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**LAC DPH Health Advisory:  
Increases of Flea-Borne Typhus  
November 16, 2022**



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*This message is intended for internal medicine, infectious disease, family medicine, pediatrics, emergency medicine, and urgent care providers.  
Please distribute as appropriate.*

### **Key Messages**

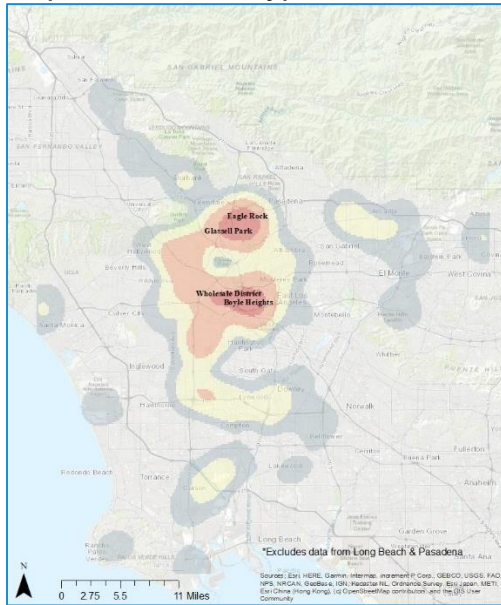
- Flea-borne typhus cases have been increasing across LA County. Currently there are two outbreaks in metropolitan Los Angeles: one in the neighboring communities of Eagle Rock and Glassell Park and the other in the neighboring communities of Wholesale District and Boyle Heights.
- Clinicians should consider flea-borne typhus in patients of all ages with febrile illness of unknown etiology.
- Flea-borne typhus is not transmitted between people. Standard precautions for patients should be used.

### **Situation**

Flea-borne typhus, also known as murine or endemic typhus, is on the rise in Los Angeles County (LAC). While flea-borne typhus is endemic in the county, there has been a significant increase in the annual number of documented cases in the past 5 years. The current 5-year average has doubled from previous years and is at 100 cases per year. This year, as of 11/02/2022, there has been a total of 99 cases of flea-borne typhus identified in LAC residents, including three deaths.

Currently, LAC DPH is investigating two outbreaks of flea-borne typhus identified in LA City; one in the neighboring communities of Glassell Park and Eagle Rock and the other in the neighboring communities of Boyle Heights and Wholesale District (see map on next page).

Map: Flea-borne Typhus Case Distribution in LAC (as of 10/26/22)



In the neighboring communities of Glassell Park and Eagle Rock, 11 outbreak-associated cases have been detected to date. Case ages range from 4 to 74 years. Cases were ill as early as April, but most illnesses occurred between August-October 2022. Among these cases, 7 were hospitalized and all recovered.

In the neighboring communities of Boyle Heights and Wholesale District in LA City, 13 outbreak-associated cases have been detected to date. Age range of the cases is 9 to 58. Of these cases, 4 are persons experiencing homelessness or living in interim housing facilities. Cases were ill between May-October 2022. Among these 13 cases, 12 were hospitalized and 1 died.

Outbreak-associated cases in both areas reported exposures to rodents, opossums, dogs, or free-roaming cats.

Most flea-borne typhus cases across the county recovered with treatment. However, the three deaths associated with a flea-borne typhus infection this year underscore that typhus can present as severe illness with complications. It is important for clinicians to consider flea-borne typhus in patients with febrile illness of unknown etiology.

## Background

Flea-borne typhus is a disease transmitted by fleas infected with *Rickettsia typhi* or *Rickettsia felis*. Cases are detected all year round with most cases becoming ill in the summer and fall months.

In LAC, the primary animals known to carry infected fleas include rats, free-roaming cats, and opossums. People with significant exposure to these animals are at risk of acquiring flea-borne typhus. Pet dogs and cats that are allowed outside may also come in contact with infected fleas and could carry them to humans. Infected animals are not known to get sick from flea-borne typhus.

Diagnosis requires a high degree of clinical suspicion as flea-borne typhus typically presents as a non-specific febrile illness and early diagnostic tests are unreliable. Severe complications from the infection can occur resulting in lengthy hospitalizations and, on rare occasions, death.

### **Actions Requested of Providers**

- Consider a diagnosis of flea-borne typhus in patients of all ages with a non-specific febrile illness with headache, myalgia, rash, and laboratory abnormalities including leukopenia, thrombocytopenia, and elevation of hepatic transaminases, without alternate identifiable etiology.
- Treat suspect cases promptly; do not wait for laboratory confirmation.
- Report all cases of flea-borne typhus within 1 working day.

### **Clinical Presentation**

Flea-borne typhus may be a mild, self-limited illness, or can present as severe disease requiring hospitalization. Symptoms occur 7 to 14 days after exposure, and typically include abrupt onset of fever, headache, chills, myalgia, abdominal pain, or vomiting. A maculopapular rash may appear after 1 week but may also be absent altogether. Severe cases may result in renal, pulmonary, hematological, hepatic, ophthalmologic, cardiac, or neurologic dysfunction. Common laboratory abnormalities include leukopenia, thrombocytopenia and elevation of hepatic transaminases. Adults with advanced age or G6PD deficiency are at greatest risk for severe or fatal disease.

### **Diagnosis**

As symptoms are non-specific and serological testing is unreliable in acute phases of infection, initial diagnosis and decision to treat should be based on clinical presentation and exposure history. Treatment for patients with suspected flea-borne typhus should not be delayed pending diagnostic tests.

Laboratory diagnosis can be conducted through serologic testing for *R.typhi* IgG and IgM antibodies. As there can be cross-reactivity with other rickettsiae, LAC DPH recommends also testing for antibodies against *R. rickettsii*, the causative agent of Rocky Mountain Spotted Fever. Serology performed on samples collected within the first week of symptom onset can often be false-negative. Confirmation of *R. typhi* diagnosis requires paired serology of acute and convalescent samples (drawn 2 weeks later) demonstrating a four-fold increase in IgG titers. However, as not all patients return for additional testing, a probable diagnosis can be made with a single positive sample plus supportive clinical and laboratory data. In patients with typical clinical presentation and exposure history within the first week of symptom onset, PCR testing can be considered through LAC DPH Public Health Laboratory (PHL) in addition to serology.

Serological tests for *R. typhi* and *R. rickettsii* are available at most commercial laboratories. The LAC DPH PHL provides both serological and PCR testing for Rickettsia. For more information on submitting specimens to PHL, see the laboratory testing guidelines on the LAC DPH Flea-Borne Typhus Testing [webpage](#).

## Treatment

Treat suspect cases promptly; do not wait for laboratory confirmation.

Flea-borne typhus is readily treated with antibiotics. Doxycycline is the treatment of choice for adults and children. Recommended dosages of doxycycline:

- Adults: 100 mg orally BID
- Children under 45 kg (100 lbs.): 2.2 mg/kg body weight given twice a day.

Patients should be treated for at least 3 days after the fever subsides and until there is evidence of clinical improvement (usually 7–10 days).

## Prevention

Counsel patients on how to reduce exposure to infected fleas including the following:

- Store trash and other food sources, including pet food and food waste for composting, in secured bins and/or clear it away from places of residence to avoid attracting animals.
- Discourage animals from nesting around your home by closing up crawl spaces and attics and trimming or removing vegetation around buildings.
- Avoid petting or feeding free-roaming animals.
- Use flea control products for domestic pets.
- When outside, consider using EPA–registered insect repellents.

Visit the LAC DPH Flea-Borne Typhus [webpage](#) for FAQs, flea prevention guidance, and other patient resources available in English and Spanish.



## Transmission and Infection Control

Person-to-person transmission does not occur. Humans are a dead-end host for flea-borne typhus. Standard precautions are indicated.

Patients should contact their local animal control agency to report feral cats and opossums and any other wild animal concerns.

## Reporting

*Los Angeles County DPH Acute Communicable Disease Control Program*

- Weekdays 8:30 AM – 5:00 PM: call 888-397-3993. For consultation: call 213-240-7941.
- After hours: call 213-974-1234 and ask for the physician on call.

*Long Beach Health and Human Services*

- Weekdays 8:00 AM – 5:00 PM: call 562-570-4302
- After hours: call 562-500-5537.

*Pasadena Public Health Department*

- Weekdays 8:00 AM – 5:00 PM call the Communicable Disease Control Program at 626-744-6089
- After hours: call 626-744-6043.

**Additional Resources**

- LAC DPH Flea-borne Typhus webpage  
[www.publichealth.lacounty.gov/acd/VectorTyphus.htm](http://www.publichealth.lacounty.gov/acd/VectorTyphus.htm)
- California Department of Public Health Flea-borne Typhus webpage  
[www.cdph.ca.gov/Programs/CID/DCDC/Pages/Typhus.aspx](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Typhus.aspx)

This Health Advisory was sent by Dr. Sharon Balter, Director, Division of Communicable Disease Control and Prevention, Los Angeles County Department of Public Health.

To view this and other communications or to sign-up to receive LAHANs, please visit <http://publichealth.lacounty.gov/lahan>

