# Appendix A: Disease-Specific Chapters

## Chapter: Acute Flaccid Paralysis (AFP)

Revised April 2015

# Acute Flaccid Paralysis (AFP)

☐ Communicable

☐ Virulent

**Health Protection and Promotion Act:**
**Ontario Regulation 559/91 – Specification of Reportable 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*), 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, 2, 3]

*Poliomyelitis must be distinguished from other paralytic conditions by isolation of poliovirus from stool.[1, 4]

## 2.0 Case Definition

### 2.1 Surveillance Case Definition

See Appendix B

### 2.2 Outbreak Case Definition

N/A

**If polio is identified as the causative agent of AFP, refer to the chapter on poliomyelitis, acute**. As elimination of indigenous wild poliovirus transmission was certified in Canada in September 1994, a single case of polio represents an outbreak and a public health emergency.

## 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, 3, 5, 6]

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 for both arms, to be affected.[4]

AFP due to GBS may present as symmetrical paralysis and may progress for up to 10 days.[2]

### 3.2 Diagnosis

AFP is a syndrome which can be caused by a number of pathogens. 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 Case Definitions.

## 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 less than 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).[2]

Since 1996, between 27 and 64 cases of AFP in children less than 15 years of age were reported to the CPSP each year, none attributed to wild or vaccine-derived poliovirus.[7] In 2011, there were 35 notifications of confirmed AFP through the CPSP, representing a non-polio AFP detection rate of 0.62/100,000 in children less than 15 years of age.[2] This includes cases reported through CPSP network and IMPACT.

### 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

### 5.1 To local Board of Health

Individuals who have or may have AFP shall be reported to the medical officer of health by persons required to do so under the *Health Protection and Promotion Act*, R.S.O. 1990 (HPPA).

### 5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry

Report clinical cases specified in the case definition, regardless of the causative agent identified.

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.

In Canada, including Ontario, elimination of indigenous wild poliovirus transmission was certified with the rest of the regions of the Americas in September 1994. Therefore, a single case of polio represents an outbreak and a public health emergency. If polio is identified as the causative agent of AFP, refer to the chapter on poliomyelitis, acute. Any other causative agent that is reportable shall also be reported under the corresponding disease.

Cases shall be reported using the integrated Public Health Information System (iPHIS), or any other method specified by the ministry, **within five (5) business days of receipt of initial notification** as per iPHIS Bulletin Number 17: Timely Entry of Cases.[8]

The minimum data elements to be reported for each case are specified in the following:

- *Ontario Regulation 569* (Reports) under the HPPA;
- The disease-specific iPHIS User Guides published by PHO; and,
- Bulletins and directives issued by PHO.

## 6.0 Infection Prevention and Control (IPAC) Measures

### 6.1 Personal Prevention Measures

Personal prevention measures depend upon the causative agent.

### 6.2 IPAC Strategies

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

### 6.3 Management of Cases

Thorough investigation of the case is essential to rule out polio as a source of infection, maintain Canada's polio-free certification status, and determine the source of infection.

Information that must be reported to the medical officer of health is specified in *Ontario Regulation 569* under the HPPA and includes the following:

- Date of onset of symptoms;
- 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 (see Poliomyelitis, acute Appendix A).

### 6.4 Management of Contacts

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

### 6.5 Management of Outbreaks

N/A

## 7.0 References


1. Public Health Agency of Canada. Case definitions for diseases under national surveillance. Can Commun Dis Rep. 2000 May;26 Suppl 3:i-iv 1-122. Available from: http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/index-eng.php
2. Canadian Paediatric Society; Public Health Agency of Canada. 2011 results: Canadian Pediatric Surveillance Program. Ottawa, ON: CPS; 2012 [cited 2012 Dec 13]. Available from: http://www.cpsp.cps.ca/uploads/publications/Results-2011.pdf
3. Pan American Health Organization. Acute flaccid paralysis case investigation form. Washington: PAHO; [cited 2012 Dec 13]. Available from: http://www.paho.org/English/AD/FCH/IM/AFP_InvestigationForm.pdf
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6. Alberta Health and Wellness. Public health notifiable disease management guidelines. Edmonton, AB: Government of Alberta; 2011. Acute flaccid paralysis. Available from: http://www.health.alberta.ca/documents/Guidelines-Acute-Flaccid-Paralysis-AFP-2011.pdf

7. 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

8. Ontario. Ministry of Health and Long-Term Care. Timely entry of cases. iPHIS Bulletin. Toronto, ON: Queen's Printer for Ontario; 2014:17.

## 8.0 Additional Resources

Public Health Agency of Canada. Prevention and control of occupational infections in health care: infection control guidelines. Can Commun Dis Rep. 2002;28(Suppl 1):1-264. Available from: http://publications.gc.ca/collections/Collection/H12-21-3-28-1E.pdf

Health Protection and Promotion Act, RSO 1990, c H7. Available from: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm

Immunization of School Pupils Act, RSO 1990, c I.1. Available from: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90i01_e.htm

## 9.0 Document History

**Table 1: History of Revisions**

| 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."<br><br>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** |

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|---|---|---|
| | | (**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**." |
| April 2015 | 6.0 Infection Prevention and Control (IPAC) Measures | Section title revised from "Prevention and Control Measures". |