This is an official

DHEC Health Advisory

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Public Health Surveillance and Laboratory Testing for West Nile Virus, 2017

Summary

This SC DHEC Health Advisory is provided as guidance to clinicians for West Nile Virus (WNV) testing, the criteria for testing and specimen requirements for WNV testing performed by the SC DHEC Public Health Laboratory (PHL). Residents or visitors to affected counties who develop WNV signs or symptomatology (see below) are encouraged to seek medical evaluation.

Background

To date for 2017 SC DHEC has received reports of 11 human cases of West Nile Virus in Anderson, Beaufort, Greenville, Horry, Richland, Union, and York counties. One West Nile Virus related death has been reported this year. DHEC and local officials are aware of animal (horse and birds) and mosquito (75) samples in Anderson, Beaufort, Colleton, Greenville, Kershaw, Lexington, Richland, Saluda, and York counties that have tested positive for West Nile virus. While these findings are not uncommon, the State Entomologist and local mosquito control agencies are taking appropriate measures to reduce the risk to local residents and visitors.

WNV Clinical Manifestations

The incubation period for WNV disease is typically 2 to 6 days but ranges from 2 to 14 days

Asymptomatic:
Most people (up to 80%) who are infected with WNV remain asymptomatic.

West Nile Fever:
Approximately 20% usually develop West Nile Fever. Most of these patients can be treated supportively and do not require hospitalization.

- Common symptoms of West Nile Fever are:
  - Fever
  - Headache
  - Fatigue
- Occasional symptoms of West Nile Fever are:
  - Truncal Rash
  - Eye Pain
  - Lymphadenopathy
Neuroinvasive West Nile Disease:
Very few patients develop neuroinvasive WNV disease, which includes meningitis, encephalitis, and meningoencephalitis. These are usually indistinguishable from similar syndromes caused by other viruses.

Severe neurologic disease due to WNV infection has occurred in persons of all ages, and because year-round transmission is possible in southern states, WNV should always be considered in persons with unexplained encephalitis and meningitis.

- **West Nile meningitis:**
  Symptoms include fever, headache, and nuchal rigidity. CSF pleocytosis is present with a predominance of lymphocytes. Protein is elevated and glucose is normal.

- **West Nile encephalitis:**
The most severe form of neuroinvasive WNV disease, involves fever and headache with more global neurological symptoms, such as:
  - Altered mental status
  - Confusion
  - Somnolence
  - Coma
  - Focal neurological deficits such as limb paralysis or cranial nerve palsies
  - Tremors, movement disorders

- **West Nile poliomyelitis:**
A flaccid paralysis syndrome associated with WNV infection, is less common than meningitis or encephalitis.

*It is important to note that headache alone is not a useful indicator of neuroinvasive disease since it is also a key finding in WNV Fever.*

Testing for West Nile Virus

- Clinicians should include WNV in a differential diagnosis in anyone with a history of travel to an affected area of SC, presenting with a febrile illness.

- Any patient who is hospitalized for meningitis, encephalitis or meningoencephalitis that is not secondary to a bacterial, fungal or amoebic etiology should be tested for WNV. If WNV results are negative, testing for other arboviral illnesses (although very rare in South Carolina) is recommended.

- The most efficient diagnostic method is detection of IgM antibody to WNV in serum collected within 8 to 14 days of illness, or IgM antibody in CSF collected within 8 days of illness onset.

- A single serum or CSF IgG is not indicated for the diagnosis of acute disease and should not be performed. However, a four-fold increase in IgG antibody titer between paired acute and convalescent serum samples can be used to confirm recent WNV infection.

- PCR is not usually used in the diagnosis of WNV in humans, and is not offered by the DHEC PHL. PCR has limited usefulness due to the low and transient viremia associated with WNV, and has a sensitivity of only about 50%.

- Patients who have given blood and are NAT (nucleic acid amplification test) positive for WNV RNA who are not symptomatic should not be tested for WNV via serology.
References and Additional Information

- CDC West Nile virus information page: https://www.cdc.gov/westnile/index.html
- DHEC West Nile virus information page: http://www.scdhec.gov/westnile/

DHEC contact information for reportable diseases and reporting requirements

Reporting of West Nile Virus disease is consistent with South Carolina Law requiring the reporting of diseases and conditions to your state or local public health department. (State Law # 44-29-10 and Regulation # 61-20) as per the DHEC 2017 List of Reportable Conditions available at: http://www.scdhec.gov/Library/CR-009025.pdf

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities to collect and receive such information for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512).

Regional Public Health Offices – 2017
Mail or call reports to the Epidemiology Office in each Public Health Region

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<tr>
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<tr>
<td><strong>Lowcountry</strong></td>
<td>4050 Bridge View Drive, Suite 600 N. Charleston, SC 29405 Fax: (843) 953-0051</td>
<td>2000 Hampton Street Columbia, SC 29204 Fax: (803) 576-2993</td>
<td>200 University Ridge Greenville, SC 29602 Fax: (864) 282-4373</td>
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<td>Berkeley, Charleston, Dorchester Phone: (843) 953-0043 Nights/Weekends: (843) 441-1091</td>
<td>Kershaw, Lexington, Newberry, Richland Phone: (803) 576-2749 Nights/Weekends: (888) 801-1046</td>
<td>Chesterfield, Darlington, Dillon, Florence, Marlboro, Marion Phone: (843) 661-4830 Nights/Weekends: (843) 915-8845</td>
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<td>Beaufort, Colleton, Hampton, Jasper Phone: (843) 322-2453 Nights/Weekends: (843) 441-1091</td>
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<td>Allendale, Bamberg, Calhoun, Orangeburg Phone: (803) 268-5833 Nights/Weekends: (843) 441-1091</td>
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| **For information on reportable conditions, see** | **DHEC Bureau of Disease Control** |
| http://www.scdhec.gov/Health/FHPF/ReportDiseasesAdverseEvents/ReportableConditionsInSC/ | **Division of Acute Disease Epidemiology** |
| 2100 Bull St • Columbia, SC 29201 Phone: (803) 898-0861 • Fax: (803) 898-0897 Nights / Weekends: 1-888-847-0902 |

Categories of Health Alert messages:

- **Health Alert** Conveys the highest level of importance; warrants immediate action or attention.
- **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; unlikely to require immediate action.
- **Info Service** Provides general information that is not necessarily considered to be of an emergent nature.