Public Health

W. BRIAN BYRD, M.D., Local Health Authority & Health Director CATHERINE A. COLQUITT, M.D., Medical Director

August 6, 2024 **Health Advisory**

Increase in West Nile Virus (WNV) Disease for the 2024 Season in Tarrant County

This message is intended for clinicians, including those working in emergency medicine, urgent care, clinics, critical care, infectious diseases and laboratories in Tarrant County. Please distribute as appropriate

Key Messages

- There is an increase in WNV activity, with 22 human cases and over 400 positive mosquito pools in Tarrant County.
- WNV can cause mild to severe illness, including neuroinvasive disease.
- Clinicians should consider WNV in patients with fever, headache, or neurological symptoms and report cases to local health authorities.

Summary

Tarrant County Public Health (TCPH) has observed a significant increase in West Nile Virus (WNV) activity for the 2024 season. Since the first human case of the year was reported on July 13, there have been 22 cases, 3 non-neuroinvasive and 19 neuroinvasive resulting in 18 hospitalizations. As of the date of this alert one death has occurred. Sixty-four percent (64%) of cases have been female and 36% male. The median age has been 62.5 years.

As of August 1, 2024, TCPH has reported over 400 positive mosquito pools (see dashboard of mosquito surveillance) in 2024. West Nile Virus activity in *Culex* vector mosquito is currently "high" as shown in the TCPH mosquito report for the week that ended July 27 (report link) .

Background

West Nile Virus is a mosquito-borne infection that can cause various symptoms. According to the Centers for Disease Control and Prevention, an estimated 70-80% of people infected with WNV are asymptomatic and do not develop any illness. About 20% of those infected develop West Nile fever, which includes symptoms such as fever, headache, body aches, joint pains, vomiting, diarrhea, or rash (which can present as a generalized, maculopapular rash on the trunk, back or arms). The incubation period for WNV disease is typically 2 to 6 days but ranges from 2 to 14 days can be several weeks in immunocompromised people.

Severe illness can occur, particularly in older adults, those with underlying medical conditions, or individuals with weakened immune systems. Severe cases involve neuroinvasive disease such as meningitis or encephalitis and can lead to death. Symptoms of neuroinvasive disease include; high fever, neck stiffness, stupor, disorientation, coma, tremors, seizures, and paralysis.

Rarely, cardiac dysrhythmias, myocarditis, rhabdomyolysis, optic neuritis, uveitis, chorioretinitis, orchitis, pancreatitis, and hepatitis have been described in patients with WNV disease.

Recommendations for Healthcare Providers

Consider WNV in the differential diagnosis for patients presenting with febrile illness, especially those with neurological symptoms such as encephalitis, meningitis, or acute flaccid paralysis. Key actions for clinicians include:

- **Testing and diagnosis**: Order appropriate diagnostic tests, including WNV-specific IgM antibodies and PCR testing.
- **Clinical management**: Provide supportive care for patients with WNV. There is no specific antiviral treatment for WNV; management focuses on relieving symptoms and, in severe cases, may involve hospitalization and supportive therapies such as intravenous fluids, pain management, and prevention of secondary infections.
- **Reporting:** Timely reporting of suspected and confirmed cases to the local health department (**Tarrant County Public Health – fax 817-850-2366) is** important for public health monitoring and response. This helps track the spread of the virus and implement control measures.

Laboratory information

Laboratory testing is crucial for the diagnosis of WNV. Key tests include:

- **Serological tests**: Detect WNV-specific IgM antibodies in serum or cerebrospinal fluid (CSF) using enzyme-linked immunosorbent assay (ELISA) or other serological tests. IgM antibodies are typically detectable within a few days of the onset of illness and can persist for months.
- **PCR (Polymerase Chain Reaction) testing**: Used to detect viral RNA in blood or CSF. This method can confirm active infection and is especially useful in the early stages of infection when viral RNA is present.

Laboratory interpretation

- **Positive WNV IgM Antibody Test:** Indicates a recent WNV infection. Since IgM antibodies can persist for months, a positive test does not necessarily indicate a current infection. Clinical correlation with symptoms and other diagnostic findings is necessary.
- **Negative WNV IgM Antibody Test:** This does not rule out infection, mainly if the test is conducted early in the course of illness before antibodies have developed. Repeating testing or alternative diagnostic methods may be necessary if clinical suspicion remains high.
- **Positive PCR Test:** Confirms active WNV infection by detecting viral RNA in blood or CSF.

Recommendations for the public

Residents are urged to take preventive measures to reduce their risk of WNV infection. Key recommendations include:

- **Use insect repellent**: Use Environmental Protection Agency (EPA)-registered insect repellents. Choose repellents containing DEET, picaridin, oil of lemon eucalyptus, or IR3535.
- **Wear protective clothing**: Wear loose fitting long-sleeved shirts and long pants outdoors, especially during peak mosquito activity times from dusk to dawn.
- **Control mosquitoes indoors and outdoors**: Ensure that windows and doors have intact screens to keep mosquitoes out. Outdoors eliminate standing water in items such as flowerpots, gutters, buckets, pool covers, birdbaths, and pet water dishes where mosquitoes can breed.

Conclusion

The increase in WNV cases and positive mosquito pools in 2024 highlights the need for heightened awareness and preventive measures. TCPH continues to monitor the situation closely and urges residents to remain vigilant in protecting themselves from mosquito bites.

Reference

West Nile Virus | NIOSH | CDC

West Nile Virus | Texas DSHS

https://www.who.int/news-room/fact-sheets/detail/west-nile-virus

Tarrant County Public Health (TCPH) emails priority communication to health care professionals through the Health Alert Network (HAN). TCPH now uses a tiered communication system:

Alert:	Conveys the highest level of importance; warrants immediate action or attention
Advisory:	Provides important information for a specific incident or situation; may not require immediate action.
Update:	Provides update information regarding an incident or situation; unlikely to require immediate action.
Information:	Provides general information that is not necessarily considered to be of an emergent nature.

P Nweke; R Jones