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August 24, 2023

Dear Physician:

**SUBJECT: VECTOR-BORNE DISEASE RISK FOR LOS ANGELES COUNTY RESIDENTS**

Los Angeles County (LAC) residents are at increased risk of vector-borne diseases spread by local mosquitoes and other insect vectors over the summer and fall. The most common endemic vector-borne diseases in LAC are flea-borne (murine) typhus and mosquito-borne West Nile virus. Those traveling can acquire vector-borne diseases in other areas and bring these diseases to LAC including dengue, chikungunya and malaria. Department of Public Health (DPH) encourages health care providers to suspect and test for vector-borne threats and discuss prevention strategies routinely with patients and travelers.

**Important Vector-Borne Diseases in Los Angeles County:**

- **West Nile virus (WNV)** can cause up to 300 human cases of illness [each year in LAC](#). To date, 10 human cases have been detected in 2023 (see updated data during the season [here](#)). WNV may present as a non-specific febrile illness or neuroinvasive disease. Serologic testing for WNV IgM antibody is the standard for diagnosis and is available at many commercial laboratories. In patients with neurological symptoms IgM testing should be performed on serum as well as cerebrospinal fluid (CSF). Polymerase chain reaction (PCR) testing may be helpful earlier in the course of disease and in immunocompromised patients.
- **Saint Louis encephalitis virus (SLEV)**, another local mosquito-borne virus, re-emerged in LAC in 2016. It is closely related to WNV and indistinguishable clinically and on serologic tests. SLEV can be diagnosed through SLEV-IgM antibody testing of serum or CSF. Clinicians should consider obtaining SLEV serology if WNV is suspected, however, cross reactivity between WNV and SLEV can make it difficult to interpret.

- **Flea-borne typhus (FBT)** is spread by infected fleas from rodents, opossums and free-roaming cats. Cases reached a record count of 171 including three deaths in 2022 ([see Morbidity and Mortality Weekly Report: Fleaborne Typhus–Associated Deaths — Los Angeles County, California, 2022](#)). Signs and symptoms include fever, headache, a palm- and sole-sparing rash, hepatitis, and thrombocytopenia. Clinicians should inquire about animal exposures and consider FBT in patients of all ages with febrile illness of unknown etiology regardless of exposure history. Serology is the mainstay of diagnosis and available commercially, however, antibodies may be low or undetectable in early illness. Prompt treatment with doxycycline is important and should not be delayed while awaiting test results.

### **Vector-borne Diseases Among Travelers:**

Several reports in the past year of [locally-acquired dengue](#) and [malaria](#) in Arizona, Texas, and Florida and an international [chikungunya outbreak](#) have put public health agencies on high alert. No locally-transmitted cases of these diseases have occurred in LAC. The risk of local spread of malaria is very low in LAC as the *Anopheles* mosquito is not widespread in our region. However, there is some risk that an ill traveler may spread dengue or chikungunya to our local *Aedes* mosquitoes which are prevalent across the county. Providers should obtain travel history in all patients, and consider and test for these diseases in patients with clinically compatible illness, regardless of travel history. Testing for common mosquito-borne viruses by IgM antibody tests, or PCR (recommended in combination with serology during the first week of illness) can be performed at most commercial laboratories. Malaria is a medical emergency and requires rapid diagnosis and treatment. Clinicians should order thick and thin blood smears, and a rapid diagnostic test (RDT) if available, for diagnosis as soon as possible. Treatment recommendations for malaria vary by species and severity and can be found [here](#). Immediately report any patients without travel history suspected to have dengue, chikungunya, or malaria to Public Health.

### **The LAC DPH recommends that medical providers:**

- ✓ Order WNV testing for all patients with aseptic meningitis, encephalitis, acute flaccid paralysis, or nonspecific illness consistent with WNV fever, from now through December in California
- ✓ 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
- ✓ Obtain travel history in all patients and immediately report any patient suspected to have locally acquired dengue, chikungunya, Zika, or malaria
- ✓ Discuss prevention of vector-borne disease as part of routine care to decrease risk of exposure and illness

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### **Diagnostic Testing is Available at Public Health Laboratory:**

The LAC DPH Public Health Laboratory (PHL) can perform serology for WNV, SLEV, and flea-borne typhus; and PCR for dengue, chikungunya, and Zika. PHL does not charge the submitter for testing services. For more information on submitting specimens to PHL, refer to the PHL [testing catalog](#).

### **Discuss Prevention Measures with Patients:**

Physicians should discuss prevention at home and during travel with patients as part of routine care. Educate returning travelers suspected to have mosquito-borne illness of the need to protect themselves from mosquitoes at home during the first week of illness to prevent transmission in LAC. Prevention measures and educational materials that can be shared with patients can be found in the following resources:

- [ACDC West Nile Virus Health Education Materials](#)
- [CDC About Mosquitoes](#)
- [CDC Prevent Mosquito Bites](#)
- [CDC Malaria and Travelers](#)

### **Report to Public Health for Surveillance and Response:**

Health care providers are [mandated to report](#) these and other vector-borne infections to LAC DPH. Reporting cases guides public health, vector control districts, and other partner agencies to target vector abatement services, surveillance activities, outbreak response and health education.

Cases may be reported to Los Angeles County Department of Public Health by:

- Phone – call Acute Communicable Disease Control Program (ACDC) at (888) 397-3993 or
- Mail or fax - complete a [Confidential Morbidity Report \(CMR\)](#) form and follow fax and mail instructions.

Medical consultation regarding vector-borne diseases in humans, prevention, surveillance activities, and test interpretation is available by contacting ACDC at (213) 240-7941. To receive weekly WNV and arboviral surveillance reports send an email to [ACDC2@ph.lacounty.gov](mailto:ACDC2@ph.lacounty.gov). DPH looks forward to working with clinicians and laboratories in our vector-borne disease surveillance efforts.

Sincerely,

*Dawn Terashita for Dr. Balter*

Sharon Balter, M.D., M.F.A.

Director, Communicable Disease Control and Prevention

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