

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

Disease: Plague

Effective: February 2019

Plague

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

Laboratory confirmation of infection with clinically compatible signs and symptoms:

- Isolation of *Yersinia pestis* (*Y. pestis*) from an appropriate clinical specimen (e.g., body fluids)
OR
- A significant (i.e., fourfold or greater) rise in serum antibody titre to *Y. pestis* fraction 1 (F1) antigen by enzyme immunoassay (EIA) or passive haemagglutination/inhibition titre

3.2 Probable Case

Clinically compatible signs and symptoms with one of the following laboratory results:

- Demonstration of elevated serum antibody titre(s) to *Y. pestis* F1 antigen (without documented significant [i.e., fourfold or greater] rise) in a patient with no history of plague immunization
OR
- Demonstration of *Y. pestis* F1 antigen by immunofluorescence
OR
- >1:10 passive haemagglutination/inhibition titre in a single serum sample in a patient with no history of vaccination or previous infection
OR
- Detection of *Y. pestis* antibody by EIA
OR
- Detection of *Y. pestis* nucleic acid

4.0 Laboratory Evidence

4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of plague:

- Positive *Y. pestis* culture with confirmation (See Section 4.2)
- A significant (i.e., fourfold or greater) rise in *Y. pestis* antibody titre

4.2 Approved/Validated Tests

- Standard culture for *Y. pestis* with biochemical confirmation
- *Y. pestis* serology
- Nucleic acid amplification test (NAAT) for *Y. pestis*
- Direct fluorescent antibody (DFA) for *Y. pestis* F1 antigen
- Confirmatory methods include combinations of the following methods: specific bacteriophage lysis, DFA for F1 antigen, NAAT, haemagglutination/inhibition titres, EIA for *Y. pestis* antibody
- Detection of *Y. pestis* nucleic acid

4.3 Indications and Limitations

Not applicable

5.0 Clinical Evidence

Clinically compatible signs and symptoms are characterized by fever, chills, headache, malaise, prostration, and leukocytosis that are manifested in one or more of the following principal clinical forms:

- Regional lymphadenitis (bubonic plague)
- Septicemia without an evident bubo (septicemic plague)
- Plague pneumonia, resulting from haematogenous spread in bubonic or septicemic cases (secondary pneumonic plague) or inhalation of infectious droplets (primary pneumonic plague)
- Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague)

6.0 ICD 10 Code(s)

A20 Plague

7.0 Sources

Acha P, Szyfres B. Zoonoses and Communicable Diseases Common to Man and Animals. Vol. 1. 3 ed. Washington, DC: Pan American Health Organization; 2001.

Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System: Plague (*Yersinia pestis*) - 1996 Case Definition [Internet]. Atlanta, GA: U.S. Department of Health & Human Services; 1996 [cited June 26, 2014]. Available from: <https://wwwn.cdc.gov/nndss/conditions/plague/case-definition/1996/>

Heymann DL, editor. Control of Communicable Diseases Manual. 20 ed. Washington, D.C: American Public Health Association; 2015.

Public Health Agency of Canada. Plague. In: Case Definitions for Communicable Diseases under National Surveillance. Canada Communicable Disease Report. 2009;35S2.

8.0 Document History

Table 1: History of Revisions

| Revision Date | Document Section | Description of Revisions |
|---------------|------------------------------|--|
| December 2014 | General | New template. Title of Section 8.0 changed from “References” to “Sources”. Section 9.0 Document History added. |
| December 2014 | 3.2 Probable Case | Order of bullets rearranged: third bullet moved to last bullet. |
| December 2014 | 4.1 Laboratory Confirmation | “Plague” changed to lower case “plague”. |
| December 2014 | 4.2 Approved/Validated Tests | “(NAT)” changed to “(NAAT)”. Addition of “Detection of <i>Y.pestis</i> nucleic acid”. |
| December 2014 | 8.0 Sources | Updated. |
| February 2019 | General | Minor revisions were made to support the regulation change to Diseases of Public Health Significance. |

