

## Tick-borne Disease Summary Table

Anaplasmosis		
Clinical Presentation <sup>1</sup>	Diagnostic Testing <sup>2</sup>	Treatment
<ul style="list-style-type: none"> <li>▪ Incubation: 1-2 weeks (up to 21 days) after a bite from an infected tick.</li> <li>▪ Infections usually last 1-2 weeks if untreated, with persistent symptoms up to 60 days infrequently seen in subacute cases.</li> <li>▪ Symptoms can include:               <ul style="list-style-type: none"> <li>○ Fever, chills, severe headache, myalgia</li> <li>○ Abdominal pain, nausea, vomiting, diarrhea, and/or loss of appetite</li> <li>○ Respiratory, central nervous symptoms, and rash are infrequently reported.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Preferred method of testing is serology. Acute and convalescent blood or serum specimens collected 2-3 weeks apart are required to confirm infection.</li> <li>▪ Diagnosis and treatment are determined at a clinical level based on signs and symptoms and is later confirmed with laboratory tests.</li> <li>▪ For additional information, refer to: <a href="https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Anaplasma-Serology">https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Anaplasma-Serology</a></li> </ul>	<ul style="list-style-type: none"> <li>▪ Post-tick bite antibiotic prophylaxis not recommended.</li> <li>▪ Treatment of asymptomatic individuals not recommended.</li> <li>▪ Lack of a clinical response to doxycycline suggests that the individual's condition might not be due to Lyme disease or anaplasmosis, or might be caused by other infections (e.g. babesiosis or POWV) not responsive to doxycycline.</li> <li>▪ For additional information on treatment options and dosage refer to the following resource: <a href="https://www.cdc.gov/anaplasmosis/health-care-providers/">https://www.cdc.gov/anaplasmosis/health-care-providers/</a></li> </ul>
Babesiosis		
Clinical Presentation	Diagnostic Testing	Treatment
<ul style="list-style-type: none"> <li>▪ Incubation: 1-4 weeks after a bite from an infected tick bite.</li> <li>▪ Most infections are asymptomatic.</li> <li>▪ Infected individuals may show mild to severe systemic symptoms, such as:               <ul style="list-style-type: none"> <li>○ Fever, chills, sweats, headache, body aches, fatigue</li> <li>○ Nausea and/or loss of appetite,</li> <li>○ Hemolytic anemia</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Preferred method of testing is microscopic examination of an unstained blood slide. A single negative microscopic examination is not sufficient to rule out infection.</li> <li>▪ PCR can be used to provide confirmation of infection; however, result turnaround can be up to 42 days.</li> <li>▪ Serology provides supportive evidence of infection for individuals with clinical or epidemiologic risk factors for babesiosis.</li> <li>▪ For additional information, refer to: <a href="https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Babesia-Serology">https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Babesia-Serology</a>  <a href="https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Babesia-Microscopy">https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Babesia-Microscopy</a></li> </ul>	<ul style="list-style-type: none"> <li>▪ Post-tick bite antibiotic prophylaxis is not recommended.</li> <li>▪ Treatment of asymptomatic individuals is not recommended.</li> <li>▪ For additional information on treatment options and dosage refer to the following resources: <a href="https://www.cdc.gov/parasites/babesiosis/health_professionals">https://www.cdc.gov/parasites/babesiosis/health_professionals</a> <a href="https://www.idsociety.org/practice-guideline/babesiosis">https://www.idsociety.org/practice-guideline/babesiosis</a></li> </ul>

<sup>1</sup> Coinfection with multiple tick-borne diseases is a risk factor for severe illness.

<sup>2</sup> For test requisition forms, refer to PHOL's test information index, at: <https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index>

Lyme Disease		
Clinical Presentation <sup>3</sup>	Diagnostic Testing <sup>4</sup>	Treatment
<ul style="list-style-type: none"> <li>▪ Incubation: 3 to 30 days after a bite of an infected tick.</li> <li>▪ 70% of infected individuals with early localized disease will have erythema migrans rash (typical or atypical).</li> <li>▪ Other symptoms of early localized disease can include: <ul style="list-style-type: none"> <li>○ Fever, chills, headache, body aches, fatigue, and loss of appetite</li> </ul> </li> <li>▪ Symptoms may not be apparent in early localized disease and individuals may present with later manifestations including: <ul style="list-style-type: none"> <li>○ Recurrent arthritis affecting large joints (i.e., knees)</li> <li>○ Peripheral neuropathy</li> <li>○ Meningitis, encephalopathy, ophthalmic conditions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Preferred method of testing is serology. Acute and convalescent blood or serum specimens collected 2-3 weeks may be required to confirm infection.</li> <li>▪ Serologic testing for asymptomatic individuals is not recommended.</li> <li>▪ Serologic testing is not recommended for individuals presenting with early localized disease including erythema migrans.</li> <li>▪ For additional information, refer to: <a href="https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Lyme-Disease-Serology">https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Lyme-Disease-Serology</a></li> </ul>	<ul style="list-style-type: none"> <li>▪ Antibiotic prophylaxis may be provided to prevent the development of Lyme disease following a tick bite.</li> <li>▪ Lack of a clinical response to doxycycline suggests that the individual's condition might not be due to Lyme disease or anaplasmosis, or might be caused by other infections (e.g. babesiosis or POWV) not responsive to doxycycline.</li> <li>▪ For additional information on treatment or prophylaxis options and dosage refer to the following resource: <a href="https://www.hqontario.ca/Portals/0/documents/evidence/qs-lyme-disease-clinical-guidance-2023-en.pdf">https://www.hqontario.ca/Portals/0/documents/evidence/qs-lyme-disease-clinical-guidance-2023-en.pdf</a></li> </ul>
Powassan Virus		
Clinical Presentation	Diagnostic Testing	Treatment
<ul style="list-style-type: none"> <li>▪ Incubation: 1-4 weeks after a bite of an infected tick.</li> <li>▪ Most infections are asymptomatic.</li> <li>▪ Infected individuals may show mild to severe symptoms such as: <ul style="list-style-type: none"> <li>○ Fever, headache, asthenia, and/or myalgia</li> <li>○ Nausea and/or vomiting</li> <li>○ Encephalitis, meningitis, confusion, seizures and/or loss of motor-skills</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Preferred method of testing is serology. Acute and convalescent blood or serum specimens collected 2-3 weeks apart are required to confirm infection.</li> <li>▪ All POWV test submissions must be accompanied by a <i>General Test Requisition Form</i> and a supplementary <i>Arbovirus Form</i>.</li> <li>▪ For additional information and test requisition forms, refer to: <a href="https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Powassan-Encephalitis-Serology">https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Powassan-Encephalitis-Serology</a>  <a href="https://www.publichealthontario.ca/-/media/Documents/Lab/arbovirus-intake-form.pdf?">https://www.publichealthontario.ca/-/media/Documents/Lab/arbovirus-intake-form.pdf?</a></li> </ul>	<ul style="list-style-type: none"> <li>▪ No specific therapy is available to treat POWV infection. Symptom management is the mainstay of treatment.</li> <li>▪ For additional information refer to the following resources: <a href="https://www.cdc.gov/powassan/healthcareproviders.html">https://www.cdc.gov/powassan/healthcareproviders.html</a></li> </ul>

<sup>3</sup> Coinfection with multiple tick-borne diseases is a risk factor for severe illness.

<sup>4</sup> For test requisition forms, refer to PHOL's test information index, at: <https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index>