Appendix B: Provincial Case Definitions for Diseases of Public Health Significance

Disease: *Haemophilus influenzae*, invasive

Effective: February 2019
Haemophilus influenzae, 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:

- Isolation of *Haemophilus influenzae* (H. influenzae) (serotypes a, b, c, d, e, f, undifferentiated and non-typeable isolates) from a normally sterile site

  OR

- Isolation of *H. influenzae* (serotypes a, b, c, d, e, f, undifferentiated and non-typeable isolates) from the epiglottis in a person with epiglottitis

  OR

- Detection of *H. influenzae* (serotypes a, b, c, d, e, f, undifferentiated and non-typeable isolates) deoxyribonucleic acid (DNA) in a normally sterile site* using a validated nucleic acid amplification test (NAAT)

3.2 Probable case
Clinical evidence of meningitis with laboratory evidence of infection:

- Demonstration of *H. influenzae* type b (Hib) antigen in cerebrospinal fluid

  OR

- Buccal cellulitis or epiglottitis in a child < 5 years of age with no other causative organisms isolated

* Examples of normally sterile body sites include blood, cerebrospinal fluid, joint fluid, pleural fluid, or pericardial fluid.
4.0 Laboratory Evidence

4.1 Laboratory Confirmation
Any of the following will constitute a confirmed case of invasive *H. influenzae* disease:

- Positive culture for *H. influenzae* obtained from a normally sterile site*;
- Positive culture for *H. influenzae* from the epiglottis in a person with epiglottitis;
- Positive NAAT result for *H. influenzae* DNA in a normally sterile site*.

4.2 Approved/Validated Tests

- Standard culture for *H. influenzae* with serotyping from a normally sterile site, or from the epiglottis in a person with epiglottitis.
- NAAT to detect *H. influenzae* DNA.
- Antigen detection for *H. influenzae* type b by latex agglutination.

Consult with laboratory about appropriate specimens for each testing methodology.

4.3 Indications and Limitations

- Regardless of laboratory test used, all invasive *H. influenzae* isolates should be serotyped.
- NAATs and antigen detection assays may be used when culture methods are unable to isolate the organism, such as when antibiotic treatment has been initiated before a clinical specimen is obtained for culture.
- False positive and false negative reactions have been demonstrated with direct antigen detection assays. It must also be noted that *H. influenzae* antigen testing is limited to detection of serotype b, therefore other serotypes, undifferentiated and non-typeable strains cannot be detected with this method. Persons who present with meningitis in whom Hib antigen is detected in cerebrospinal fluid, and in the absence of positive culture or NAAT results, should be reported as a probable case of *H. influenzae*. Additionally, because Hib antigen detection tests can be positive in urine and serum of persons without invasive Hib disease (e.g., post-vaccination), persons should not be reported as cases if antigen is detected exclusively in urine or serum specimens.
5.0 Clinical Evidence
Clinical evidence of invasive disease caused by *H. influenzae* includes any of the following:

- Meningitis
- Bacteremia
- Epiglottitis
- Pneumonia
- Pericarditis
- Septic arthritis
- Empyema

6.0 ICD Code(s)
Note: ICD codes do not differentiate between serotypes.

6.1 ICD-10 Code(s)
A41.3 Septicaemia due to *Haemophilus influenzae*
A49.2 *H. influenzae* infection, unspecified site
B96.3 *H. influenzae* as cause of disease classified elsewhere
G00.0 Meningitis due to *Haemophilus influenzae*
J05.1 Acute epiglottitis
J14 Pneumonia due to *Haemophilus influenzae*
P23.6 Congenital pneumonia due to *Haemophilus influenzae*

7.0 Sources


# 8.0 Document History

## Table 1: History of Revisions

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Document Section</th>
<th>Description of Revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2014</td>
<td>General</td>
<td>New template.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sections 9.0 Additional Resources and 10.0 Document History Added.</td>
</tr>
<tr>
<td></td>
<td>3.1 Confirmed Case</td>
<td>Addition of a note to clarify that only <em>H. influenzae</em> caused by serotype b is reportable.</td>
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<tr>
<td></td>
<td>3.2 Probable Case</td>
<td>First sentence changed from “Invasive disease with laboratory confirmation of infection (antigen detected):” to “Clinical evidence of invasive disease with laboratory evidence of infection:”</td>
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<tr>
<td></td>
<td>4.2 Approved/Validated Tests</td>
<td>The following was added to the second bullet point, Antigen detection for <em>H. influenzae</em> type b: “For persons treated with antimicrobial agents before specimens are obtained for culture, <em>H.influenzae</em> type b antigen detection may be used as an adjunct to culture.”</td>
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<tr>
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<td></td>
<td>Nucleic acid amplification test (NAT) for <em>H. influenzae</em> removed from list.</td>
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<tr>
<td></td>
<td>4.3 Indications and Limitations</td>
<td>The following bullet point was removed: “Further isolate characterization is indicated for epidemiological public health and control purposes.”</td>
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<tr>
<td></td>
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<td>The last three bullet points were added.</td>
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<tr>
<td></td>
<td>8.0 Sources</td>
<td>Updated.</td>
</tr>
<tr>
<td>May 2018</td>
<td>General</td>
<td>New template.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revisions were made to support the regulation change to Diseases of Public Health Significance, references were updated and Section 8.0 was deleted.</td>
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<tr>
<td></td>
<td></td>
<td>All serotypes of <em>H. influenza</em> are now reportable.</td>
</tr>
<tr>
<td>February 2019</td>
<td>General</td>
<td>Formatting changes and Section 7.0 Comments deleted.</td>
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</tbody>
</table>