

IN THIS ISSUE: West Nile Virus in Washoe County

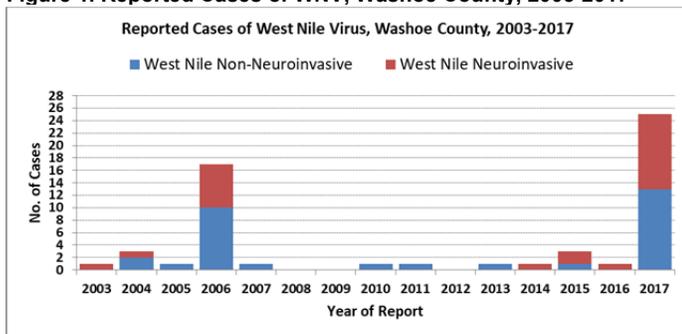
Get Ready for West Nile Virus

Introduction

On July 25, the Washoe County Health District (WCHD) announced that mosquito samples from the Damonte Ranch and Hidden Valley areas have tested positive for West Nile Virus (WNV). These are the first positive tests in Washoe County in 2018. This suggests that human cases will be seen in the near future. During the past three years in Washoe County, it was 3-4 weeks between the date of identification of positive mosquito pools and the date of reported human cases.

A total of 25 cases of WNV were reported in 2017, the highest incidence in the history of Washoe County. The first human case in Washoe County was identified in 2003 (Figure 1). Of 25 cases, nearly half of them had neuro-invasive disease.

Figure 1. Reported Cases of WNV, Washoe County, 2003-2017



The purposes of this Epi-News are:

1. Understand the correlation between aseptic meningitis and WNV disease. Testing for enterovirus is also recommended.
2. Know who should be tested for WNV.
3. Know available tests for WNV.

Correlation between Aseptic Meningitis and WNV

Although most people infected with WNV do not develop any symptoms, about 1 in 150 persons who are infected develop a severe neuro-invasive illness that includes encephalitis or meningitis. Of the 25 WNV cases reported in 2017, 12 cases (48%) had the neuro-invasive form of the disease. This large proportion of severe cases suggests that many mild illnesses likely were not seen by healthcare providers (HCP) and, therefore, not reported to WCHD.

A correlation analysis was performed using the reported incidence of aseptic meningitis (AM) and

WNV disease from 2005-2016. The Pearson Correlation coefficient for both is 0.583 (i.e., 58%), which is statistically significant (P=0.023, unpublished data, WCHD). This means both diseases have a moderately high correlation. Because many clinicians do not order etiological testing for patients with aseptic meningitis; WCHD highly recommends that clinicians consider WNV as one of the differential diagnoses.

In addition, in 2017, there was a community-wide outbreak of enterovirus between July and December. WCHD also recommends that clinicians consider **enterovirus** as one of the differential diagnoses, along with WNV, when AM is diagnosed.

WNV Target Testing

WNV testing is recommended for individual with the following:

1. Encephalitis
2. Aseptic meningitis (Note: Consider enterovirus for individuals ≤ 18 years of age, especially when there is no mosquito bite history)
3. Acute flaccid paralysis; atypical Guillain-Barré syndrome, transverse myelitis; or
4. Febrile illness compatible with West Nile Fever and lasting ≥ 7 days (must have been diagnosed by a health care provider). The West Nile fever syndrome can be variable and often includes headache and fever (T≥38°C). Other symptoms include rash, swollen lymph nodes, eye pain, nausea or vomiting. After initial symptoms, the patient may experience several days of fatigue and lethargy.

Diagnostic Tests

1. **IgM EIA testing is the frontline test for WNV diagnosis.** This can be used for both serum and CSF specimens. The IgG EIA test is used as an adjunct test. Ideal timing of specimen collection for serology is 3-10 days after onset of symptoms for acute serum and then 2-3 weeks after for convalescent serum.
2. Molecular methods (RT-PCR) for WNV testing can be used for CSF as an adjunct to the serologic tests. RT-PCR may also be used on serum in immunocompromised patients.

All of the above tests are available at LabCorp, Quest, ARUP, and Nevada State Public Health Laboratory.

To report a case of WNV, call WCHD at 775-328-2447 or fax to 775-328-3764.