NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

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Division of Public Health

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To: North Carolina Health Care Providers
From: Zack Moore, MD, MPH, State Epidemiologist
Scott Shone, PhD, HCLD(ABB), State Public Health Laboratory Director
Re: Acute Flaccid Myelitis (AFM) and Poliomyelitis Testing and Reporting

This memo provides updated information regarding identification and management of suspected cases of acute flaccid myelitis (AFM) and poliomyelitis and to provide guidance on reporting of such cases to public health officials.

Background
AFM and polio are both acute flaccid paralytic diseases.

AFM is usually characterized by sudden onset of weakness and loss of muscle tone and reflexes in the arms and/or legs. In addition to limb weakness, some patients will experience facial droop or weakness; difficulty moving the eyes; drooping eyelids; difficulty with swallowing; or slurred speech.

AFM has been tracked by CDC since 2014 and became reportable in North Carolina in 2020. Most cases of AFM occur between August and November. No single cause of AFM has been identified; however, it has been associated with several viruses, including enterovirus D68 (EV-D68). On September 9, 2022, CDC issued a Health Alert Network (HAN) Health Advisory reporting increased incidence of severe respiratory illness in young children caused by rhinoviruses/enterovirus with increased detection of EV-D68.

Polio has many similar symptoms to AFM including weakness in the arms and/or legs. Wild type poliovirus was eliminated from local transmission in the United States in 1979, however a case of polio caused by vaccine derived poliovirus type 2 was identified in an unvaccinated individual from Rockland County, NY in July 2022. People who are unvaccinated or incompletely vaccinated continue to be at risk of polio when traveling to places with circulation of vaccine derived poliovirus or wild type poliovirus.

Clinical Criteria and Case Reporting

Acute Flaccid Myelitis
A person who meets the following criteria should be considered a possible AFM case and reported to NC DPH

- A person with clinical **AND** laboratory/imaging criteria for reporting, **OR**
- A person whose death certificate lists AFM as cause of death or a contributing cause of death, **OR**

- A person with autopsy findings that include histopathologic evidence of inflammation largely involving the anterior horn of the spinal cord

Clinical criteria

- An illness with onset of acute flaccid* limb weakness
  *low muscle tone, limp, hanging loosely, not spastic or contracted

Laboratory/Imaging Criteria

- An MRI showing a spinal cord lesion in at least some gray matter† and spanning one or more vertebral segments, **AND**
- Excluding persons with gray matter lesions in the spinal cord resulting from physician diagnosed malignancy, vascular disease, or anatomic abnormalities.
  † Terms in the spinal cord MRI report such as "affecting mostly gray matter," "affecting the anterior horn or anterior horn cells," "affecting the central cord," "anterior myelitis," or "poliomyelitis" would all be consistent with this terminology.

Further information on criteria for case ascertainment and case reporting can be found at https://www.cdc.gov/acute-flaccid-myelitis/hcp/case-definitions.html

Poliomyelitis

Clinical Criteria

- Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss.

Consider polio in patients with polio-like symptoms, especially those with anterior myelitis and if the person is unvaccinated, incompletely vaccinated, recently traveled abroad to a place where polio still occurs, or was exposed to a person who recently traveled to one of these areas. Detection of poliovirus in CSF from confirmed polio cases is uncommon, and a negative CSF test result cannot be used to rule out polio.

Clinicians should report suspected cases of AFM or poliomyelitis to the NC DPH Communicable Disease Branch at 919-733-3419. Cases should be reported irrespective of laboratory results suggestive of infection with a particular pathogen.

- NC DPH requests that clinicians complete the patient summary form (available at https://www.cdc.gov/acute-flaccid-myelitis/hcp/data-collection.html) and submit completed forms to NC DPH Communicable Disease Branch via secure fax at 919-733-0490 to the attention of "AFM surveillance".
- Additional information, including admission and discharge notes when available, MRI reports and images, and neurology consult notes should be provided along with the patient summary form.
- Reports of suspected cases of AFM will be submitted to the CDC for determination of case status- i.e., confirmed, probable, or not a case.

Laboratory Testing

Clinicians should collect specimens from patients suspected of having AFM or polio as early as possible in the course of illness (preferably on the day of onset of limb weakness). Notification of the NC DPH epidemiologist on call (919-733-3419) and pre-approval from CDC (AFMLab@cdc.gov) are required prior to shipping any specimens. The following specimens should be collected:

- CSF specimen (≥1 mL, collected at the same time or within 24hr of serum)
- Serum (≥0.4 mL, collected at the same time or within 24 hrs of CSF)
- Nasopharyngeal (NP) or oropharyngeal (OP) swab in 1 mL viral transport medium
- Two (2) whole stool specimens, collected at least 24 hours apart (≥1 gram each).

All specimens listed above must be frozen at ≤-20°C within 72 hours of collection. Following approval from CDC, samples can be shipped on dry ice directly to the CDC Monday through Thursday. Specimens must arrive at CDC fully frozen (≤-20°C) and within 30 days of collection. The NC DPH Communicable Disease Branch must be notified (919-733-3419) when specimens are shipped and provided with the tracking number. Alternatively, frozen specimens can be sent to the North Carolina State Laboratory of Public Health (NCSLPH). Specimens will be maintained frozen at NCSLPH and shipped to CDC.

In the event of a death, additional specimens will be requested. The NCSLPH will work directly with the Office of the Chief Medical Examiner to ensure that proper specimens are collected and forwarded to the CDC for testing.

The following forms must be included with all submissions to CDC:

- CDC 50.34 DASH Form for AFM: https://slph.dph.ncdhhs.gov/forms.asp, requesting testing for CDC-10375 (Picornavirus Special Study). A separate DASH form must accompany each individual specimen. If your browser's PDF viewer does not display the CDC DASH form please follow the important instruction provided below the link.
- AFM Patient Summary Form, page 1 (https://www.cdc.gov/acute-flaccid-myelitis/hcp/data-collection.html)

If specimens will be sent to the NCSLPH, the following form must be included as well:

- NC SLPH Form DHHS-3431: https://slph.dph.ncdhhs.gov/forms.asp (under "Infectious Agent(s) Suspected or Test(s) Requested", check "Other" and indicate "Suspect AFM")

For more information

- AFM information for clinicians and public health officials: https://www.cdc.gov/acute-flaccid-myelitis/hcp/clinicians-health-departments.html
- General resources and references for AFM: https://www.cdc.gov/acute-flaccid-myelitis/hcp/references-resources.html
- CDC Polio COCA presentation: https://emergency.cdc.gov/coca/calls/2022/callinfo_090122.asp