

POLIOMYELITIS (PARALYTIC)

Case definition

CONFIRMED CASE

Clinical illness with laboratory confirmation of infection:

- isolation of polio virus (vaccine or wild-type) from an appropriate clinical specimen

OR

- detection of polio virus RNA

OR

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

Confirmed case categories:

Confirmed cases of poliomyelitis can be further subdivided into the following two categories:

1. *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.

2. *Vaccine-associated virus*

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

- *Recipient*: the illness began 7-30 days after the patient received oral polio vaccine [OPV].
- *Contact*: the patient was shown to have been in contact with an OPV-recipient and became ill 7-60 days after the contact was vaccinated
- *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 7-60 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 vaccination had been in progress. In Canada, this would include all provinces and territories.

PROBABLE CASE

Clinical illness without detection of polio virus from an appropriate clinical specimen and without evidence of infection with other neurotropic viruses but with one of the following laboratory confirmations of infection:

- significant rise [i.e. fourfold or greater] in polio IgG titre, by any standard serologic assay, between acute and convalescent sera

OR

- positive serologic test for polio IgM antibody in the absence of recent immunization with polio virus-containing vaccine

SUSPECT CASE

Clinical illness and no laboratory confirmation of infection [no polio virus detection or serologic evidence], including negative test results and inadequate or no investigation.

Causative agent

Poliovirus, of the genus *Enterovirus*. It is subdivided into three types; Types 1, 2 and 3. All types can cause paralysis, though Type 1 is most often associated with poliomyelitis.

Source

Humans

Incubation

Can range from 3 to 35 days, but usually 7-14 days.

Transmission

Fecal-oral route where sanitation is poor, or secretions of the nose and throat [respiratory route].

Communicability

Transmission is possible as long as the virus is excreted. Communicability is greatest just before to just after the onset of symptoms.

Symptoms

Severity of symptoms may vary. Fever, malaise, headache, nausea and vomiting may appear in the early stages of the disease or in a “minor case”. If the disease progresses, severe muscle pain and stiffness of the neck and back, with or without flaccid paralysis, may be present. Often a limb is paralysed, but usually only one side is affected. The area of nerve cell destruction will affect the degree and site of paralysis. Paralysis of the muscles used in respiration and swallowing may threaten life.

Diagnostic testing

- Stool, tissue, cerebral spinal fluid for polymerase chain reaction (PCR)
- Throat washing, swab for PCR

Treatment

Supportive. Attention to respiratory needs of those with severe illness.

PUBLIC HEALTH MANAGEMENT & RESPONSE

A diagnosis of polio would be an unusual event and would require **immediate** action.

Case management

Initiate case follow-up immediately.

Contacting and educating the individual and family

- Interview client and family to identify source:
 - Explore if travel has taken place.
 - Explore if there have been visitors from other countries.
 - Explore if client had received any immunizations.
- Enteric precautions for the case in hospital.
- Educate family on transmission.

If case is in an institution

- If there is a case in long-term care the individual should be placed on enteric precautions in a private room.

If case is in a child care setting or school

- The individual with polio would be excluded and an investigation by public health would be done to identify additional cases and contacts of the case. All close contacts would have vaccine status reviewed and updated if necessary.

Exclusion

- Individuals with polio should be excluded from school, work, child care, etc.
- No exclusions for contacts unless there are symptoms.

Education

- All infants should be immunized according to the N.S. immunization schedule.
- Individuals travelling to countries where poliomyelitis is prevalent should be immunized.

Contact tracing

- All household members should be considered at risk. Household contacts can be infected before poliomyelitis has been diagnosed.
- Explore the type of contact, whether the individuals have been immunized and whether any contacts have symptoms.
- Immunize family and other close contacts. This may be too late to contribute to the control.
- Thoroughly search for additional cases.

Prophylaxis

None. Monitor anyone who has been a contact of the infected individual for early signs of disease.

Surveillance forms

novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS_Notifiable_Disease_Surveillance_Case_Report_Form.pdf

novascotia.ca/dhw/populationhealth/surveillanceguidelines/Vaccine_Preventable_Case_Report_Form.pdf

General Information Sheet

REFERENCES

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Control of Communicable Diseases Manual, 17th edition. 2000. James Chin, editor. American Public Health Association.

Poliomyelitis: who.int/inf-fs/en/fact114.html

cdha.nshealth.ca/pathology-laboratory-medicine

[*Provincial Microbiology Users Manual*](#)