

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

**Disease: Rabies**

Effective: February 2019

# Rabies

## 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:

- Detection of viral antigen in an appropriate clinical specimen, preferably the brain or the nerves surrounding hair follicles in the nape of the neck, by immunofluorescence

**OR**

- Isolation of rabies virus from saliva, cerebrospinal fluid (CSF), or central nervous system tissue using cell culture or laboratory animal

**OR**

- Detection of rabies virus ribonucleic acid (RNA) in an appropriate clinical specimen (e.g., saliva)

### 3.2 Probable Case

Clinically compatible signs and symptoms with the following laboratory results:

- Demonstration of rabies-neutralizing antibody titre  $\geq 0.5$  IU/mL (i.e., complete neutralization) in the serum or CSF of an unvaccinated person

## 4.0 Laboratory Evidence

### 4.1 Laboratory Confirmation

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

- Positive for rabies antigen
- Positive rabies virus culture
- Positive nucleic acid amplification test (NAAT) for rabies virus

## 4.2 Approved/Validated Tests

- Immunofluorescence test for rabies virus antigen
- Standard culture for rabies virus
- NAAT for rabies virus RNA
- Rabies virus neutralization test

## 4.3 Indications and Limitations

- Negative results do not rule out rabies infection because viral material may not be detectable (e.g., early in infection). CSF frequently remains negative.
- The presence of rabies virus-neutralizing antibodies can indicate an exposure to rabies virus antigen or passive immunization.
- Negative serological results do not rule out a rabies infection because antibody levels may not surpass the detection threshold (0.5 IU/mL) and seroconversion may occur very late during the course of infection.
- The sensitivity and specificity of serological tests may vary from laboratory to laboratory in spite of the application of international standards.
- Immunofluorescence test on unfixed brain tissue is the only recommended test for post-mortem diagnosis.

## 5.0 Clinical Evidence

Clinically compatible signs and symptoms begin with a feeling of anxiety, cephalalgia, slightly elevated body temperature, malaise and indefinite sensory alterations, frequently around the site of the lesion. The excitation phase that follows is characterized by hyperesthesia, dilation of pupils and increased salivation. As the disease progresses swallowing dysfunction is seen in most patients and there may be spasms of the respiratory muscles and generalized convulsions. Rabies is an acute encephalomyelitis that almost always progresses to coma or death within 10 days after the first symptom.

## 6.0 ICD 10 Code(s)

A82 Rabies

## 7.0 Sources

Acha P, Szyfres B. Zoonoses and Communicable Diseases Common to Man and Animals. Vol. 2. 3 ed. Washington, DC: Pan American Health Organization; 2003.

Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System: Rabies, Human - 2011 Case Definition [Internet]. Atlanta, GA: U.S. Department of Health & Human Services; 2011 [cited February 23, 2018]. Available from: <https://www.cdc.gov/nndss/conditions/rabies-human/case-definition/2011/>

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

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

## 8.0 Document History

**Table 1: History of Revisions**

<b>Revision Date</b>	<b>Document Section</b>	<b>Description of Revisions</b>
February 2019	General	Minor revisions were made to support the regulation change to Diseases of Public Health Significance.

