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# Poliomyelitis, Acute

**REPORTABLE DISEASES TOOLKIT**

*Information for Health Care Professionals*

## Reporting Obligations

Acute Poliomyelitis is designated as a disease of public health significance and is reportable under the Ontario Health Protection and Promotion Act. Report all suspect and confirmed cases within **one business day** to the health unit.

REPORTING FORM

## Epidemiology

### Aetiologic Agent:

Poliomyelitis is caused by the poliovirus, a member of the genus Enterovirus. There are three types: poliovirus type 1, 2, and 3, and they can all cause paralysis. The majority of polio infections (90% to 95%) do not have any symptoms. Infection can also occur rarely as a result of vaccine-associated paralytic poliomyelitis (VAPP) following immunization with the oral polio vaccine (OPV). OPV is a vaccine not used in Canada but in use in some parts of the world, that contains live attenuated virus.

### Clinical Presentation:

Most polio infections (90% to 95%) are asymptomatic. Symptomatic polio is most often recognized by the acute onset of flaccid paralysis. Symptoms of minor illness include fever, headache, malaise, nausea and vomiting and can progress to major disease distinguished by severe muscle pain and stiffness of the neck and back with or without flaccid paralysis.

Paralysis is most often asymmetric and accompanied by fever; the maximum extent of paralysis is reached in 3 to 4 days. Paralysis may improve during the convalescent period; however, paralysis that persists beyond 60 days is likely permanent. Paralysis of the respiratory or swallowing muscles can be life-threatening. The case-fatality ratio for paralytic polio is 2% to 5% in children and 15% to 30% for adults.

### Modes of transmission:

Polio is transmitted person to person, predominantly through the fecal-oral and rarely via respiratory route. Rarely, through milk and foodstuff contaminated with stool.

### Incubation Period:

Commonly 7-14 days for paralytic cases; there has been a reported range of 3 to possibly 35 days.

### Period of Communicability:

Communicable for as long as the virus is shed in the throat and/or the stool; cases are most infectious in the days before and after onset of symptoms. Virus usually persists in the throat for 1 week and in stool for 3-6 weeks. Poliovirus is shed in throat secretions as early as 36 hours to 7 days and in the stool 72 hours to six weeks after exposure to infection. Persons who receive OPV can have poliovirus present in the throat for 1 to 2 weeks and excreted in stool for several weeks following immunization.

## Risk Factors/Susceptibility

Susceptibility is universal in those not immunized. Infants born to immune mothers have transient passive immunity. Unvaccinated contacts of those immunized with OPV are at increased risk of VAPP and may also benefit from bystander immunity. Type-specific immunity is felt to be life-long for both clinically recognizable and inapparent infections.

Polio is endemic in three countries, Afghanistan, Nigeria, and Pakistan. Canada was certified polio-free in 1994. The last indigenous case of wild poliovirus detected in Canada was in 1977.

## Diagnosis & Laboratory Testing

Any of the following tests will constitute a confirmed case of poliomyelitis: 1) Isolation of polio virus (vaccine or wild type) from an appropriate clinical specimen, i.e., 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 or 2) 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.

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.

TESTING INFORMATION & REQUISITION

## Treatment & Case Management

Polio primarily affects infants and young children in the three countries where the disease remains endemic, with 80% to 90% of cases occurring in those less than 3 years of age. No specific treatment is available; however, attention should be given during acute illness to complications of paralysis.

Immunize as per the current Publicly Funded Immunization Schedules for Ontario, June 2022. Inactivated polio virus (IPV)-containing vaccines produce immunity to all three types of poliovirus in over 95% of vaccinees following three doses of vaccine, and in close to 100% following a booster dose.

Exclude cases that are food handlers until proof of immunity is demonstrated or negative stool sample is obtained. For hospitalized cases, contact precautions are indicated.

Contacts should be assessed for immunization status and if not fully immunized receive updated doses.

Public Health staff will be involved in case and contact investigations.

## Patient Information

PATIENT FACT SHEET

## References


1. Heymann, D.L. Control of Communicable Disease Manual (21st Ed.). Washington, American Public Health Association, 2022.
2. Ministry of Health, Infectious Diseases Protocol - Ontario Public Health Standards, 2022.


## Additional Resources

1. PHAC. "Canadian Immunization Guide, Poliomyelitis Vaccine."
2. Public Health Agency of Canada. "Vaccine Preventable Diseases- Poliomyelitis (Polio)."
3. CDC. "Polio Vaccine Information Statement."
4. WHO. "Poliomyelitis.
5. PHO. "Poliomyelitis (Polio) and Acute Flaccid Paralysis", Dec 2022.