PublicHealth
WELLINGTON-DUFFERIN-GUELPH
Stay Well.

ADVISORY

SUBJECT:	**Enterovirus D68 and Acute Flaccid Myelitis**
Date:	September 30, 2022
Pages:	3
To:	Primary Care Providers, Emergency Room Physicians, Pediatricians
From:	Dr. Nicola Mercer, Medical Officer of Health & CEO

- **Acute flaccid myelitis (AFM) is a rare disease caused by Enterovirus D68 (EV-D68). Not all patients infected with EV-D68 develop AFM.**
- **50% of recent enterovirus specimens in Ontario have tested positive for EV-D68. The overall number of cases of enterovirus is not increased at this time.**
- **Patients presenting with AFM or acute flaccid paralysis (AFP) should receive laboratory testing to identify a viral cause. Testing should cover EV-D68 and polioviruses.**
- **Cases of AFP in children less than 15 years of age must be reported to WDGPH as soon as possible.**

Background

The human enteroviruses (EV) are ubiquitous viruses that are transmitted from person to person via direct and indirect routes. Polioviruses, the prototypic enteroviruses, are the cause of paralytic poliomyelitis historically termed “acute flaccid paralysis” or AFP.

The non-polio enteroviruses are responsible for a wide spectrum of diseases in persons of all ages, although infection and illness occur most commonly in infants and young children. Acute flaccid myelitis (AFM) is a rare disease used to describe a specific form of AFP caused by EV-D68. It has many epidemiologic and clinical characteristics that overlap with poliomyelitis including neurological symptoms and limb weakness. Enterovirus D68 has caused periodic outbreaks in many countries since 2014, typically in the late summer/early fall.

On September 9, 2022, the Center for Diseases Control (CDC) in the United States issued a health advisory on increases in pediatric hospitalizations in patients with severe respiratory illness who also tested positive for rhinovirus (RV) and/or enterovirus.[1] Concurrently, surveillance reports from the United States show a higher proportion of EV-D68 positivity in children who are RV/EV positive compared to previous years.

Public Health Ontario labs have now confirmed that EV-D68 is present in Ontario with 50% of enterovirus specimens positive for EV-D68. However, the overall number of cases of EV does not seem to be higher than baseline thus far. Nonetheless, health care providers are reminded of the importance of EV testing; particularly now as EV infections tend to be more common in the fall. Acute onset of focal weakness or flaccid paralysis without another known cause should be reported to public health and tested as below.

Clinical Features

The majority of cases of AFM have upper respiratory symptoms or fever in the days or weeks preceding the onset of weakness. Fever, cough, rhinorrhea, vomiting and/or diarrhea preceded neurological symptoms by a median of 5 days in over 80% of patients. Once neurologic symptoms develop they occur over hours to days.

Differential diagnosis for AFM/AFP include Guillain-Barre Syndrome, Transverse Myelitis, Acute non bacterial meningitis, brain abscess and Enteroviruses such as EV-D68.[2]

Testing for Enterovirus

Persons of any age presenting with AFM, or any child less than 15 years of age with AFP should have laboratory investigations to detect a viral cause. Refer to PHO's Test Information Sheet for Enterovirus for testing guidelines, which are summarized below:

Stool Specimens	Initial stool collection includes three specimens: • Stool for **Poliovirus** testing in enteric kit (#390087) • Stool for **Enterovirus/Enterovirus Molecular Subtyping** in enteric kit (#390087) • Stool for **Campylobacter** testing in Cary Blair kit (#390049) or enteric bacteriology kit (#390036) Repeat stool collection at least 24 hours later: • Stool for **Poliovirus** testing in enteric kit (#390087)
Respiratory Specimens (Age ≥15)	Preferred: • NPS for **Enterovirus/Enterovirus Molecular Subtyping** in respiratory kit (#390082) Alternative options: • Nasal swab for **Enterovirus/Enterovirus Molecular Subtyping** in respiratory kit (#390082), OR • Throat swab for **Enterovirus/Enterovirus Molecular Subtyping** in respiratory kit (#390082), OR • BAL (*only if clinically indicated*) for **Enterovirus/Enterovirus Molecular Subtyping** in a sterile container
Respiratory Specimens (Age <15)	• Throat swab for **Poliovirus** testing AND **Enterovirus/Enterovirus Molecular Subtyping** in respiratory kit (#390082)
CSF	• CSF (*only if clinically indicated*) for Enterovirus/Enterovirus Molecular Subtyping in a sterile container

Please ensure that the test requisition notes that the patient is being investigated for AFP/AFM. This will ensure that all of the correct testing is done.

Reporting Requirements for Health Care Providers

Cases of AFP in children less than 15 years of age must be reported to WDGPH as soon as possible. AFP is defined as acute onset of focal weakness or paralysis characterized as flaccid (reduced tone) without other obvious cause (e.g., trauma) in children <15 years of age.[2]

- Cases of Guillain-Barre Syndrome (GBS) should be included as cases of AFP.
- Transient weakness (e.g., post-ictal) should not be reported.

To report a disease of public health significance, please fax information to the **WDG Public Health Infectious Disease Program** at 1-855-934-5463.

References:

1. Centers for Disease Control and Prevention. Severe Respiratory Illnesses Associated with Rhinoviruses and/or Enteroviruses Including EV-D68 – Multistate, 2022, September 9, 2022. Available at: https://emergency.cdc.gov/han/2022/han00474.asp
2. Ontario Ministry of Health. Ontario Public Health Standards: Requirements for Programs, Services and Accountability Infectious Disease Protocol Appendix 1: Case Definitions and Disease-Specific Information Disease: Acute Flaccid Paralysis (AFP) Effective: May 2022, accessed on September 30, 2022. Available at: https://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/afp_chapter.pdf

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