



Morbidity and Mortality

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE / PUBLIC HEALTH SERVICE HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

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EPIDEMIOLOGIC NOTES AND REPORTS

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A common-source outbreak of botulism with six cases was reported from Jefferson County, Colorado. On April 10, 1969, the first recognized case, a 54-year-old man, became ill with nausea and vomiting followed by dizziness, diplopia, and dysphonia. The next day generalized weakness developed accompanied by profound respiratory distress leading to his hospitalization in Denver. The patient remained afebrile. A lumbar puncture was normal. A clinical diagnosis of botulism was made, and the patient was treated with bivalent AB botulinum antisera (Lederle). The patient required tracheostomy and assisted ventilation. Electrocardiogram revealed frequent premature ventricular contractions. The patient had eaten his evening meal in a restaurant in Jefferson County on April 9.

On April 12, a 44-year-old woman was admitted to another Denver hospital. Two days prior to admission she experienced abdominal pain. The following day she developed nausea, vomiting, diplopia, dysphonia, upper extremity weakness, and respiratory distress. She was
(Continued on page 122)

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

DISEASE	15th WEEK ENDED		MEDIAN 1964 - 1968	CUMULATIVE, FIRST 15 WEEKS		
	April 12, 1969	April 13, 1968		1969	1968	MEDIAN 1964 - 1968
Aseptic meningitis	17	42	33	410	428	426
Brucellosis	2	6	4	28	32	57
Diphtheria	1	3	3	41	45	45
Encephalitis, primary:						
Arthropod-borne & unspecified	12	19	31	283	229	367
Encephalitis, post-infectious	5	7	17	72	130	219
Hepatitis, serum	78	93	775	1,487	1,104	12,459
Hepatitis, infectious	964	803		13,767	12,532	
Malaria	59	43	3	692	665	84
Measles (rubeola)	861	757	7,578	8,449	9,690	109,383
Meningococcal infections, total	99	70	100	1,269	1,150	1,150
Civilian	96	58	---	1,181	1,039	---
Military	3	12	---	88	111	---
Mumps	2,418	5,124	---	36,143	76,169	---
Poliomyelitis, total	---	1	1	1	15	7
Paralytic	---	1	1	1	15	6
Rubella (German measles)	2,095	2,632	---	18,112	19,388	---
Streptococcal sore throat & scarlet fever.	10,005	9,250	10,854	173,052	170,083	170,083
Tetanus	4	4	4	29	31	46
Tularemia	2	1	2	26	19	50
Typhoid fever	7	1	4	58	66	93
Typhus, tick-borne (Rky. Mt. spotted fever)	---	---	---	1	4	6
Rabies in animals	108	84	106	1,124	1,124	1,291

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	---	Rabies in man:	---
Botulism: Tex.-1	3	Rubella congenital syndrome: Tex.-1	3
Leptospirosis: Tex.-1	12	Trichinosis:	22
Plague:	---	Typhus, murine: Ga.-1	4
Psittacosis:	7		

TYPE A BOTULISM - (Continued from front page)

afebrile. A lumbar puncture was normal. Botulism was suspected on admission, and treatment was instituted with bivalent antisera. This patient ate her noon meal on April 10 in the same restaurant where the first patient had eaten.

The diagnosis of botulism in these patients led to the discovery of four additional cases admitted to another Denver hospital. These four patients - three men and one woman - had developed identical, but milder symptoms on March 28. Two had eaten at this same restaurant on March 25 and two on March 26. Food histories on all six individuals revealed potato salad to be the only item eaten by all.

Potato salad was prepared by the proprietor of the restaurant on March 23 and again on April 6. Fresh potatoes, onions, and boiled eggs were added to mayonnaise, chopped pickles, relish, and mustard. No home-canned products were used. Approximately 25 servings of potato salad were made each time.

Laboratory examination of sera from the first two patients proved lethal for mice unprotected by type A botulinum antitoxin. None of the potato salad was available for analysis, but laboratory studies of the ingredients and investigation of their sources are in progress. The restaurant has been closed during these investigations.

Although additional cases have been actively looked for, none have been detected to date.

(Reported by C. S. Mollohan, M.D., M.P.H., Chief, Section of Epidemiology, Colorado State Department of Public Health; Daniel P. Teitelbaum, M.D., Assistant Professor and Director of Emergency Services, Donald W. Ryan, M.D., Assistant Clinical Professor of Medicine, and Michael Cherington, M.D., Assistant Clinical Professor of Medicine, University of Colorado Medical School, Denver; The Food and Drug Administration; the Anaerobic Bacteriology Laboratory, Laboratory Division, NCDC; and a team of EIS Officers.)

Editor's Note:

Epidemiologic evidence incriminates potato salad as the vehicle of infection in this outbreak. It is not known whether contamination came from one of the ingredients or whether *Clostridium botulinum* was introduced during preparation of the salad. Intensive investigations are in progress in an attempt to define the source of contamination and to find unrecognized cases. Physicians in the area and surrounding states should be alert to the possibility of other related cases.

MEASLES ON OREGON-IDAHO BORDER

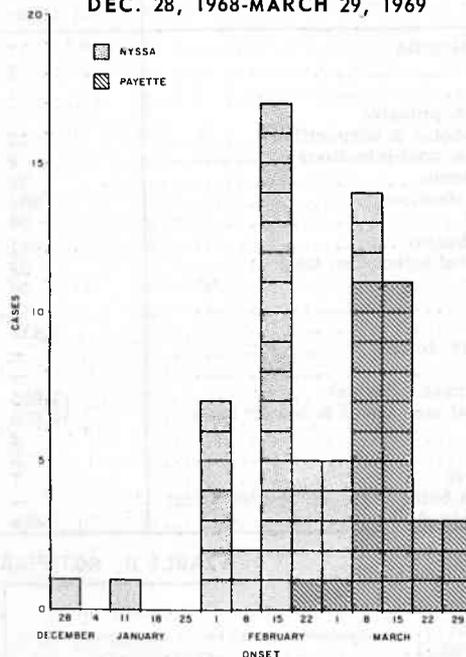
Between Dec. 23, 1968, and March 29, 1969, an outbreak of 69 cases of measles was reported from the Oregon-Idaho border counties of Malheur (population 24,750) and Payette (population 14,000). The initial case was an 8-year-old unimmunized Mexican-American girl in Nyssa, Malheur County, Oregon, who had no history of contact with measles (Figure 1). The 39 cases in Nyssa were distributed among 15 families, eight of whom were Mexican-American migrants. There were 23 cases in preschool children.

The initial case in Payette County, Idaho, was a 7-year-old unimmunized Japanese-American boy from Fruitland who had recently visited a Nyssa family whose children had measles. Of the 30 cases in Payette, 32 were in children in the Fruitland school and two were in preschool children.

Surveys of Payette's four elementary schools revealed that 25 to 40 percent of the children were unprotected against measles. On March 27 and 28, 1969, Malheur and Payette Counties cooperated in special school immunization clinics where over 830 Malheur children and 660 Payette children were immunized.

(Reported by I. R. Woodward, Jr., M.D., Health Officer, Payette County Health Department; David W. Sarazin, M.D., Health Officer, and Edna Blaylock, R.N., Senior Public Health Nurse, Malheur County Health Department; John A. Mather, M.D., M.P.H., Director, Division of Preventive Medicine, Idaho Department of Health; Les

Figure 1
REPORTED MEASLES CASES BY WEEK OF ONSET
NYSSA, MALHEUR COUNTY, OREGON, AND
PAYETTE COUNTY, IDAHO
DEC. 28, 1968-MARCH 29, 1969



Cour, Immunization Program, Oregon State Board of Health; and two EIS Officers.)

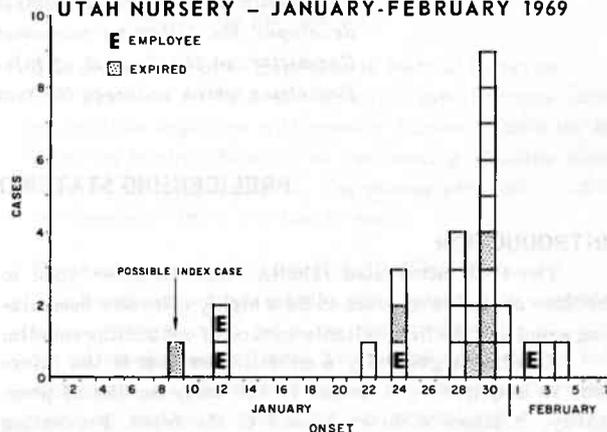
SHIGELLOSIS OUTBREAK - Utah

In January-February 1969, an outbreak of shigellosis occurred in a licensed private nursing home for mentally retarded children in Utah. The majority of the 32 severely retarded patients in the home were bedridden and ranged in age from 1 to 15 years (median age 7 years). A total of 22 patients became ill with fever and diarrhea for an attack rate of 69 percent with six deaths for a case-fatality rate for patients of 27 percent. Four employees also became ill with diarrhea (Figure 2). Numerous environmental cultures were negative. *Shigella flexneri* 3 was cultured from the stools of nine patients and one employee. The shigella strain isolated was sensitive to all antibiotics tested including ampicillin, tetracycline, and sulfisoxazole.

The first case was in an Indian child from an endemic area for shigellosis who was admitted to the home on January 9. The next two cases were in employees who may have acquired their infections from this child. The subsequent cases probably occurred through person-to-person spread from employees to patients or between patients. The possibility of spread via food later in the outbreak could not be excluded. No cases occurred among three children on tube feedings which required considerably less handling than the other meals.

Control measures included antibiotic treatment with ampicillin for the children and with tetracycline for all employees, isolation of ill patients, cessation of admis-

Figure 2
CASES OF SHIGELLOSIS, BY DATE OF ONSET
UTAH NURSERY - JANUARY-FEBRUARY 1969



sions until the outbreak abated, the use of disposable hand towels and diapers, a strict handwashing routine between handling patients, and follow-up stool cultures with antibiotic therapy until negative.

(Reported by Robert W. Sherwood, M.D., Director, Division of Preventive Medicine, Dale T. Callister, Laboratory Section, James E. Tidwell, Medical Care Services, and Richard A. Sweet, Environmental Health Section, Utah State Division of Health; and an EIS Officer.)

RELAPSING FEVER - Oregon

In December 1968, relapsing fever was diagnosed in five members of two acquainted families in Columbia County, Oregon. All had developed symptoms of recurrent fever, sweating, and leg aches in late September or mid-October. One patient, a 42-year-old man and the only ill member of a family of four (husband, wife, and two sons - Family A), was hospitalized on November 18 for recurrent fever (101-104°F.) of 24-48 hours duration at approximately 1-week intervals with onset on October 20. The episodes of fever were associated with perspiration and severe leg pains; since a previous visit to his physician, he had lost 7-8 lbs. On admission, except for a temperature of 100.2°F., his physical examination was within normal limits; no rash was noted. Laboratory examination revealed no abnormalities and included normal blood count and urinalysis, negative blood cultures, and normal febrile agglutinins. He was discharged on November 23 to be followed as an outpatient. A blood smear taken on December 7 when he was febrile revealed the spirochete of relapsing fever. Relapsing fever was then diagnosed in the other four patients (husband, wife, and two daughters) of a family of six (Family B) with onsets on September 20, 21, and 23. Fever in these individuals had recurred at 7 to 30-day intervals. All recovered following tetracycline therapy.

Epidemiologic investigation to determine the source of their illnesses found that both families had visited in Family B's log cabin in Wheeler County, Oregon, in the fall. Family B had visited there periodically since March

1968 and had visited there on September 14, 15, and during hunting season between October 3 and 13. Family A visited during this latter period. Adult members of both families and the two daughters of Family B had slept inside the cabin and the two sons of Family A had slept outside in sleeping bags.

An ecological study in mid-December of the cabin and surrounding fields failed to reveal a possible vector. Although several pack rat nests were found, they failed to yield the soft shelled tick *Ornithodoros hermsie* which was suspected of carrying the disease. Further efforts to obtain specimens for identification and laboratory examination will be made in late spring 1969.

(Reported by M. A. Holmes, D.V.M., Epidemiology Section, Oregon State Board of Health; and Robert J. Condon, M.D., Thomas J. Stack, M.D., Physicians, Portland.)

Editorial Comment:

Cases of relapsing fever have been reported from Oregon since 1940. In 1964 one case was identified in Harney County, 100 miles south of the location where the present cases had their contact. In 1958 one case each was reported from Jefferson County and Crook County. Two cases and one death occurred in 1964 and two cases and one death in 1968 in Deschutes County. Four cases were identified in 1967 in Grant County. All these counties surround Wheeler County and do have heavy tick populations. However, the vector was never identified in any of these outbreaks.

**RECOMMENDATION OF THE PUBLIC HEALTH SERVICE
ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES**

The Public Health Service Advisory Committee on Immunization Practices developed the following recommendation in close collaboration with the Committee on the Control of Infectious Diseases, American Academy of Pediatrics which endorses the recommendation.

PRELICENSING STATEMENT ON RUBELLA VIRUS VACCINE**INTRODUCTION**

The live, attenuated rubella virus vaccine* soon to become available appears to be a highly effective immunizing agent and the first suitable method of controlling rubella.

Rubella is generally a mild illness, but if the infection is acquired by a woman in the early months of pregnancy, it poses a direct hazard to the fetus. Preventing infection of the fetus is the principal objective of rubella control. This can best be achieved by eliminating the transmission of virus among children, who are the major source of infection for susceptible pregnant women. Furthermore, the live, attenuated rubella virus vaccine is safe and protective for children, but not for pregnant women because of an undetermined risk of the vaccine virus for the fetus.

RUBELLA

Rubella is one of the common childhood exanthems. Most cases occur in school-age children particularly during the winter and spring. By early adulthood, approximately 80 to 90 percent of individuals in the United States have serological evidence of immunity.

Rubella is clinically variable, and its common features, such as post-auricular and sub-occipital lymphadenopathy and transient erythematous rash, are often overlooked or misdiagnosed. A mild febrile illness may not be recognizable as rubella, and moreover, subclinical infection occurs, which further decreases the reliability of clinical history.

Complications of rubella are rare in children, but in adults, particularly women, the illness is commonly accompanied by transient polyarthrititis. Far more important is the frequent occurrence of fetal abnormalities when a woman acquires rubella in the first trimester of pregnancy.

RUBELLA IMMUNITY

Immunity following rubella appears to be long lasting, even after mild illness or clinically inapparent infection.

*Its official name is Rubella Virus Vaccine, Live.

The only reliable evidence of immunity is a positive serological test. However, because of the variation among reagents and technical procedures, results of serological tests should be accepted only from laboratories of recognized competency that regularly perform these tests.

At the present time, the hemagglutination-inhibition (HI) antibody determination is particularly useful for evaluating immunity. It is a rapid and sensitive procedure. The complement fixation (CF) and other serological tests are less useful.

LIVE RUBELLA VIRUS VACCINE

Live rubella virus vaccine is prepared in cell culture of avian or mammalian tissues. It is administered as a single subcutaneous injection. Although vaccinees shed virus from the pharynx at times for 2 or more weeks after vaccination, there is no clear evidence of communicability. Approximately 95 percent of susceptible vaccinees develop antibodies, but titers are lower than those observed following natural rubella infection. Recent investigations have shown that vaccination affords protection against illness following either natural exposure or artificial challenge.

Antibody levels have declined very little during the 3-year period of observation of children who were among the first to be immunized with rubella vaccine. Long-term protection is likely, but its exact duration can be established only by continued observation.

More than 30,000 susceptible children have received live rubella virus vaccine in field investigations, with almost no untoward reactions. Only rarely has transient arthralgia or evanescent rash been reported in children.

Many susceptible women have had lymphadenopathy, arthralgia, and transient arthritis beginning 2 to 4 weeks after vaccination; however, fever, rash, and other features of naturally acquired rubella have occurred less commonly. Not enough susceptible men have been vaccinated to show whether they experience comparable reactions as frequently as women.

RECOMMENDATIONS FOR VACCINE USE

Live rubella virus vaccine is recommended for boys and girls between the age of 1 year and puberty. Vaccine should not be administered to infants less than 1 year old because of possible interference from persisting maternal rubella antibody.

Children in kindergarten and the early grades of elementary school deserve initial priority for vaccination because they are commonly the major source of virus dissemination in the community. A history of rubella illness is usually not reliable enough to exclude children from immunization.

Vaccination of adolescent or adult males is of much lower priority because so few are susceptible. However, the vaccine may be useful in preventing or controlling outbreaks of rubella in circumscribed population groups.

Pregnant women should not be given live rubella virus vaccine. It is not known to what extent infection of the fetus with attenuated virus might take place following vaccination, or whether damage to the fetus could result. Therefore, *routine* immunization of adolescent girls and adult women should *not* be undertaken because of the danger of inadvertently administering vaccine before pregnancy becomes evident.

Women of child-bearing age may be considered for vaccination only when the possibility of pregnancy in the following 2 months is essentially nil; each case must be considered individually. This cautious approach to vaccinating post-pubertal females is indicated for two reasons: First, because of the theoretical risk of vaccination in pregnancy; and second, because significant congenital anomalies occur regularly in approximately 3 percent of all births, and their fortuitous appearance after vaccine had been given during pregnancy could lead to serious misinterpretation.

If vaccination of a woman of child-bearing age is contemplated, the following steps are indicated:

Optimally, the woman should be tested for susceptibility to rubella by the HI test (See *Rubella Immunity*).

If immune, she should be assured that vaccination is unnecessary.

If susceptible, she may be vaccinated only if she understands that it is imperative for her to avoid becoming pregnant for the following 2 months. (To ensure this, a medically acceptable method for pregnancy prevention should be followed. This precaution also applies to women in the immediate

post-partum period.) Additionally, she should be informed of the frequent occurrence of self-limited arthralgia and possible arthritis beginning 2 to 4 weeks after vaccination.

Use of Vaccine after Exposure to Natural Infection

There is no evidence that live rubella virus vaccine given after exposure will prevent illness. There is, however, no contraindication to vaccinating children already exposed to natural rubella. For women exposed to rubella, the concepts listed previously apply.

Precautions in Using Live Rubella Virus Vaccine

Pregnancy: *Live rubella virus vaccine is contraindicated.* (See *Recommendations for Vaccine Use*.)

Altered Immune State: Attenuated rubella virus infection might be potentiated by severe underlying diseases, such as leukemia, lymphoma, or generalized malignancy, and when resistance has been lowered by therapy with steroid, alkylating drugs, antimetabolites, or radiation. Vaccination of such patients should be avoided.

Severe Febrile Illness: Vaccination should be postponed until the patient has recovered.

Hypersensitivity of Vaccine Components: Rubella vaccine is produced in cell culture. Care should be exercised in administering vaccine to persons with known hypersensitivity to the species from which the cells were derived (indicated in the labeling). The vaccine contains a small amount of neomycin and should not be given to individuals known to be sensitive to this antibiotic.

Simultaneous Administration of Live Rubella Virus Vaccine and Other Live Virus Vaccines

Simultaneous administration of live rubella virus vaccine and other live virus vaccines should be deferred until results of controlled clinical investigations are available. Until then, it is recommended that rubella vaccination be separated by at least 1 month from administration of other live virus vaccines.

SURVEILLANCE

Careful surveillance of rubella infection is particularly important with an effective vaccine in use. Emphasis should be placed upon improved diagnosis and reporting of rubella, of the congenital rubella syndrome, and of complications of the disease. Competent laboratory investigation of all infants with birth defects suspected of being due to rubella is essential. It will likewise be important to observe patterns of vaccine use and determine their effectiveness.

SEROLOGIC TESTING FOR RUBELLA - A WARNING

The Public Health Service Medical Laboratory Services Advisory Committee issued the following statement on serologic testing for rubella.

Serologic tests for rubella are primarily used to determine: (1) the immune status of individuals in a given population; (2) the immune status of pregnant women who have been exposed to rubella; and (3) the etiology of cases of exanthematous disease. In the first instance, results of tests are used for epidemiological and immunization planning purposes; in the second and third instances, results are used to provide information for making medical management decisions in situations of some urgency.

At the present time the hemagglutination inhibition (HI) test is the technique most widely used for measuring rubella antibodies. This test is a complex procedure which must be performed by well trained, experienced individuals. In addition, a thorough knowledge of the immune response is essential for the proper interpretation of test results. Because of actions which may be taken on the basis of laboratory results, the need for accuracy is great, and certain problems associated with the HI test must be recognized.

The HI test for rubella is not a standardized technique, and several modifications of the basic procedure are in use. Methods for removing nonspecific inhibitors in serum specimens may not be completely effective, or they may remove specific antibody, leading to false positive or false negative results. Reagents obtained from different

sources are not uniform in quality or in suitability for all modifications of the HI test. Since the products from each manufacturer are for use in a specific HI procedure, intermixing reagents from different sources can lead to problems in test performance. Further, the wide variability of erythrocyte suspensions has considerable bearing on the sensitivity of the test. Because of the lack of uniformity in testing procedures and reagents, interpreting laboratory results is a sophisticated undertaking, and, of necessity, may vary from one laboratory to another.

In view of the problems associated with this serologic procedure, HI tests for rubella should not be attempted in a laboratory carrying out the tests on an infrequent basis. Such a laboratory cannot maintain the necessary skills and controls, and, in urgent cases involving therapeutic abortion, pressures may lead to failure to repeat tests or to perform more difficult supplemental tests, such as complement fixation, fluorescent antibody, and serum neutralization tests, or IgM determinations which may be necessary for accurate interpretation.

The laboratory asked to carry out HI tests for rubella only infrequently or to perform supplemental tests for which it is not qualified should refer diagnostic materials to a State health department or other competent reference laboratory.

EPIDEMIOLOGIC NOTES AND REPORTS
AN OUTBREAK OF TUBERCULOSIS - Denver, Colorado

In February 1968, active far-advanced cavitary pulmonary tuberculosis was diagnosed in a 16-year-old high school student in Denver. The girl had had a grossly productive cough since the previous school year. She reported to her teachers that she was under a physician's care and had bronchitis; however, she was seen by a physician on only one occasion in July. During 1962-1964 while living in New Mexico, she was exposed to an aunt with active pulmonary tuberculosis. Multiple attempts by the local health department there to conduct contact investigation of the family had failed.

In March 1968 following the diagnosis of this case, approximately 2,300 students and teachers in her high school received a Tine test. Prior to the test, there were 61 known positive reactors in the school. Following

this test, 83 new reactors were detected. Confirmatory positive intermediate PPD-S skin tests were found on 66 (80 percent) of these new reactors; 53 of these 66 new reactors and 10 known reactors were seen at the Denver Disease Control Clinic for a chest X-ray and sputum examination. Four active cases of pulmonary tuberculosis (one moderately advanced, two minimally, and one primary) were detected. All four were proved recent converters. The index case's sister was also diagnosed as having active minimal pulmonary tuberculosis. She had not been skin tested previously. These five new cases were treated with appropriate anti-tuberculosis medications. Of the remaining 59 reactors seen at the clinic, 58 received preventive treatment with isoniazid. These 58 included 31 proved recent converters, 17 with no

record of a previous skin test, and 10 with known prior positive tests. Most of the other new reactors not seen at the clinic are under the care of a private physician. Family investigations of the new cases and other positive reactors did not disclose any other source cases. All new cases, as well as most of the recent converters, had close, mainly classroom, contact with the index case.

Since the index case was an active member of a church choir in Denver, 30 fellow choir members were also tested. Eight had a positive intermediate PPD-S. Two additional cases of active tuberculosis (an active

primary and an active tuberculous pleural effusion) were detected in the choir in a brother and sister of a family unrelated to the index case; both were recent converters. Of the six remaining positive reactors, only one had had a prior skin test and that had been negative. These six reactors were given preventive treatment with isoniazid. (Reported by G. David Onstad, M.D., Acting Director, Denver Disease Control Clinic, Denver Department of Health and Hospitals; Leland M. Corliss, M.D., Executive Director, Department of Health Services, Denver Public Schools; and Thomas Moulding, M.D., Staff Physician, National Jewish Hospital, Denver.)

FOLLOW-UP AFRICAN SLEEPING SICKNESS – Melbourne, Florida

In November 1968, a dentist was treated for African trypanosomiasis in Melbourne, Florida, (MMWR, Vol. 17, No. 44). He recovered following suramin* (Bayer 205) therapy. Since hospital discharge in December 1968, he has had no recurrence of fever and has returned to his dental practice. Blood obtained from the patient prior to suramin therapy was inoculated into mice. The animals subsequently developed trypanosomiasis. The ministry of

health in Botswana, where the patient contracted the disease while on safari, has since reported endemic foci of sleeping sickness in the area the patient visited.

(Reported by D. Donovan, M.D., and G. Stroud, M.D., Physicians, Melbourne, Florida; and the Parasitic Disease Drug Service, NCDC.)

*Available from the Parasitic Disease Drug Service, NCDC.)

FOLLOW-UP KALA-AZAR – Baltimore, Maryland

In March 1968, an 18-year-old Greek immigrant was admitted to a Baltimore hospital with visceral leishmaniasis (kala-azar) (MMWR, Vol. 17, No. 13). Therapy with pentostam* (sodium stibogluconate) was begun and the patient improved following a 10-day course. In July 1968, he again developed fever, night sweats, and hepatosplenomegaly and was readmitted. Anemia and thrombocytopenia were present and Leishman-Donovan bodies were demonstrated in a sternal bone marrow aspirate. Pentostam was re-

started and 20 doses were given over a 1-month period. The patient rapidly improved and to date has had no recurrence of disease. Serum sent to NCDC at the time of his initial illness was strongly positive for visceral leishmaniasis by hemagglutination-inhibition test. Sera from other family members were negative.

(Reported by S. Charache, M.D., Physician, Baltimore; and the Parasitic Disease Drug Service, NCDC.)

*Available from the Parasitic Disease Drug Service, NCDC.)

ERRATUM, Vol. 18, No. 10, pp. 77-78

In the report of two cases of human myiasis from Texas and Oklahoma, the larvae that were removed from the boy's scalp lesion in Oklahoma were incorrectly termed screwworms. The name screwworm is not used for all dipterous larvae, as was stated, but is commonly given to the larvae of the blow flies, *Cochliomyia hominivorax* and *Cochliomyia marcellaria*, which occur in North and South America, and to the larvae of *Chrysomya bezziana*, which occurs in Africa and Asia.

Subsequent to the report, specimens of fly larvae taken from the boy in Oklahoma were examined by the U.S. Department of Agriculture. These larvae were identified as *Hypoderma lineatum*, the common cattle grub, and *Phormia regina*, a black blow fly, a common maggot of the wool of sheep. Although exact identification of another specimen of larvae could not be made because of the quality of the specimen, it was not a screwworm.

(Reported by Robert R. Gerrish, Entomologist, R. J. Gagne, Entomologist, and C. H. Schmidt, Entomologist, U.S. Department of Agriculture.)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED
APRIL 12, 1969 AND APRIL 13, 1968 (15th WEEK)

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	DIPHThERIA	ENCEPHALITIS			HEPATITIS		MALARIA		
				Primary including unsp. cases		Post- Infectious	Serum	Infectious		1969	Cum. 1969
				1969	1968	1969	1969	1969	1968		
UNITED STATES...	17	2	1	12	19	5	78	964	803	59	692
NEW ENGLAND.....	2	-	-	-	-	-	3	65	18	-	31
Maine.*.....	-	-	-	-	-	-	-	3	2	-	-
New Hampshire.....	-	-	-	-	-	-	-	1	-	-	2
Vermont.....	-	-	-	-	-	-	-	3	-	-	-
Massachusetts.....	2	-	-	-	-	-	2	28	11	-	25
Rhode Island.....	-	-	-	-	-	-	-	18	4	-	-
Connecticut.....	-	-	-	-	-	-	1	12	2	-	4
MIDDLE ATLANTIC.....	4	-	-	1	6	2	18	166	129	13	81
New York City.....	1	-	-	-	2	-	4	25	40	4	8
New York, up-State.....	-	-	-	-	3	-	1	23	37	-	13
New Jersey.*.....	2	-	-	-	1	-	7	42	24	-	27
Pennsylvania.....	1	-	-	1	-	2	6	76	28	9	33
EAST NORTH CENTRAL...	-	-	-	5	5	2	10	155	124	3	49
Ohio.....	-	-	-	3	5	-	1	40	56	1	8
Indiana.....	-	-	-	-	-	2	1	8	5	1	4
Illinois.....	-	-	-	1	-	-	1	33	41	1	20
Michigan.....	-	-	-	1	-	-	7	65	7	-	16
Wisconsin.....	-	-	-	-	-	-	-	9	15	-	1
WEST NORTH CENTRAL...	2	-	1	1	-	-	-	47	54	3	48
Minnesota.....	1	-	-	-	-	-	-	11	12	-	3
Iowa.....	-	-	-	-	-	-	-	15	22	-	4
Missouri.....	-	-	-	-	-	-	-	2	8	1	13
North Dakota.....	1	-	-	-	-	-	-	2	4	-	2
South Dakota.....	-	-	1	1	-	-	-	15	1	-	-
Nebraska.....	-	-	-	-	-	-	-	-	5	-	3
Kansas.....	-	-	-	-	-	-	-	2	2	2	23
SOUTH ATLANTIC.....	-	-	-	1	1	1	6	95	93	16	227
Delaware.....	-	-	-	-	-	-	2	6	-	-	1
Maryland.*.....	-	-	-	-	-	-	2	7	17	-	5
Dist. of Columbia..	-	-	-	-	-	-	-	2	1	1	1
Virginia.....	-	-	-	-	1	-	1	10	10	-	10
West Virginia.....	-	-	-	-	-	-	-	3	1	-	-
North Carolina.....	-	-	-	-	-	-	-	13	6	10	121
South Carolina.....	-	-	-	-	-	-	-	2	-	3	22
Georgia.....	-	-	-	-	-	-	-	10	28	1	53
Florida.....	-	-	-	1	-	1	1	42	30	1	14
EAST SOUTH CENTRAL...	1	1	-	-	-	-	2	50	59	-	22
Kentucky.....	-	-	-	-	-	-	-	19	26	-	17
Tennessee.....	1	1	-	-	-	-	1	19	16	-	-
Alabama.....	-	-	-	-	-	-	1	6	4	-	5
Mississippi.....	-	-	-	-	-	-	-	6	13	-	-
WEST SOUTH CENTRAL...	1	1	-	2	1	-	1	84	63	-	19
Arkansas.....	-	-	-	-	-	-	-	2	4	-	5
Louisiana.*.....	1	-	-	2	-	-	1	18	12	-	12
Oklahoma.....	-	-	-	-	1	-	-	5	5	-	2
Texas.....	-	1	-	-	-	-	-	59	42	-	-
MOUNTAIN.....	1	-	-	-	1	-	1	108	38	4	48
Montana.....	-	-	-	-	1	-	-	2	5	-	-
Idaho.....	1	-	-	-	-	-	-	3	-	-	1
Wyoming.*.....	-	-	-	-	-	-	-	2	-	-	-
Colorado.....	-	-	-	-	-	-	-	58	9	4	43
New Mexico.....	-	-	-	-	-	-	-	14	7	-	2
Arizona.....	-	-	-	-	-	-	-	24	9	-	1
Utah.....	-	-	-	-	-	-	1	5	7	-	1
Nevada.....	-	-	-	-	-	-	-	-	1	-	-
PACIFIC.....	6	-	-	2	5	-	37	194	225	20	167
Washington.....	-	-	-	-	-	-	-	14	8	-	5
Oregon.....	-	-	-	-	-	-	-	13	14	-	5
California.....	6	-	-	2	5	-	37	166	193	11	137
Alaska.*.....	-	-	-	-	-	-	-	-	-	-	-
Hawaii.*.....	-	-	-	-	-	-	-	1	10	9	20
Puerto Rico.....	-	-	-	-	-	-	-	28	26	-	1

* Delayed reports: Hepatitis, serum: Md. 11(1968)

Hepatitis, infectious: Me. 1, N.J. delete 1, La. delete 1, Wyo. delete 3, Alaska 1, Hawaii 13

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

APRIL 12, 1969 AND APRIL 13, 1968 (15th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS	POLIOMYELITIS			RUBELLA	
	1969	Cumulative		1969	Cumulative			1969	Total	Paralytic		
		1969	1968		1969	1968				1969		Cum. 1969
UNITED STATES...	861	8,449	9,690	99	1,269	1,150	2,418	-	-	1	2,095	
NEW ENGLAND.....	44	373	375	3	37	60	362	-	-	-	149	
Maine.*.....	-	2	13	-	2	4	45	-	-	-	3	
New Hampshire.....	5	75	56	-	-	6	2	-	-	-	3	
Vermont.....	1	2	1	-	-	1	8	-	-	-	-	
Massachusetts.*	12	76	137	3	19	28	118	-	-	-	73	
Rhode Island.....	-	9	1	-	4	4	46	-	-	-	12	
Connecticut.....	26	209	167	-	12	17	143	-	-	-	58	
MIDDLE ATLANTIC.....	373	2,682	1,383	18	160	179	137	-	-	-	143	
New York City.....	249	1,863	379	5	36	32	96	-	-	-	51	
New York, Up-State.	55	275	687	4	25	30	NN	-	-	-	36	
New Jersey.....	28	275	259	6	55	66	41	-	-	-	55	
Pennsylvania.....	41	269	58	3	44	51	NN	-	-	-	1	
EAST NORTH CENTRAL...	77	930	2,222	17	159	127	581	-	-	-	570	
Ohio.....	6	102	185	10	55	33	52	-	-	-	58	
Indiana.....	17	265	357	-	22	17	112	-	-	-	120	
Illinois.....	15	169	903	2	29	30	41	-	-	-	28	
Michigan.*	11	99	142	5	44	35	206	-	-	-	270	
Wisconsin.....	28	295	635	-	9	12	170	-	-	-	94	
WEST NORTH CENTRAL...	31	267	213	4	65	49	243	-	-	-	125	
Minnesota.....	-	1	6	2	12	13	1	-	-	-	-	
Iowa.....	19	153	40	-	9	3	204	-	-	-	105	
Missouri.....	1	12	60	1	23	10	19	-	-	-	3	
North Dakota.....	1	6	69	-	-	2	11	-	-	-	5	
South Dakota.....	-	-	4	-	-	4	NN	-	-	-	-	
Nebraska.....	10	95	27	1	8	4	4	-	-	-	8	
Kansas.....	-	-	7	-	13	13	4	-	-	-	4	
SOUTH ATLANTIC.....	58	1,362	855	15	232	256	167	-	-	-	325	
Delaware.....	12	111	7	1	4	3	4	-	-	-	10	
Maryland.....	2	13	50	3	21	16	11	-	-	-	25	
Dist. of Columbia..	-	-	5	1	5	9	9	-	-	-	10	
Virginia.....	9	516	160	-	29	19	18	-	-	-	47	
West Virginia.....	15	142	141	-	12	6	65	-	-	-	133	
North Carolina.....	11	127	220	2	33	57	NN	-	-	-	-	
South Carolina.....	3	66	8	1	35	46	7	-	-	-	18	
Georgia.....	-	1	3	4	34	47	1	-	-	-	-	
Florida.....	6	386	261	3	59	53	52	-	-	-	82	
EAST SOUTH CENTRAL...	2	48	255	9	71	99	151	-	-	-	167	
Kentucky.....	1	21	70	2	22	40	68	-	-	-	87	
Tennessee.....	1	12	43	4	31	29	56	-	-	-	75	
Alabama.....	-	-	45	1	10	14	27	-	-	-	-	
Mississippi.....	-	15	97	2	8	16	-	-	-	-	5	
WEST SOUTH CENTRAL...	208	2,054	2,493	17	184	224	249	-	-	1	149	
Arkansas.....	1	3	-	1	20	13	-	-	-	-	-	
Louisiana.....	13	66	1	3	45	55	1	-	-	-	1	
Oklahoma.*	-	105	100	1	19	43	27	-	-	-	30	
Texas.....	194	1,880	2,392	12	100	113	221	-	-	1	118	
MOUNTAIN.....	26	208	460	1	30	14	197	-	-	-	164	
Montana.....	1	4	55	-	4	1	59	-	-	-	4	
Idaho.....	-	36	11	-	5	3	5	-	-	-	1	
Wyoming.....	-	-	40	-	-	-	-	-	-	-	-	
Colorado.....	1	20	193	-	6	7	-	-	-	-	103	
New Mexico.....	13	87	45	-	5	-	28	-	-	-	31	
Arizona.....	11	59	108	1	7	1	97	-	-	-	23	
Utah.....	-	1	3	-	1	-	8	-	-	-	2	
Nevada.....	-	1	5	-	2	2	-	-	-	-	-	
PACIFIC.....	42	525	1,434	15	331	142	331	-	-	-	303	
Washington.....	-	34	352	1	42	24	119	-	-	-	58	
Oregon.....	7	121	304	-	8	14	12	-	-	-	10	
California.....	32	352	751	14	271	95	157	-	-	-	181	
Alaska.*	-	13	-	-	4	-	11	-	-	-	13	
Hawaii.*	3	5	27	-	6	9	32	-	-	-	41	
Puerto Rico.....	46	223	195	-	6	16	13	-	-	-	3	

* Delayed reports: Measles: Mass. delete 3, Mich. 2, Hawaii delete 1
Meningococcal infections: Me. 1, Okla. 8
Mumps: Me. 8, Alaska 35
Rubella: Me. 4, Alaska 18, Hawaii 1

Morbidity and Mortality Weekly Report

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

APRIL 12, 1969 AND APRIL 13, 1968 (15th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
	1969	1969	Cum. 1969	1969	Cum. 1969	1969	Cum. 1969	1969	Cum. 1969	1969	Cum. 1969
UNITED STATES...	10,005	4	29	2	26	7	58	-	1	108	1,124
NEW ENGLAND.....	1,885	-	-	-	-	-	-	-	-	2	4
Maine.*.....	22	-	-	-	-	-	-	-	-	2	3
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	-
Vermont.....	1	-	-	-	-	-	-	-	-	-	1
Massachusetts.....	293	-	-	-	-	-	-	-	-	-	-
Rhode Island.....	112	-	-	-	-	-	-	-	-	-	-
Connecticut.....	1,457	-	-	-	-	-	-	-	-	-	-
MIDDLE ATLANTIC.....	432	1	5	-	1	-	7	-	-	7	32
New York City.....	18	1	3	-	1	-	5	-	-	-	-
New York, Up-State.....	281	-	2	-	-	-	1	-	-	6	31
New Jersey.....	NN	-	-	-	-	-	-	-	-	-	-
Pennsylvania.....	133	-	-	-	-	-	1	-	-	1	1
EAST NORTH CENTRAL...	1,457	-	3	-	2	2	6	-	-	20	64
Ohio.....	518	-	-	-	-	1	4	-	-	10	17
Indiana.....	246	-	-	-	1	-	-	-	-	5	15
Illinois.....	211	-	1	-	1	-	-	-	-	4	13
Michigan.....	330	-	2	-	-	1	2	-	-	-	1
Wisconsin.....	152	-	-	-	-	-	-	-	-	1	18
WEST NORTH CENTRAL...	396	-	1	1	4	-	-	-	-	13	196
Minnesota.....	40	-	-	-	-	-	-	-	-	2	49
Iowa.....	128	-	-	-	-	-	-	-	-	3	30
Missouri.....	16	-	-	-	3	-	-	-	-	3	68
North Dakota.....	79	-	-	-	-	-	-	-	-	5	29
South Dakota.....	26	-	-	-	-	-	-	-	-	-	-
Nebraska.....	64	-	-	-	-	-	-	-	-	-	8
Kansas.*.....	43	-	1	1	1	-	-	-	-	-	12
SOUTH ATLANTIC.....	1,039	1	7	1	11	1	6	-	-	23	349
Delaware.....	16	-	-	-	-	-	-	-	-	-	-
Maryland.....	190	-	-	-	-	1	2	-	-	-	-
Dist. of Columbia..	7	-	2	-	-	-	-	-	-	-	-
Virginia.....	238	-	-	-	-	-	-	-	-	6	210
West Virginia.....	219	-	-	-	2	-	-	-	-	6	54
North Carolina.....	5	-	1	-	4	-	1	-	-	2	3
South Carolina.....	225	-	1	-	-	-	1	-	-	-	-
Georgia.....	4	-	-	1	1	-	1	-	-	3	24
Florida.....	135	1	3	-	4	-	1	-	-	6	58
EAST SOUTH CENTRAL...	1,705	1	4	-	4	1	8	-	1	18	203
Kentucky.....	225	-	2	-	-	-	-	-	-	6	115
Tennessee.....	1,258	1	2	-	4	1	7	-	1	9	69
Alabama.....	115	-	-	-	-	-	-	-	-	3	19
Mississippi.....	107	-	-	-	-	-	1	-	-	-	-
WEST SOUTH CENTRAL...	617	1	4	-	2	-	7	-	-	15	152
Arkansas.....	27	-	-	-	-	-	4	-	-	4	12
Louisiana.*.....	-	1	3	-	-	-	-	-	-	-	13
Oklahoma.....	21	-	1	-	2	-	-	-	-	3	25
Texas.....	569	-	-	-	-	-	3	-	-	8	102
MOUNTAIN.....	1,584	-	-	-	2	-	10	-	-	-	28
Montana.....	27	-	-	-	-	-	-	-	-	-	-
Idaho.....	186	-	-	-	-	-	-	-	-	-	-
Wyoming.*.....	184	-	-	-	-	-	5	-	-	-	11
Colorado.....	862	-	-	-	-	-	1	-	-	-	2
New Mexico.....	115	-	-	-	1	-	2	-	-	-	7
Arizona.....	100	-	-	-	-	-	1	-	-	-	5
Utah.....	110	-	-	-	1	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	1	-	-	-	3
PACIFIC.....	890	-	5	-	-	3	14	-	-	10	96
Washington.....	246	-	1	-	-	-	1	-	-	-	-
Oregon.....	112	-	-	-	-	-	-	-	-	-	-
California.....	464	-	4	-	-	3	13	-	-	10	96
Alaska.*.....	15	-	-	-	-	-	-	-	-	-	-
Hawaii.....	53	-	-	-	-	-	-	-	-	-	-
Puerto Rico.....	7	-	2	-	-	-	3	-	-	1	6

*Delayed reports: SST: Me. 13, Kans. 178, La. delete 8, Wyo. 59, Alaska 31

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