Ministry of Health and Long-Term Care

Infectious Diseases Protocol

Appendix A: Disease-Specific Chapters

Chapter: Acute Flaccid Paralysis (AFP)

Effective: February 2019

Ontario

Acute Flaccid Paralysis (AFP)

☐ Communicable

☐ Virulent

Health Protection and Promotion Act:
O. Reg. 135/18 (Designation of Diseases)

1.0 Aetiologic Agent

AFP is a clinical syndrome, typically characterized by rapid onset weakness, which may include respiratory and bulbar weakness. AFP is a broad clinical syndrome with an array of diagnostic possibilities, and may be the result of infectious or non-infectious agents. Surveillance is conducted in an attempt to identify cases of AFP and to investigate all reported cases for evidence to rule out poliomyelitis (polio), which is essential for maintaining Canada's polio-free status.[1]

AFP may be caused by a number of agents. The immune-mediated condition Guillain-Barré Syndrome (GBS) is the most common cause of AFP in Canada.[2] The causes of AFP, some of which lead to GBS, include, but are not limited to, enteroviruses (including poliovirus[*]), echoviruses, adenoviruses, acute West Nile virus infection, *Campylobacter* spp., transverse myelitis, peripheral neuropathy, acute non-bacterial meningitis, brain abscess, China syndrome, post-polio sequelae, tick paralysis, myasthenia gravis, porphyria and botulism.[1-3]

2.0 Case Definition

2.1 Surveillance Case Definition

Refer to Appendix B for Case Definitions.

2.2 Outbreak Case Definition

Not applicable.

If polio is identified as the causative agent of AFP, refer to the Disease-Specific Chapter for acute Poliomyelitis. As elimination of indigenous wild poliovirus transmission was certified in Canada in September 1994,[4] a single case of polio represents an outbreak and a public health emergency.

[*] Poliomyelitis must be distinguished from other paralytic conditions by isolation of poliovirus from stool.

3.0 Identification

3.1 Clinical Presentation

Acute onset of focal weakness or paralysis, characterized as flaccid without other obvious causes (e.g., trauma), in children less than 15 years old.[1,2]

The most characteristic feature of AFP associated with paralytic polio is its asymmetric distribution (not affecting both sides equally), which affects some muscle groups while sparing others, with fever present at onset. The most typical pattern is involvement of one leg only, or one arm, although this occurs less often. It is less common for both legs or both arms to be affected.[3]

AFP due to GBS may present as symmetrical paralysis and may progress for up to 10 days.[3]

3.2 Diagnosis

Laboratory testing (of stool, respiratory secretions, cerebrospinal fluid (CSF) and other appropriate clinical specimens) is used to rule out poliomyelitis and/or determine pathogens causing AFP.

See Appendix B for diagnostic criteria relevant to the Case Definitions.

For further information about human diagnostic testing, contact the Public Health Ontario Laboratories or refer to the Public Health Ontario Laboratory Services webpage: http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/default.aspx

4.0 Epidemiology

4.1 Occurrence

Polio is targeted for eradication. As such, it requires highly sensitive surveillance for AFP, including immediate case investigation and specimen collection. Documenting polio-specific investigations, regardless of suspected diagnosis, is the means by which Canada maintains its polio-free certification. In addition, global surveillance indicators for certification include the detection of at least one AFP case in every 100,000 children under 15 years of age.

Syndromic surveillance in Canada and Ontario on AFP is currently done by:

- Enhanced, active case-by-case notification by the Canadian Paediatric Surveillance Program (CPSP); and
- Enhanced, active case-by-case notification by paediatric tertiary care hospitals involved in the Immunization Monitoring Program, Active (IMPACT).[4]

Between 2013 and 2017, no cases of AFP have been reported in Ontario.[†]

In 2016, there were 39 notifications of confirmed AFP through the CPSP, with none assessed to be polio, representing a non-polio AFP detection rate of 0.67/100,000 in children less than 15 years of age.[2] This includes cases reported through CPSP network and IMPACT.

Please refer to Public Health Ontario's (PHO) Reportable Disease Trends in Ontario reporting tool and other reports for the most up-to-date information on infectious disease trends in Ontario.

http://www.publichealthontario.ca/en/DataAndAnalytics/Pages/DataReports.aspx

For additional national and international epidemiological information, please refer to the Public Health Agency of Canada and the World Health Organization.

4.2 Reservoir

Depends on causative agent.

4.3 Modes of Transmission

Depends on causative agent.

4.4 Incubation Period

Depends on causative agent.

4.5 Period of Communicability

Varies, depending on causative agent.

4.6 Host Susceptibility and Resistance

Depends on causative agent.

5.0 Reporting Requirements

The objective of AFP Surveillance is to rule out or detect poliovirus, wherever it may continue to circulate, and to maintain Canada's polio-free certification status by demonstrating (through the capacity to identify non-polio AFP cases) that the provincial surveillance system would be capable of detecting polio should cases arise in Ontario.

As per Requirement #3 of the "Reporting of Infectious Diseases" section of the *Infectious Diseases Protocol, 2018* (or as current), the minimum data elements to be reported for each case are specified in the following:

[†] Data included in the epidemiological summary are from January 1, 2013 to December 31, 2017. Data were extracted from Query on February 7, 2018 and therefore are considered preliminary.

- *Ontario Regulation 569* (Reports) under the *Health Protection and Promotion Act* (HPPA);[5]
- The iPHIS User Guides published by PHO; and
- Bulletins and directives issued by PHO.

If polio is identified as the causative agent of AFP, refer to the Disease-Specific Chapter for acute Poliomyelitis. Any causative agent that is reportable shall also be reported under the corresponding disease.

6.0 Prevention and Control Measures

In the event that publicly funded vaccine doses are needed for case and contact management, the board of health shall contact the Ministry of Health and Long-Term Care's (ministry) immunization program at vaccine.program@ontario.ca as soon as possible.

6.1 Personal Prevention Measures

Personal prevention measures depend upon the causative agent.

6.2 Infection Prevention and Control Strategies

Routine practices are recommended for hospitalized cases and additional precautions would depend on the causative organism.

Refer to PHO's website at www.publichealthontario.ca to search for the most up-to-date information on Infection Prevention and Control.

6.3 Management of Cases

In addition to the requirements set out in the Requirement #2 of the "Management of Infectious Diseases – Sporadic Cases" and "Investigation and Management of Infectious Diseases Outbreaks" sections of the *Infectious Diseases Protocol, 2018* (or as current), the board of health shall investigate cases to determine the source of infection. Refer to Section 5: Reporting Requirements above for relevant data to be collected during case investigation. The following disease-specific information should also be obtained during case management:

- Verification that a stool specimen has been collected;
- Results of the laboratory investigation, including causative agent, if identified; and
- Cause of AFP, if identified.

An investigation to rule out paralytic polio should be undertaken (refer to the Disease-Specific Chapter of acute Poliomyelitis).

6.4 Management of Contacts

Management will depend on the causative agent, if one is identified.

6.5 Management of Outbreaks

Not applicable

7.0 References

1. Public Health Agency of Canada. Acute Flaccid Paralysis (AFP). In: Case Definitions for Communicable Diseases under National Surveillance. Canada Communicable Disease Report. 2009;35S2.
2. Canadian Paediatric Surveillance Program. 2016 Results: Canadian Paediatric Surveillance Program. Ottawa, ON: Canadian Paediatric Society; 2017. Available from: https://www.cpsp.cps.ca/publications/annual-cpsp-results
3. Heymann DL, editor. Control of Communicable Diseases Manual. 20 ed. Washington, D.C: American Public Health Association; 2015.
4. Government of Canada. Poliomyelitis (Polio): Surveillance [Internet]. Ottawa, ON: Her Majesty the Queen in Right of Canada; 2014 [updated May 30, 2014; cited May 17, 2018]. Available from: https://www.canada.ca/en/public-health/services/diseases/poliomyelitis-polio/surveillance.html
5. Health Protection and Promotion Act, R.S.O. 1990, Reg. 569, Reports, (2018). Available from: https://www.ontario.ca/laws/regulation/900569

8.0 Document History

Table 1: History of Revisions

Revision Date	Document Section	Description of Revisions
Dec 2013		New document.

Revision Date	Document Section	Description of Revisions
April 2015	1.0 Aetiologic Agent	First paragraph revised from “Acute flaccid paralysis (AFP) is the clinical presentation of a set of symptoms, and is not a final diagnosis. Surveillance is conducted in an attempt to identify cases of AFP and to investigate all reported cases for evidence to rule out poliomyelitis (polio), which is essential for polio eradication.” to “AFP is a clinical syndrome, typically characterized by rapid onset weakness, which may include respiratory and bulbar weakness. AFP is a broad clinical syndrome with an array of diagnostic possibilities, and may be the result of infectious or non-infectious agents. Surveillance is conducted in an attempt to identify cases of AFP and to investigate all reported cases for evidence to rule out poliomyelitis (polio), which is essential for maintaining Canada’s polio-free status.” Removed “echoviruses” from the list of causes of AFP.
April 2015	3.2 Diagnosis	Second sentence, revised “Laboratory testing (of stool, serum and other appropriate clinical specimens)…” to “Laboratory testing (of stool, respiratory secretions, cerebrospinal fluid 7 (CSF) and other appropriate clinical specimens)...”
April 2015	5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry	Second sentence revised from “The objective of AFP surveillance is to rule out or detect poliovirus, wherever it may continue to circulate, and to inform key areas where supplementary immunization may need to be implemented” to “The objectives of AFP surveillance are to rule out or detect poliovirus, wherever it may continue to circulate, and to maintain Canada’s polio-free certification status by demonstrating (through the capacity to identify non-polio AFP cases) that the provincial surveillance system would be capable of detecting polio should cases arise in Ontario.”

Revision Date	Document Section	Description of Revisions
April 2015	6.0 Infection Prevention and Control (IPAC) Measures	Section title revised from “Prevention and Control Measures”.
February 2019	General	Minor revisions were made to support the regulation change to Diseases of Public Health Significance. Common text included in all Disease Specific chapters: Surveillance Case Definition, Outbreak Case Definition, Diagnosis, Reporting Requirements, and Management of Cases. The epidemiology section and references were updated and Section 8.0 Additional Resources was deleted.
February 2019	6.0 Prevention and Control Measures	Updates regarding the ordering of publicly funded vaccines for case and contact management.


Ontario