Appendix B: Provincial Case Definitions for Reportable Diseases

Disease: Meningococcal disease, invasive

Revised January 2014
Meningococcal disease, invasive

1.0 Provincial Reporting

Confirmed and probable cases of disease

2.0 Type of Surveillance

Case-by-case

3.0 Case Classification

3.1 Confirmed Case

Clinical evidence of invasive disease (see Section 5.0) with laboratory confirmation of infection with invasive disease:

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g. blood, cerebrospinal fluid [CSF], joint, pleural, or pericardial fluid)

  or

- Detection of *N. meningitidis* deoxyribonucleic acid (DNA) by a validated nucleic acid amplification test (NAAT) from a normally sterile site

3.2 Probable Case

Clinical evidence of invasive disease with purpura fulminans or petechiae and with no other apparent cause and with non-confirmatory laboratory evidence:

- Detection of *N. meningitidis* antigen in the CSF

4.0 Laboratory Evidence

4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of invasive meningococcal disease (IMD):

- Positive culture from a normally sterile site
- Positive NAAT for *N. meningitidis* from a normally sterile site

4.2 Approved/Validated Tests

- Standard culture
- NAAT for *N. meningitidis* (includes PCR)
- Consult with laboratory about appropriate tests and specimens

**Note:** Isolates should be sent to the Public Health Ontario Laboratories (PHOL) for serogroup determination and further characterization. Isolates are also submitted by the PHOL to the National Microbiology Laboratory (NML) for national surveillance.
4.3 Indications and Limitations

- Detection of *N. meningitidis* antigen does not allow determination of serogroup and is considered non-confirmatory laboratory evidence of disease.
- Positive antigen test results from urine and serum samples are unreliable for diagnosing meningococcal disease.
- Detection by NAAT from sterile sites, in addition to CSF and blood (e.g. joint, pleural, or pericardial fluid) may also be performed. PHOL should be contacted before these specimens are submitted (requires consultation by Medical or Clinical Microbiologist).
- NAAT allows for detection of *N. meningitidis* in clinical samples in which the organism may be nonviable by culture, e.g., in cases treated with antimicrobials prior to collection of specimen.
- Determination of serogroup from a sterile site isolate and further characterization by a reference laboratory are important in monitoring changes in disease epidemiology, including the impact of vaccination programs, potential serogroup replacement, and antibiotic resistance.

5.0 Clinical Evidence

Clinical illness associated with IMD usually manifests as meningitis, meningococcemia or both. Less common presentations are pneumonia with bacteremia, septic arthritis and pericarditis. Invasive disease may progress rapidly to purpura fulminans, shock and death.

6.0 ICD Code(s)

6.1 ICD-10 Code(s)
- A39 Meningococcal infection

6.2 ICD-9/ICD-9CM Code(s)
- 036 Meningococcal infection

7.0 Comments

N/A

8.0 Sources


9.0 Additional Resources

For further information about human diagnostic testing, contact the Public Health Ontario Laboratories or refer to the Public Health Ontario Laboratory Services webpage: http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/default.aspx

10.0 Document History

Table 1: History of Revisions

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Document Section</th>
<th>Description of Revisions</th>
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<tbody>
<tr>
<td>January 2014</td>
<td>General</td>
<td>New template.</td>
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<tr>
<td></td>
<td></td>
<td>Sections 9.0 Additional Resources and 10.0 Document History Added.</td>
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<td></td>
<td>3.1 Confirmed Case</td>
<td>First sentence changed from “Laboratory confirmation of infection with invasive disease (See Section 5.0):” to “Clinical evidence of invasive disease (see Section 5.0) with laboratory confirmation of infection with invasive disease:”</td>
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<td>3.2 Probable Case</td>
<td>Changed from “Invasive disease with purpura fulminans or petechiae in the absence of a positive blood culture and no apparent cause with demonstration of N. meningitides antigen in the CSF” to “Clinical evidence of invasive disease with purpura fulminans or petechiae and with no other apparent cause and with non-confirmatory laboratory evidence: Detection of N. meningitidis antigen in the CSF”</td>
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<td>4.1 Laboratory Confirmation</td>
<td>“from a normally sterile site” added to both bullets.</td>
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<td>4.2 Approved/ Validated Tests</td>
<td>“(includes PCR)” added to second bullet. Note added.</td>
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<td>4.3 Indications and Limitations</td>
<td>“and is considered non-confirmatory laboratory evidence of disease” added to</td>
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<td>Addition of third and fourth bullets.</td>
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<td>8.0 Sources</td>
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