



RELAPSING FEVER (Louse-borne, Tick-borne)

1. Agent:

Louseborne - *Borrelia recurrentis*, a spirochete.

Tickborne - many *Borrelia* species, distinguished by area of first isolation and/or vector.

2. Identification:

a. **Symptoms:** Periodic fever lasting 2 to 9 days alternating with 2 to 4 day afebrile periods; the number of relapses varies from 1 to 10 or more. The duration of louseborne illness averages 13 to 16 days; tickborne disease is longer. Transitory petechial rash is common during initial febrile episode.

b. **Differential Diagnosis:** Febrile illnesses associated with transitory rash.

c. **Diagnosis:** Darkfield preparation of fresh blood or stained thick films demonstrating the borreliae.

3. **Incubation:** 5-15 days, usually 8.

4. **Reservoir:** Louseborne: humans (Asia, Africa, and South America). Tick-borne: wild rodents.

5. **Source:** Louse-borne: *Pediculus humanus* (body louse). Tick-borne: in California, *Ornithodoros hermsi*; present only at higher altitudes.

6. **Transmission:** Louse-borne: by crushing an infected louse over the bite wound or skin abrasion. Tick-borne: from the bite or coxal fluid of an infected tick.

7. **Communicability:** Not person-to-person. A louse becomes infective 4 to 5 days after ingesting the borreliae, and remains so for the rest of its life (20-40 days). Ticks may remain infective for years.

8. **Specific Treatment:** Tetracyclines.

9. **Immunity:** Transient.

REPORTING PROCEDURES

1. **Reportable.** *California Code of Regulations*, Title 17, Section 2500. Immediately telephone report of case or suspect case is required if louseborne disease is suspected.

a. Call Morbidity Unit during working hours.

b. Call Acute Communicable Disease Control; after working hours, contact Administrative Officer of the Day (AOD) through County Operator.

2. **Report Form:** RELAPSING FEVER CASE REPORT, (CDPH 8561)

3. Epidemiologic Data:

a. A history of travel to, or visitors from endemic areas within incubation period. In southern California, tick-borne illness has been acquired in the San Bernardino and San Gabriel mountains above 5,000-ft. elevation.

b. Description of area where infection was probably acquired.

c. History and dates of insect and tick bites.

d. Exposure to rodents.

e. Louse-borne disease has not occurred in the United States for many years; it is associated with malnutrition, crowding and poor hygiene.

CONTROL OF CASE, CONTACTS & CARRIERS

Immediate investigation required. ACDC will supervise investigation and control measures.

CASE:

Isolation: None if no lice or ticks are present.

If patient dies, refer to **Part III, MORTICIANS & CEMETERIES.**



CONTACTS:

Asymptomatic, louse-infested persons with similar history of exposure. Immediate quarantine for 9 days or until residual insecticide is applied to premises.

PREVENTION-EDUCATION

1. Control rodents at higher elevations and rodent proof the structures.
2. Avoid contact with ticks and wild rodents.
3. Use residual insecticides for tick and louse control.

DIAGNOSTIC PROCEDURES

Consult with the Public Health Laboratory.

Serology: Collect blood in 7 ml. EDTA (purple top) tube. Submit to lab within 24 hours or prepare one thick and one thin smear.

Diagnosis is made by demonstration of borreliae in darkfield preparations of fresh blood or stained thick blood films, or by intraperitoneal inoculation of laboratory rats or mice with blood taken during a febrile episode.