

LEPTOSPIROSIS FACT SHEET

(Weil's disease, Canicola fever, Hemorrhagic jaundice, Mud fever, Swineherd disease)

Agent: *Leptospira interrogans* (more than 200 different serovars identified, including *icterohemorrhagiae*, *autumnalis*, *canicola*, *hardjo*, *pomona*, etc., depending on geographic location).

Brief Description: Leptospirosis is a zoonotic disease of worldwide distribution caused by spirochetes of the genus *Leptospira*. The severity of *Leptospira* infections ranges from subclinical to the clinically recognizable syndromes: a self-limited systemic illness seen in approximately 90% of infections, and a severe, potentially life-threatening illness accompanied by any combination of renal failure, liver failure, and pneumonitis with hemorrhagic diathesis. Common features include fever (sometimes biphasic), chills, malaise, vomiting, muscular aches and conjunctivitis. Rash may occasionally occur. Other manifestations may include jaundice, meningitis, and hemolytic anemia. Serologic evidence of leptospiral infection is found in 10% of otherwise undiagnosed meningitis and encephalitis. Clinical illness may last from a few days to a few weeks. In rare cases death occurs. Weil's disease, characterized by impaired hepatic and renal function, is one form of severe illness that may develop after the acute phase. Leptospirosis is primarily an occupational disease that affects farmers, sewer workers or others whose occupation involves contact with animal urine, especially rat urine.

Reservoir: Wild and domestic animals; varies with serovar. Notable are rats, swine, cattle, dogs, and raccoons. These animals can serve as long-term asymptomatic carriers, with organisms found in the renal tubules and excreted in urine.

Mode of Transmission: Contact of the skin or mucous membranes with water, moist soil or vegetation contaminated with urine of infected animals. Potential transmission routes include swimming in contaminated water, direct contact with urine or tissues of infected animals, ingestion of food contaminated with the urine of infected rats, or inhalation of droplet-aerosols of contaminated fluids.

Incubation Period: Usually 10 days, with a range of 4-19 days.

Laboratory Criteria for Diagnosis:

- Isolation of leptospire from a clinical specimen, or
- Fourfold or greater increase in *Leptospira* agglutination titer between acute- and convalescent-phase sera obtained 2 or more weeks apart and examined at the same laboratory, or
- Demonstration of leptospire in a clinical specimen by immunofluorescence.

Diagnostic Testing:

NOTE: LABORATORY SEROLOGIC TESTS SHOULD USE A PANEL OF LOCALLY OCCURRING *LEPTOSPIRA* SEROVARS, AS THEIR GEOGRAPHIC DISTRIBUTION CAN PRESENT DIAGNOSTIC CHALLENGES.

A. Serology

1. Specimen Needed: Acute and convalescent sera or blood.
2. Outfit: Other serology outfit, order #0504.
3. Lab Form: CDC Form 50.34.
4. Lab Test Performed: Fluorescent and complement fixation for antibody titers.
5. Lab Performing Test: CDC, with prior arrangement through the Georgia Public Health Laboratory (GPHL) in Decatur.
Important: Specimens must be submitted to GPHL, not directly to the CDC.

B. Culture

1. Specimen Needed: Blood or urine.
2. Outfit: Ellinghausen's medium inoculated with blood or urine.
3. Lab Form: Form 3410.
4. Lab Test Performed: Culture and identification.
5. Lab Performing Test: Bacteriology Laboratory, GPHL.

Case Classification:

- **Probable:** a clinically compatible case with supportive serologic findings (i.e., a *Leptospira* agglutination titer of greater than or equal to 200 in one or more serum specimens).
- **Confirmed:** a clinically compatible case that is laboratory-confirmed.

Period of Communicability: Direct person-to-person transmission is rare. *Leptospira* may be excreted in the urine, usually for one month.

Vaccination: There is no vaccine for leptospirosis.

Treatment: Prompt, specific treatment, as early in the illness as possible, is essential. Penicillin is the drug of choice for severely ill patients; oral amoxicillin, ampicillin, tetracycline, or doxycycline may be used for mild to moderately severe infections. Both penicillin and doxycycline have been shown to be effective in double-blind placebo-controlled trials.

Post-exposure Prophylaxis: Oral doxycycline may provide effective chemoprophylaxis for persons with short-term exposure in environments associated with increased risk of infection.

Investigation: Attempts should be made to determine exposure of the patient to infected animals, particularly rats, or a history of swimming in contaminated water.

Reporting: Report all confirmed and suspect cases **WITHIN 7 DAYS** electronically through the State Electronic Notifiable Disease Surveillance System (SENDSS) at <http://sendss.state.ga.us>, or complete and mail a GA Notifiable Disease Report Form (#3095).

Reported Cases of Leptospirosis in Georgia, 1993-2000

Year	Number of Cases
1993	0
1994	0
1995	0
1996	1
1997	0
1998	0
1999	0
2000	0

References:

1. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions under Public Health Surveillance. *MMWR* Vol 46(RR10), 1997: 1-55.
2. Centers for Disease Control. Outbreak of Leptospirosis Among White-Water Rafters — Costa Rica, 1996. *MMWR* Vol 46(25), 1997: 577-579.
3. Chin J, ed. Leptospirosis. In: Control of Communicable Diseases Manual. 17th ed. Washington, DC: American Public Health Association, 2000: 293-296.
4. Mandell, Bennett, and Dolin. The Principles and Practice of Infectious Diseases. 5th Ed., Philadelphia, PA, 2000:pp. 2495-2501.

Links:

- CDC Leptospirosis Fact Sheet - http://www.cdc.gov/ncidod/dbmd/diseaseinfo/leptospirosis_g.htm

What is leptospirosis?

