mother and another brother, were negative for pathogens.

The family lived in a trailer in a remote area beside a small stream bed, which is part of the natural drainage system of the San Pedro Valley. A shallow well located on the bank of the stream supplied the trailer with drinking water, and the family frequently used the stream for wading. Bacteriologic analysis of the stream and well water revealed high coliform counts and *Shigella* organisms. Due to the drainage pattern of the valley and because no other residences were located within several miles of the affected family's home, contamination was most likely caused by effluent from a sewage oxidation pond approximately 10 miles upstream. Normally, the stream disappeared into the dry stream bed within a mile of the oxidation plant, but heavy rains had recently occurred in the area, filling the stream bed and enabling contaminated effluent to be transported downstream to the shallow well site. No further sources of infection were located by civilian health authorities.

(Reported by COL John P. Canby, MC, MEDDAC Commander, CPT Richard G. Fessler, MSC, Sanitary Engineer, 1LT Randall R. Haut, MSC, Sanitary Engineer, Health and Environmental Activity, MEDDAC, Fort Huachuca, Arizona.)

Editorial Note

Waterborne shigellosis is uncommon in the United States; when it occurs, however, a contaminated private water supply is usually incriminated. Contaminated well water, in fact, is the most frequently reported source of all waterborne diseases, usually because it is untreated prior to use (*1*). If a well is improperly constructed or housed (particularly if it is unsealed or has no sanitary cap), flooding, seepage from septic tanks, or surface contamination of the well may result in massive introduction of waste materials into the water supply, often enough to cause a noticeable change in color, odor, or taste (*2*).

References

1. Craun GF, McCabe LJ: Review of the causes of waterborne disease outbreaks. Water Technology, p 74, 1973

2. Center for Disease Control: Shigella Surveillance Rep No. 33, April 1973

SALMONELLA TYPHIMURIUM OUTBREAK IN A NEWBORN NURSERY – California

An outbreak of salmonellosis in the spring of 1973 at a private hospital in San Francisco, California, was traced to an infected obstetric patient. One day prior to delivery, a 22-year-old woman saw an obstetrician for the first time during her pregnancy. The physician obtained a cervical smear and culture as part of his workup. The culture ultimately grew *Salmonella typhimurium* as did a stool specimen from this woman obtained during subsequent investigation of a nursery outbreak.

The woman's baby was born on March 23, 1973. Two days later, both she and her infant developed diarrhea. On March 27, the baby was transferred with an "acute abdomen" to a second hospital. Following surgery, the infant died on March 29 of "neonatal necrotizing enterocolitis". Blood and stool cultures from the baby grew *S. typhimurium.*

Subsequently, a second infant born in the first hospital developed diarrhea due to *S. typhimurium*. The child was born on March 21 and developed diarrhea after discharge home, probably on March 31. A third baby, born March 26, developed diarrhea on March 27 and has had persistent carriage of *S. typhimurium* since it was first detected on March 29.

All 3 infants were attended by different obstetricians and housestaff, and they were delivered on different working shifts. Stool cultures on 23 infants who had contact with the 3 cases of neonatal salmonella gastroenteritis revealed no further isolations of salmonellae and no additional illnesses. All nursery staff were cultured, and no salmonellae were isolated.

Editorial Note

In all probability, the index case became infected by contaminated vaginal flora during delivery. Subsequent cases were probably the result of a breakdown in technique by hospital staff with transfer of organisms by cross-infection.

To prevent such outbreaks in newborn nurseries, personnel should wash hands before and after every infant contact, and reporting must also be improved, particularly, as in this instance, between hospitals that have cared for the same patient. Furthermore, it is important that follow-up data be obtained on all infants after discharge. In view of the present trend toward shorter hospitalizations for normal deliveries, observation of newborn infants during brief hospitalizations (e.g. only 2 or 3 days) will miss many nosocomial infections of gastroenteritis or cutaneous staphylococcal disease which first become apparent after discharge.

(Reported by Selma K. Dritz, M.D., Assistant Director, Bureau of Disease Control and Adult Health, San Francisco Department of Public Health; and S. Benson Werner, M.D., Medical Epidemiologist, Infectious Disease Section, California State Department of Health.)

INTERNATIONAL NOTES

JUNGLE YELLOW FEVER – Panama

Two cases of jungle yellow fever, 1 of which was fatal, have been reported in the Chepo District of Panama Province. The 2 cases, which were both confirmed, came from the localities of Las Piraguas and Maje Arriba. This is the first time that cases of jungle yellow fever have been reported from Panama since 1957 when cases occurred in the Province of Colon.

(Reported by the World Health Organization: Weekly Epidemiological Record *49(9):76, 1 March 1974.)*

CURRENT TRENDS

NEW ACTIVE TUBERCULOSIS CASES United States, 1973

Reports from state health departments, based on provisional information, indicate that 31,015 new cases of active tuberculosis were reported for the United States during 1973, with a new case rate of 14.8 per 100,000 population (Table 3).

The number of new cases was 5.7% lower than the total for the preceding year. The greater part of the reduction was in the metropolitan counties and large cities, which showed a 9.0% decrease in the number of cases. The decrease in the number of cases in the rest of the country was 3.5%.

The U.S. case rate decreased by 6.3% (15.8 to 14.8). In 32 states, the 1973 case rate was lower than the final 1972 rate, and in 18 states the rate was higher. Case rates for states ranged from a high of 35.9 per 100,000 population in Hawaii to a low of 4.2 in Nebraska.

(Reported by the Tuberculosis Control Division, Bureau of State Services, CDC.)

Table 3
New Active Tuberculosis Cases and Case Rates: United States, 1972 and 1973

STATES	1972 Provisional		1972 Final		1973 Provisional	
	Number	Rate*	Number	Rate*	Number	Rate*
UNITED STATES	32,932	15.8	32,882	15.8	31,015	14.8
Alabama	918	26.2	918	26.2	790	22.3
Alaska	97	29.8	80	24.6	112	33.9
Arizona	394	20.3	396	20.4	403	19.6
Arkansas	414	20.9	434	21.9	445	21.8
California	3,239	15.8	3,326	16.2	3,131	15.2
Colorado	245	10.4	245	10.4	199	8.2
Connecticut	251	8.1	246	8.0	251	8.2
Delaware	104	18.4	103	18.2	74	12.8
District of Columbia	352	47.1	354	47.3	307	41.2
Florida	1,517	20.9	1,517	20.9	1,488	19.4
Georgia	911	19.3	897	19.0	986	20.6
Hawaii	318	39.3	315	38.9	299	35.9
Idaho	63	8.3	62	8.2	38	4.9
Illinois	1,919	17.1	1,940	17.2	1,418	12.6
Indiana	737	13.9	722	13.6	707	13.3
Iowa	117	4.1	117	4.1	125	4.3
Kansas	164	7.3	169	7.5	165	7.2
Kentucky	718	21.8	715	21.7	683	20.4
Louisiana	517	13.9	520	14.0	469	12.5
Maine	87	8.5	87	8.5	107	10.4
Maryland	896	22.1	838	20.7	689	16.9
Massachusetts	698	12.1	734	12.7	673	11.6
Michigan	1,220	13.4	1,261	13.9	1,153	12.7
Minnesota	175	4.5	202	5.2	180	4.6
Mississippi	400	17.7	400	17.7	443	19.4
Missouri	615	12.9	605	12.7	610	12.8
Montana	64	8.9	64	8.9	61	8.5
Nebraska	102	6.7	101	6.6	64	4.2
Nevada	50	9.5	43	8.2	59	10.8
New Hampshire	39	5.1	38	4.9	52	6.6
New Jersey	1,239	16.8	1,208	16.4	1,075	14.6
New Mexico	200	18.8	194	18.2	221	20.0
New York	3,487	19.0	3,451	18.8	3,197	17.5
North Carolina	1,009	19.4	996	19.1	986	18.7
North Dakota	33	5.2	31	4.9	44	6.9
Ohio	1,281	11.9	1,252	11.6	1,369	12.8
Oklahoma	330	12.5	330	12.5	340	12.8
Oregon	234	10.7	234	10.7	240	10.8
Pennsylvania	1,773	14.9	1,772	14.9	1,692	14.2
Rhode Island	108	11.2	108	11.2	90	9.2
South Carolina	656	24.6	651	24.4	615	22.6
South Dakota	71	10.5	69	10.2	90	13.1
Tennessee	886	22.0	929	23.0	860	20.8
Texas	2,420	20.8	2,422	20.8	2,239	19.0
Utah	62	5.5	62	5.5	56	4.8
Vermont	36	7.8	36	7.8	30	6.5
Virginia	900	18.9	817	17.1	850	17.7
Washington	359	10.4	359	10.4	363	10.6
West Virginia	248	13.9	252	14.1	223	12.4
Wisconsin	237	5.2	240	5.3	231	5.1
Wyoming	22	6.4	20	5.8	23	6.5
Puerto Rico**	673	24.8	644	23.7	537	19.8

*Rate per 100,000. Population based on U.S. Bureau of Census, Current Population Reports, Series P25, No. 508, November 1973
**Not included in totals

INTERNATIONAL NOTES
QUARANTINE MEASURES

The following changes should be made in the "Supplement – United States Designated Yellow Fever Vaccination Centers," MMWR, Vol. 22, No. 32:

ALABAMA
Mobile — U.S. Public Health Service Outpatient Clinic 36602
Change telephone number to 205-690-2261

CALIFORNIA
San Pedro — U.S. Public Health Service Outpatient Clinic 90731
Change telephone number to 213-548-2611

FLORIDA
Pensacola — Escambia County Health Department 32502
Change P.O. Box number to 12604
Change zip code to 32574

INDIANA
Fort Wayne — Board of Public Health 46802
Change name to Fort Wayne-Allen County Board of Public Health

MARYLAND
Cheverly — Prince George's County Health Department 20785
Change Clinic hours to: By appointment Wed., 2 p.m.

MINNESOTA
Minneapolis — University Health Service 55455
Change Clinic hours to:
By appointment Fri, 2 p.m.

MISSISSIPPI
Jackson — State Board of Health 39205
Name change from Division of Preventable Disease Control to Bureau of Disease Control

NEVADA
Reno — Washoe County District Health Department 37402
Change clinic hours to Tues, 1:30-4 p.m.

NEW JERSEY
Perth Amboy — City Department of Health 08861
Change Clinic hours to Wed., 12:30-1:30 p.m.

NEW YORK
Brooklyn — Medical Department
Seafarers' Welfare Plan 11232
Change address to 674 Fourth Avenue

NORTH CAROLINA
Charlotte — Mecklenburg County Health Department 28203
Change clinic hours to: Tues. & Thurs., 2-4 p.m.

OHIO
Cincinnati — City Health Department 45229
Change clinic hours to: By appointment Thurs., 9:30 a.m.

OKLAHOMA
Bartlesville — Phillips Petroleum Co. 74004
Change telephone number to: 918-661-3861

The Morbidity and Mortality Weekly Report, circulation 36,000, is published by the Center for Disease Control, Atlanta, Ga.

Director, Center for Disease Control — **David J. Sencer, M.D.**
Director, Bureau of Epidemiology, CDC — **Philip S. Brachman, M.D.**
Editor, MMWR — **Michael B. Gregg, M.D.**
Managing Editor, MMWR — **Deborah L. Jones, B.S.**

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.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting outbreaks or case investigations of current interest to health officials.

Address all correspondence to: **Center for Disease Control**
Attn: Editor
Morbidity and Mortality Weekly Report
Atlanta, Georgia 30333

DHEW Publication No. (CDC) 74-8017