

Appendix A: Disease-Specific Chapters

Chapter: Poliomyelitis, acute

Poliomyelitis, acute

- Communicable
 Virulent

**Health Protection and Promotion Act:
Ontario Regulation 558/91 – Specification of Communicable Diseases**

**Health Protection and Promotion Act:
Ontario Regulation 559/91 – Specification of Reportable Disease**

1) 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 (1).
2) Case Definition:	
Surveillance Case Definition	See Appendix B
Outbreak Case Definition	<p>The outbreak case definition varies with the outbreak under investigation. Consideration should be given to the following in establishing an outbreak case definition:</p> <ol style="list-style-type: none">1. Clinical, laboratory and/or epidemiological criteria;2. A time frame for occurrence;3. A geographic location(s) or place(s) where cases live or became ill/exposed, and4. Special attributes of cases (e.g. age, underlying conditions). <p>Cases should also be classified by levels of probability (i.e. confirmed, probable or suspect).</p>
3) Identification:	
Clinical Presentation:	<p>Acute viral illness, severity ranging from sub clinical infection to paralytic disease. Over 90% of cases are asymptomatic or may have only fever. Symptoms of minor illness include fever, headache, malaise, nausea and vomiting. If disease progresses to major illness, there may be severe muscle pain and stiffness of the neck and back with flaccid paralysis (1).</p> <p>The most characteristic feature of polio paralysis is its asymmetric distribution, which affects some muscle groups while sparing others.</p>
Diagnosis	See Appendix B

4) Epidemiology:

Occurrence	Cases of wild type poliovirus and vaccine associated illness still occur in parts of Asia and Africa (1). In Canada, the most recent paralytic wild type case occurred in 1988 as a result of an imported strain from Pakistan. The most recent documentation of wild type polio occurred in 1996 in a child who had travelled to India. Canada was certified polio-free in 1994, and Ontario has had no cases of paralytic polio since that time.
Reservoir	Humans, most frequently in-apparent cases, especially children (1).
Modes of Transmission	Polio is transmitted through the fecal-oral route or respiratory route (2).
Incubation Period	Commonly 7-14 days for paralytic cases; there has been a reported range of 3 to possibly 35 days (1).
Period of Communicability	<p>Not precisely defined, however it is communicable for as long as the virus is shed in the throat and the stool; the virus can be most infective 7-10 days before and after onset of symptoms (1).</p> <p>Poliovirus is shed in throat secretions as early as 36 hours to 12 days after exposure and in the stool 72 hours to six weeks after exposure. Cases are most infectious during the days before and after onset of symptoms (1).</p>
Susceptibility and Resistance	Susceptibility is universal in those not immunized (1).

5) Reporting Requirements:

To Local Board of Health	Confirmed and suspected cases shall be reported immediately to the medical officer of health by persons required to do so under the <i>Health Protection and Promotion Act, R.S.O. 1990</i> .
To Public Health Division (PHD)	<p>The board of health shall notify the PHD of the MOHLTC immediately by phone upon receiving report.</p> <p>Report only case classifications specified in the case definition to PHD.</p> <p>Cases shall be reported using the integrated Public Health Information System (iPHIS), or any other method specified by the Ministry within (1) one business day of receipt of initial notification as per <i>iPHIS Bulletin Number 17: Timely Entry of Cases</i> (5).</p> <p>The minimum data elements to be reported for each case is specified in the following:</p> <ul style="list-style-type: none"> • <i>Ontario Regulation 569</i> (Reports) under the HPPA; • The disease-specific User Guides published by the Ministry, and • Bulletins and directives issued by the Ministry.

6) Prevention and Control Measures:

Personal Prevention Measures	Primary immunization with inactivated poliovirus vaccine, as per the <i>Canadian Immunization Guide</i> (3) and the publicly funded immunization schedules for Ontario (4), is the mainstay for prevention of poliovirus infection.
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Infection Prevention and Control Strategies	<p>Strategies:</p> <ul style="list-style-type: none"> • For hospitalized cases, in addition to routine practices, contact precautions are indicated, especially for infants and young children for the duration of hospitalization, • Contact precautions are recommended, especially when handling throat discharges, feces, and contaminated articles, including proper hand hygiene (2).
Management of Cases	<p>Investigate the case to determine the source of infection. Refer to Regulation 569 under the HPPA for relevant data to collect including the following:</p> <ul style="list-style-type: none"> • Symptoms, and date of symptom onset; • Assess polio immunization status (total number of doses of oral and/or inactivated polio vaccine received); • Obtain relevant medical history including immunocompromised status or abnormal neurological history; • In cases of wild-virus disease, assess for travel to or residing in another country within 30 days prior to the onset of this illness, and household member or other close contacts who have traveled to or resided in another country within 30 days prior to the onset of the child's illness; • In cases of vaccine-associated disease, assess for: receipt of oral polio vaccine (OPV) seven to 30 days prior to the onset of current illness, recent (seven to 60 days) presence in an area where a mass immunization campaign had been in progress, and household members or other close contacts who have received OPV seven to 60 days prior to the onset of this child's illness; • Occupation, and • Identification of contacts for follow-up (see below). <p>Exclude cases that are food handlers until proof of immunity is demonstrated or negative stool sample is obtained. No specific treatment is available, however attention should be given during acute illness to complications of paralysis (1).</p>
Management of Contacts	<p>Contacts are:</p> <ul style="list-style-type: none"> • Persons living in the same household or having close contact with the case (e.g., sharing sleeping arrangements or playing together for \geq four hours) within 30 days before the case's onset of illness; • Children attending the same daycare as the case, and • Persons having contact with stool or fecal matter of the case within 30 days before the case's onset of illness, without using infection control precautions. <p>Even though contacts may already be infected, they should be assessed for immunization status and if not fully immunized receive updated doses (1). Consider exclusion of contacts from food handling until proof of immunity is provided. Quarantine measures have not been found to be of value in the community (1).</p>
Management of Outbreaks	<p>A single confirmed case of acute poliomyelitis constitutes an outbreak. Provide public health management of outbreaks or clusters in order to identify the source of illness, stop the outbreak and limit secondary spread.</p>

	<p>For outbreak in a school, susceptible students can be excluded under Section 12 of the <i>Immunization of School Pupils Act</i>.</p> <p>As per this protocol, outbreak management shall comprise of but not be limited to the following general steps:</p> <ul style="list-style-type: none"> • Confirm diagnosis and verify the outbreak; • Establish an outbreak team; • Develop an outbreak case definition; • Implement prevention and control measures; • Implement and tailor communication and notification plans depending on the scope of the outbreak; • Conduct epidemiological analysis on data collected; • Conduct environmental inspections of implicated premise where applicable; • Coordinate and collect appropriate clinical specimens where applicable; • Prepare a written report, and • Declare the outbreak over in collaboration with the outbreak team.
<p>7) References</p>	<p>(1) Heymann D, editor. Control of communicable diseases manual. 18th ed. Washington: American Public Health Association; 2004.</p> <p>(2) Pickering LK, Baker CJ, Long SS, McMillan JA, editors. Red book: 2006 report of the Committee on Infectious Diseases. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006. Section 3, Summaries of infectious diseases; p. 542-7.</p> <p>(3) National Advisory Committee on Immunization. Canadian immunization guide. 7th ed. Ottawa: Public Health Agency of Canada; 2006. Available from: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php.</p> <p>(4) Ministry of Health and Long-Term Care. Publicly funded immunization schedules for Ontario: January 2009. Toronto: Queen's Printer for Ontario; 2008. Available from http://www.health.gov.on.ca/english/providers/program/immun/pdf/schedule.pdf.</p> <p>(5) Ministry of Health and Long-Term Care. Timely entry of cases. iPHIS Bulletin. 2007 May 11;17.</p>
<p>8) Additional Resources</p>	<p>Steering Committee on Infection Control Guidelines. Prevention and control of occupational infections in health care. An infection control guideline. Can Commun Dis Rep. 2002 Mar;28 Suppl 1:1-264. Available from http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02pdf/28s1e.pdf.</p> <p><i>Health Protection and Promotion Act</i>, R.S.O. 1990, c. H.7. Available from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm.</p> <p>Ministry of Health and Long-Term Care. Infectious diseases protocol. Toronto: Queen's Printer for Ontario; 2009. Available from http://www.health.gov.on.ca/english/providers/program/pubhealth/oph_standards/oph/infdispro.html (or as current)</p>

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