

West Nile Virus (WNV) Diagnosis

Potential Exposures to WNV

- Mosquitoes
- Blood transfusion
- Organ transplantation
- Laboratory
- Mother to baby

Risk Factors for Severe WNV Disease

- Age \geq 60 Years
- Hypertension
- Diabetes
- Cancer
- Chronic kidney disease
- Alcohol use disorder
- Immunosuppressive drugs or conditions

Suspected WNV Disease

Patient presents with **fever** and recent **exposure** (within 2–6 days, up to 14 days)*

WNV Fever: (20–30% of infections); fever, headache, fatigue, myalgia, nausea, vomiting, occasional rash

Suspected WNV disease

Guillain-Barré Syndrome:
(immune-mediated demyelinating peripheral neuropathy; 1–8 weeks after infection); symmetrical, ascending weakness, sensory loss, painful paresthesias

WNV Neuroinvasive Disease:
($<$ 1% of infections, 10% fatality)

Acute Flaccid Myelitis:
(viral infection of anterior horn cells; 24–48 hours after fever onset); asymmetrical limb weakness, risk of respiratory failure

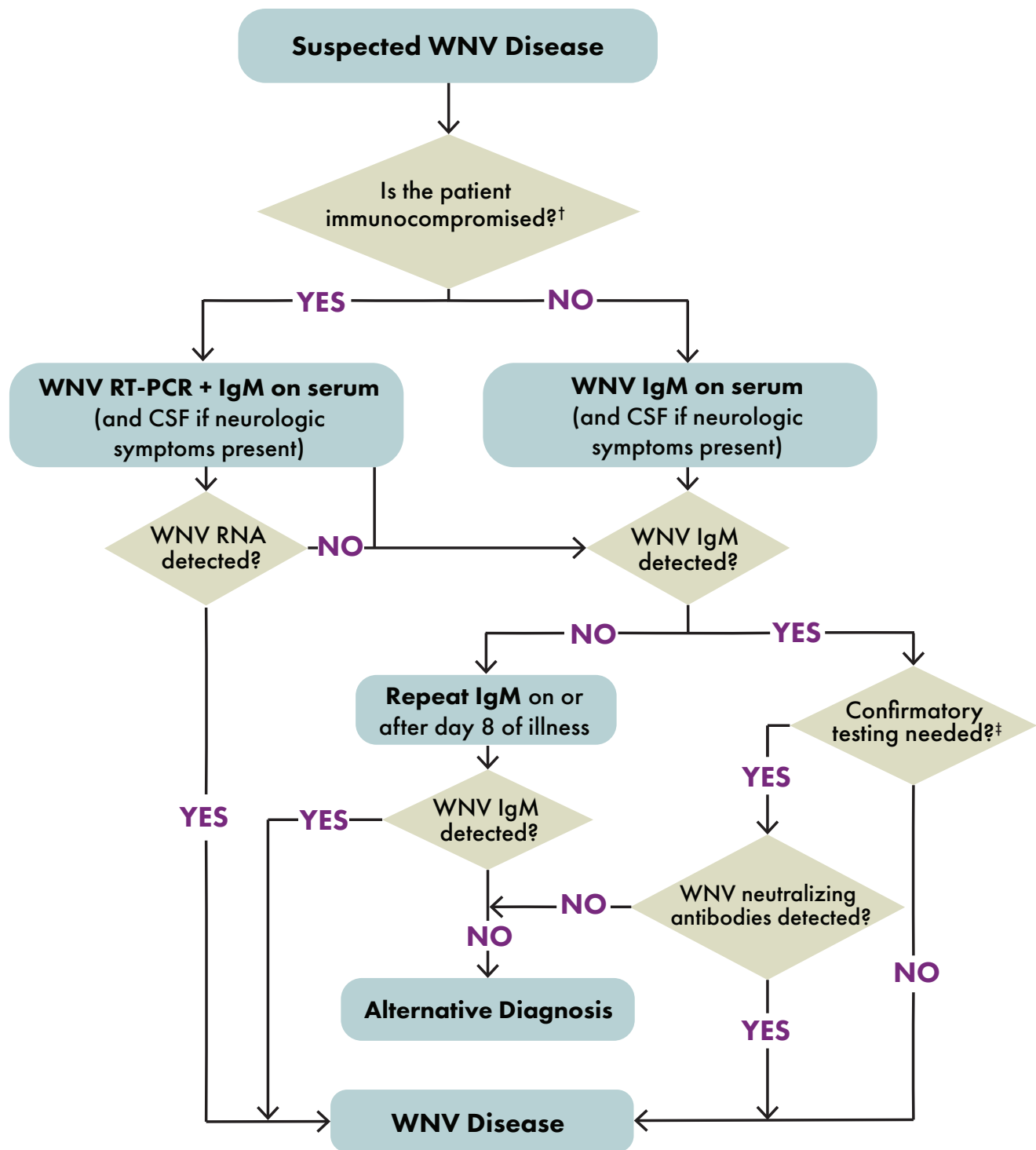
Meningitis:
headache, neck stiffness, photophobia

Encephalitis:
altered mental status, lethargy, seizures, focal neurologic deficits, movement disorders

Other Possible Complications (rare):

- Myocarditis
- Rhabdomyolysis
- Optic neuritis
- Uveitis
- Chorioretinitis
- Orchitis
- Pancreatitis
- Hepatitis

Diagnostic Testing Algorithm



WNV IgM can usually be performed at commercial or state public health laboratories. Contact your state or local health department to request specialized testing or if you suspect an unusual route of transmission.

Footnotes

* Symptom onset may be up to 5 weeks following organ transplantation.

† Viral RNA is usually negative by the time patients present with symptoms; however, immunocompromised patients can have prolonged viremia and delayed antibody responses. If patient is on a B-cell depleting immunotherapy (e.g., rituximab), initial testing with WNV RT-PCR is recommended. Patient on B-cell depleting immunotherapies often cannot mount an antibody response, even up to 12 months after discontinuing the drug.

‡ Indications for confirmatory testing by plaque reduction neutralization test (PRNT): possible exposure to cross-reactive flaviviruses (e.g., St. Louis encephalitis virus, dengue virus); atypical or unusually severe presentation or death; suspected unusual route of transmission (e.g., organ transplant, blood transfusion, laboratory); presentation outside of the typical arboviral season (i.e., April–October).



Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases