

# Appendix B: Provincial Case Definitions for Reportable Diseases

Disease: Poliomyelitis, acute

Revised December 2014

# Poliomyelitis, acute

## 1.0 Provincial Reporting

Confirmed cases of disease

## 2.0 Type of Surveillance

Case-by-case

## 3.0 Case Classification

### 3.1 Confirmed Case – Paralytic poliomyelitis

Clinical illness (see section 5.0) with laboratory confirmation of infection:

- Isolation of polio virus (vaccine or wild type) from an appropriate clinical specimen (e.g., stool, throat, cerebrospinal fluid [CSF])

**OR**

- Detection of polio virus ribonucleic acid (RNA) by nucleic acid amplification test (NAAT)

**OR**

Clinical illness in a person who is epidemiologically linked to a laboratory-confirmed case

### 3.2 Confirmed Case – Non-Paralytic poliomyelitis

Any person **without symptoms of paralytic poliomyelitis**, with laboratory confirmation of infection:

- Isolation of polio virus (vaccine\* or wild type) from an appropriate clinical specimen (e.g., stool, throat, CSF)

**OR**

- Detection of polio virus ribonucleic acid (RNA) by nucleic acid amplification test (NAAT)

\*except where there has been vaccination with oral polio virus (OPV) in the 30 days prior to the date of specimen collection.

## 4.0 Laboratory Evidence

### 4.1 Laboratory Confirmation

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

- Isolation of polio virus (vaccine or wild type) from an appropriate clinical specimen
  - Stool samples: Collection of two stool samples within two weeks (up to six weeks) after the onset of paralysis for viral studies

- Viral throat swab
- CSF
- Detection of polio virus-specific RNA by NAAT in an appropriate clinical specimen.

**Note:** Serology testing is not recommended for diagnosis of polio or non-polio enterovirus infection.

## 4.2 Approved/Validated Tests

- Standard culture for poliovirus
- NAAT for poliovirus/enterovirus RNA
- Consult with laboratory about testing issues and appropriate specimens. Further testing information is available at:  
[http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Polio\\_virus.aspx#.VE7NxiLF8k0](http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Polio_virus.aspx#.VE7NxiLF8k0)
- [http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Polio\\_virus\\_CSF.aspx#.VE7OCSLF8k0](http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Polio_virus_CSF.aspx#.VE7OCSLF8k0)

**Note:** For any suspected cases of polio, contact the Medical Microbiologist at Public Health Ontario Laboratories (PHOL).

Further virus characterization is indicated for epidemiological public health and control purposes. Polio virus strain typing is done using sequencing methodologies (molecular serotyping) at the National Microbiology Laboratory (NML).

## 4.3 Indications and Limitations

- The commercially available NAAT does not differentiate polioviruses from other non-polio enteroviruses

## 5.0 Clinical Evidence of Paralytic poliomyelitis

Clinical illness is characterized by all of the following:

- Acute flaccid paralysis of one or more limbs
- Decreased or absent deep tendon reflexes on the affected limb(s)
- No sensory or cognitive loss
- Neurologic deficit present 60 days after onset of initial symptoms, unless the patient has died
- No other apparent cause (including laboratory investigation to rule out other causes of a similar syndrome)

## 6.0 ICD Code(s)

### 6.1 ICD-10 Code(s)

A80 Acute Poliomyelitis

## 6.2 ICD-9/ICD-9CM Code(s)

045 Acute Poliomyelitis

## 7.0 Comments

- Detection and investigation of **all** acute flaccid paralysis (AFP) cases is necessary to rule out poliovirus infection. AFP surveillance is used to monitor Canada's polio-free status. For further information, refer to the Disease-Specific Chapter for AFP: [http://www.health.gov.on.ca/en/pro/programs/publichealth/oph\\_standards/docs/afp\\_chapter.pdf](http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/afp_chapter.pdf)
- Stool specimens and throat swabs are preferred specimens. Other specimens include CSF and bronchoalveolar lavage (BAL)
- Two stool specimens and a throat swab should be submitted from all cases of AFP to allow appropriate testing for poliomyelitis
- For immunocompromised individuals, a negative test does not rule out infection as poliovirus may be excreted intermittently
- Asymptomatic shedding of the poliovirus in the stool may occur for several weeks after receipt of oral polio vaccine (OPV). While this vaccine is not available in Canada, it is still used elsewhere in the world, therefore immunization history and travel history should be collected.
- Serology testing is not recommended for diagnosis of polio or non-polio enterovirus infection.

**Confirmed cases of poliomyelitis can be further subdivided into the following two categories, based on laboratory findings:**

### a) **Wild virus**

Laboratory investigation implicates wild-type virus. This group is further subdivided as follows:

- Imported: travel in or residence in a polio-endemic area 30 days or less before onset of symptoms
- Import-related: epidemiologic link to someone who has travelled in or resided in a polio-endemic area within 30 days of onset of symptoms
- Indigenous: no travel or contact as described above. Please note there have been no indigenous cases of poliomyelitis in Canada since 1977.

### b) **Vaccine-associated virus**

Laboratory investigation implicates vaccine-type virus. This group is further subdivided as follows:

- Recipient: the illness began after the patient received OPV
- Contact: the patient was shown to have been in contact with an OPV-recipient and became ill seven to 60 days after the contact was immunized
- Possible contact: the patient had no known direct contact with an OPV-recipient and no history of receiving OPV, but the paralysis occurred in an area in which a

mass vaccination campaign using OPV had been in progress seven to 60 days before the onset of paralysis

- No known contact: the patient had no known contact with an OPV-recipient and no history of receiving OPV, and the paralysis occurred in an area where no routine or intensive OPV immunization had been in progress. In Canada, only IPV is available in all provinces and territories

## 8.0 Sources

American Academy of Pediatrics. Section 3: summaries of infectious diseases: poliovirus infections. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, editors. Red book: 2012 report of the Committee on Infectious Diseases. 29<sup>th</sup> ed. Elk Grove Village, IL: American Academy of Pediatrics; 2012: 589-92.

Public Health Agency of Canada. Poliomyelitis. In: Case definitions for communicable diseases under national surveillance. Can Commun Dis Rep. 2009;35S2:58-61. Available from: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/Polio-eng.php>

Public Health Ontario [Internet]. Toronto, ON: Ontario Agency for Health Protection and Promotion; c2014. Laboratory services: test directory index; 2014 [cited Jun 23 2014]. Available from:

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Wallace, GS, Oberste, MS. Chapter 12: Poliomyelitis. In: Roush SW, McIntyre L, Baldy LM, editors. Manual for the surveillance of vaccine-preventable diseases. 5<sup>th</sup> ed. Atlanta, GA: National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention; 2012. Available from:

<http://www.cdc.gov/vaccines/pubs/surv-manual/chpt12-polio.html>

## 9.0 Document History

**Table 1: History of Revisions**

Revision Date	Document Section	Description of Revisions
December 2014	General	<p>New template.</p> <p>Acronym “NAT” changed to “NAAT” throughout document.</p> <p>Title of Section 3.1, addition of “Paralytic poliomyelitis”.</p> <p>Deletion of Probable Case definition.</p> <p>Title of Section 8.0 changed from “References” to “Sources”.</p>

<b>Revision Date</b>	<b>Document Section</b>	<b>Description of Revisions</b>
		Section 9.0 Document History added.
December 2014	3.1 Confirmed Case – Paralytic poliomyelitis	<p>First paragraph changed from “Clinically compatible signs and symptoms of paralytic polio with no other apparent cause and with travel to a polio endemic region” to “Clinical illness (see section 5.0) with laboratory confirmation of infection”.</p> <p>Removed “AND” after first paragraph.</p> <p>First bullet changed from “Isolation of vaccine or wild type of poliovirus from an appropriate clinical specimen...” to “Isolation of polio virus (vaccine or wild type) from an appropriate clinical specimen...”</p> <p>First bullet, addition of “throat” as an example of a clinical specimen and removal of “pharyngeal swab”.</p> <p>Last sentence changed from “Clinically compatible signs and symptoms in a person with an epidemiologic link to a laboratory-confirmed case” to “Clinical illness in a person who is epidemiologically linked to a laboratory-confirmed case”.</p>
December 2014	3.2 Confirmed Case – Non-Paralytic poliomyelitis	Section added.
December 2014	4.1 Laboratory Confirmation	<p>Section updated to include the list of appropriate clinical specimens.</p> <p>Second bullet changed from “Positive for polio virus-specific RNA by NAT” to “Detection of polio-virus specific RNA by NAAT in an appropriate clinical specimen.”</p> <p>Addition of the following: “Note: Serology testing is not recommended for diagnosis of polio or non-polio enterovirus infection.”</p>
December 2014	4.2 Approved/Validated	Link to access further testing information

<b>Revision Date</b>	<b>Document Section</b>	<b>Description of Revisions</b>
	Tests	<p>provided in the third bullet.</p> <p>Addition of a note under the bullets  “Note: For any suspected cases of polio, contact the Medical Microbiologist at Public Health Ontario Laboratories (PHOL).</p> <p>Further virus characterization is indicated for epidemiological public health and control purposes. Polio virus strain typing is done using sequencing methodologies (molecular serotyping) at the National Microbiology Laboratory (NML).”</p>
December 2014	4.3 Indications and Limitations	<p>Inclusion of the word “non-polio” before “enteroviruses.”</p> <p>Second bullet removed.</p>
December 2014	5.0 Clinical Evidence of Paralytic poliomyelitis	<p>Section heading updated to include “of Paralytic poliomyelitis”.</p> <p>First sentence changed from “Clinically compatible signs and symptoms are...” to “Clinical illness is...”</p> <p>Addition of fifth bullet “No other apparent cause (including laboratory investigation to rule out other causes of a similar syndrome)”.</p>
December 2014	6.1 ICD-10 Codes(s)	<p>Changed from “G05.2, G04.1, T50.9, Y59.0, A80.3 Poliomyelitis” to “A80 Acute Poliomyelitis”.</p>
December 2014	6.2 ICD-9/ICD-9CM Code(s)	<p>Changed from “323.2, 323.5, 979.5, E949.5 (polio vaccine poisoning), 045.1 (acute polio with other paralysis) Poliomyelitis to “045 Acute Poliomyelitis”.</p>
December 2014	7.0 Comments	<p>Section revised.</p>
December 2014	8.0 Sources	<p>Updated.</p>

