



# COUNTY OF ERIE

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DEPARTMENT OF HEALTH

**HEALTH ADVISORY #316**

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### **TESTING AND REPORTING OF ARBOVIRAL AND TICK-BORNE ILLNESSES**

**Please distribute to the Healthcare Providers, Infection Control Department, Emergency Department, Employee Health Service, Infectious Disease Department, Director of Nursing, Medical Director, Laboratory Service, and all patient care areas.**

The New York State Department of Health (NYSDOH) along with the Erie County Department of Health (ECDOH) is advising physicians on the procedures to test and report suspected cases of mosquito-borne illnesses, including West Nile virus (WNV) and eastern equine encephalitis virus (EEEV), and tick-borne illnesses including Lyme disease, babesiosis, anaplasmosis, ehrlichiosis, and Rocky Mountain Spotted Fever.

#### **SUMMARY**

##### Mosquito-borne (arboviral) illnesses:

- During the mosquito season, health care providers should consider mosquito-borne infections in the differential diagnosis of any adult or pediatric patient with clinical evidence of viral encephalitis or viral meningitis.
- All cases of suspected viral encephalitis should be reported immediately to the local health department.
- Wadsworth Center, the NYSDOH public health laboratory, provides testing for a number of domestic, exotic, common and rare viruses. The tests performed will depend on the clinical characteristics and status of the patient. Health care providers should contact the LHD of the patient's county of residence prior to submission of specimens.
- Erie County had 0 cases of WNV in 2013, 12 cases in 2012, and 3 cases in 2011.

##### Tick-borne illnesses:

- Tick-borne disease symptoms vary by type of infection and can include fever, fatigue, headache, and rash.
- Clinicians are encouraged to make use of "Tickborne Diseases of the U.S.: A Reference Manual for Providers, published by the Centers for Disease Control and Prevention (CDC), <http://www.cdc.gov/lyme/resources/TickborneDiseases.pdf> . The manual contains information on tick identification, tick-borne disease symptoms, laboratory testing, and recommended treatment.

- While Lyme disease continues to be the most prevalent tick-borne disease in New York State (NYS), other tick-borne diseases such as babesiosis and anaplasmosis, are spreading geographically within the state.
- An article in the December 12, 2013 Morbidity and Mortality Weekly Report (MMWR) describes three cases, which involve sudden cardiac deaths from Lyme carditis in individuals who did not know they had Lyme disease. NYSDOH has been working with its counterparts in Massachusetts and Connecticut and the Centers for Disease Control and Prevention (CDC) on myocarditis associated with Lyme disease.
- Testing for tick-borne diseases should be conducted by commercial labs.
- Erie County had 21 cases of Lyme disease in 2013, 11 cases in 2012, and 14 cases in 2011.

## BACKGROUND

Mosquito-borne diseases, such as EEEV and WNV, continue to occur annually in NYS. EEEV is regarded as one of the most serious mosquito-borne diseases in the United States because of its high mortality rate. NYS has had fatal human cases of EEEV in prior years. WNV continues to be detected across NYS, occasionally resulting in human fatalities. In partnership with LHDs, NYSDOH continues to conduct surveillance activities for EEEV and WNV; a critical component of these efforts is the rapid detection and timely reporting of cases of viral encephalitis and viral meningitis by medical providers.

Lyme disease continues to be the most prevalent tick-borne disease in NYS with over 120,000 cases having been reported since 1986. The tick that carries the bacteria that causes Lyme disease (black-legged/deer tick) can also carry pathogens that cause babesiosis and anaplasmosis. Disease surveillance trends for both of these diseases show an expanding geographic range beyond the Hudson River valley to areas further north and west than they have been seen in previous years. Lyme carditis occurs when *Borrelia burgdorferi*, infects the tissues of the heart. The most common cardiac manifestation of Lyme disease is atrioventricular block (AV). Second-degree or third-degree atrioventricular block occurs in approximately 0.8% of all reported Lyme disease cases. Lyme carditis usually presents in conjunction with other symptoms of Lyme disease such as *erythema migrans* (EM), arthritis or neurologic disease, although it can present independently.

The seasonal pattern seen in Lyme disease is also true of ehrlichiosis which is transmitted by the Lone Star tick. Rocky Mountain Spotted Fever (RMSF), transmitted by the American dog tick, is rarer than other tick-borne diseases however cases continue to be reported across NYS annually. Powassan encephalitis, a tick-borne viral illness that can cause encephalitis or meningitis, is found in low, but increasing, numbers in the State.

## REPORTING CASES OF ARBOVIRAL AND TICK-BORNE ILLNESS

Under NYS Public Health Law 2012 and 10NYCRR 2.10, health care providers should ***immediately report*** by telephone any patient with suspected viral encephalitis. The report should be made to the LHD of the patient's county of residence. Viral meningitis is also reportable under public health law but immediate notification is not required. Providers should report cases of tick-borne disease to the LHD as soon as possible after diagnosis. This includes patients who are diagnosed and treated based solely or in part on clinical presentation and history. **Erie County residents should be reported to the ECDOH Epidemiology and Disease Surveillance Program at (716)858-7697 during normal business hours and (716)961-7898 after hours.**

## TESTING AND COLLECTION OF SPECIMENS

Wadsworth Center offers testing for mosquito-borne viruses, including WNV and EEEV. Cerebrospinal fluid (CSF) testing by polymerase chain reaction (PCR) may be less sensitive than testing serum by serology. Therefore, ideally, both CSF and acute/convalescent serum specimens should be submitted for testing. Convalescent specimens should be drawn at least 3 weeks after acute specimens.

Instructions on the collection and submission of clinical specimens and a detailed algorithm about which tests will be conducted on submitted specimens, and the Viral Encephalitis/Meningitis Case Report and History Forms can be found on the Wadsworth Center website at: <http://www.wadsworth.org/divisions/infdis/enceph/form.htm>.

Wadsworth Center also offers testing for tick-borne diseases. Depending upon the disease, testing can involve whole blood smear examination, PCR, or serologic testing. Confirmation of cases of tick-borne disease via collection of both acute and convalescent specimens is necessary. Further information on accessing non-commercial, public health testing for tick-borne disease at the Wadsworth Center can be obtained by calling your LHD or the NYSDOH.

Providers are reminded to utilize commercial laboratories for routine testing of patients with suspected Lyme disease. A two-tier testing protocol is recommended for Lyme disease; an EIA or IFA should be performed first, followed by a Western blot if the EIA or IFA is positive or equivocal. It is important to note that serologic tests for Lyme disease are insensitive during the first few weeks of infection. During this stage, patients with an erythema migrans rash may be diagnosed clinically.

### **CONTACT PHONE NUMBER**

ECDOH Epidemiology and Disease Surveillance Program: (716)858-7697 during normal business hours and (716)961-7898 after hours.

### **ADDITIONAL INFORMATION**

Additional information on mosquito and tick-borne diseases can be found at: [http://www.health.ny.gov/diseases/west\\_nile\\_virus/](http://www.health.ny.gov/diseases/west_nile_virus/)

<http://www.health.ny.gov/diseases/communicable/lyme/index.htm>

#### **Health Category Definitions:**

**Health Alert FLASH:** conveys the highest level of importance due to a large-scale, catastrophic public health emergency; warrants immediate action or attention

**Health Alert Priority:** conveys the highest level of importance; warrants immediate action or attention to a health problem or situation

**Health Advisory:** provides important information for a specific incident or situation; may not require immediate action

**Health Update:** provides updated information regarding an incident or situation; no immediate action necessary

The Erie County Department of Health does not provide medical advice. The information provided on the Erie County Department of Health website is not an attempt to practice medicine and is not intended as a substitute for professional medical advice, diagnosis, or treatment. It is for informational purposes only. Always seek the advice of your personal physician or other qualified health provider with any questions you may have regarding a medical condition or issue. Never disregard professional medical advice or delay in seeking it because of the content found on the Erie County Department of Health website or this correspondence.

The ECDOH Health Alert & Advisory System is an e-mail notification system designed to alert community partners about important health related information. You can sign up to receive alerts & advisories at <http://www2.erie.gov/health/index.php?q=node/59>.