LAHAN
Los Angeles County Health Alert Network

LAC DPH Health Alert:
Outbreaks of Flea-Borne Typhus
December 2, 2021

County of Los Angeles
Public Health

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

Key Messages

- An increased number of flea-borne typhus cases have been detected across Los Angeles County, including outbreaks in the Westlake area of LA City and unincorporated community of Willowbrook.
- Clinicians should consider flea-borne typhus in patients of all ages with febrile illness of unknown etiology (see *Clinical Presentation* below).
- Flea-borne typhus is not person-to-person transmissible, use standard contact precautions for patients.

Situation

As of 11/23/2021, 83 cases of flea-borne typhus have been identified in Los Angeles County (LAC) residents. LAC Department of Public Health (DPH) has documented an increase in flea-borne typhus cases across LAC compared to the previous 5-year average during the same time period.

Additionally, outbreaks of flea-borne typhus are being investigated in the Westlake neighborhood of LA City and in the unincorporated community of Willowbrook. Each outbreak has 7 cases with symptom onset ranging from April to October 2021. In Westlake, cases most commonly reported exposures to dogs and rodents. Among the 7 cases in Westlake, 3 were experiencing homelessness. In Willowbrook, cases reported exposure to pet dogs and/or cats, rodents, and opossums. All cases were hospitalized and have recovered.

Background

Flea-borne typhus, also known as murine or endemic typhus, is a disease transmitted by fleas infected with *Rickettsia typhi* or *Rickettsia felis*. Flea-borne typhus is endemic in LAC with cases detected each year. In recent years, the average number of cases reported to LAC DPH has doubled to over 80 cases per year. Most cases occur in the summer and fall months.

In LAC, the primary animals known to carry infected fleas include rats, feral 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 can occur resulting in lengthy hospitalizations and rarely death.

Actions Requested of Providers

- Consider a diagnosis of flea-borne typhus in patients 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.
- Report all suspected cases of flea-borne typhus within 1 working day. See *Reporting* below.

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, respiratory, 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 disease.

Diagnosis

As symptoms are non-specific and laboratory testing is unreliable in acute phases of infection, treatment decisions 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 also recommends 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.

Serological tests for *R. typhi* and *R. rickettsii* are available at most commercial laboratories. Testing is also available at LAC DPH Public Health Laboratory as part of a Rickettsial Antibody Panel. For more information on submitting specimens to PHL, see the laboratory testing guidelines on the LAC DPH Flea-Borne Typhus Testing webpage.

Treatment

Flea-borne typhus is readily treated with antibiotics. Doxycycline is the treatment of choice; the dose of doxycycline for adults is 100 mg orally BID. Treatment should occur for a minimum of five days or until 48 hours after patient becomes afebrile. Treat suspect cases promptly; do not wait for laboratory confirmation.

Prevention

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

- Store trash and other food sources 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 stray 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 FAQ, flea prevention guidance, and other patient resources.

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 and ask for the Duty Officer.

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

- Los Angeles County Department of Public Health Flea-borne Typhus webpage 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

- Centers for Disease Control and Prevention Murine Typhus webpage www.cdc.gov/typhus/murine/

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

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