Government of the District of Columbia
Department of Health

Center for Policy, Planning and Evaluation Administration
Division of Epidemiology-Disease Surveillance and Investigation

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Health Alert for Health Care Providers
Continued Vigilance Urged for Cases of Acute Flaccid Myelitis

The District of Columbia Department of Health would like to share some important information on acute flaccid myelitis (AFM) based on the most up-to-date information from the Centers for Disease Control and Prevention (CDC). AFM refers to an illness characterized by acute onset of focal limb weakness.

Summary
The CDC received an increased number of reports of AFM from August-October 2014, and has continued to receive sporadic reports since this time. The apparent increase in AFM cases in 2014 coincided with a national outbreak of severe respiratory illness among children caused by enterovirus-D68 (EV-D68), which resulted in an increased number of children hospitalized. However, despite this close association in timing between the EV-D68 outbreak and the increase in AFM cases, an etiology for the 2014 AFM cases was not determined. As the increase in AFM cases started in August 2014, it is unclear if an increase could occur again this year, coinciding with enterovirus season. Therefore, we are re-emphasizing the importance of continued vigilance by clinicians for cases of AFM **among all age groups, irrespective of enterovirus status**. We encourage the reporting of cases, as this will help to monitor potential increases in this illness and better understand potential causes, risk factors, and preventive measures or therapies.

Status of the 2014 National AFM Investigation (Data as of July 2015)

- 120 children in 34 states developed AFM that met the CDC's outbreak case definition
- Median age of the children: 7 years
- Almost all children were hospitalized
- Most children presented with acute onset of areflexic limb weakness, usually following a respiratory or febrile illness
- About 75% of children had cerebrospinal fluid (CSF) with pleocytosis (CSF white blood cell count >5 cells/mm^3), often with elevated CSF protein levels
- Cases were also characterized by distinctive abnormalities on spinal MRI, where pathologic changes were largely restricted to the central gray matter of the spinal cord

The findings strongly suggested an infectious (viral) process involving the spinal cord that produces a clinical illness similar to that caused by poliovirus. Many different biological specimens were collected from patients to test for various pathogens that can result in this syndrome. Although EV-D68 was the virus most commonly identified in respiratory specimens, <20% of AFM patients had EV-D68 identified from a respiratory specimen. Furthermore, despite extensive testing, no pathogen was consistently detected in patients' CSF. Therefore, continued vigilance and testing of specimens is needed to help help clarify a cause and determine the frequency of AFM.

Revision to AFM Case Definition
As of August 1, 2015, to be considered a case of AFM, a patient must meet the criteria below.

Clinical Criteria:
An illness with onset of acute focal limb weakness and a magnetic resonance image (MRI) showing spinal cord lesion largely restricted to gray matter and spanning one or more spinal segments, **OR** cerebrospinal fluid (CSF) with pleocytosis (white blood cell count >5 cells/mm^3, adjusting for presence of red blood cells by subtracting 1 white blood cell for every 500 red blood cells present).

Case classification –

Confirmed:

- Clinically compatible case AND
- MRI showing spinal cord lesion largely restricted to gray matter and spanning one or more spinal segments

Probable:

- Clinically compatible case AND
- CSF showing pleocytosis (white blood cell count >5 cells/mm^3)

The changes in the case definition (namely, the removal of an age limit, and the addition of CSF findings to identify a "probable" case), were made for several reasons. During the 2014 investigation, the case definition focused on cases among children. The case definition has been expanded to include all ages to provide a more complete picture of the full spectrum of illness; however, the focus of increased vigilance continues to be children because AFM occurs more often in children. Certain etiologies of AFM (e.g., West Nile virus, herpesviruses) more often affect older persons than children. The addition of CSF findings was included to add additional sensitivity to the case definition, recognizing that some patients may not undergo MRI, or MRI findings may be normal despite the presence of AFM, when the MRI is performed early in the illness.

Recommendations for Increased Vigilance

- We are advising clinicians to continue reporting cases of AFM to us.
- We are requesting that cases classified as confirmed or probable be reported to us irrespective of laboratory testing results (e.g., if a patient meets the clinical case definition for a confirmed or probable case of AFM but laboratory testing results are negative for enterovirus or any other pathogen, the case should still be reported).
- Clinicians treating patients meeting the AFM case definition should consult with us for laboratory testing of CSF, blood, serum, respiratory, and stool specimens for enteroviruses, West Nile virus, and other known infectious etiologies.

Recommendations for Clinical Management and Follow-up of Patients
Information to help manage care of persons with acute flaccid myelitis that meet CDC's case definition can be found at: http://www.cdc.gov/ncird/downloads/acute-flaccid-myelitis.pdf.

Recommendations for Specimen Collection and Testing
Clinicians are advised to collect specimens from patients suspected of having AFM as early as possible in the course of illness (preferably on the day of onset of limb weakness) including CSF, whole blood, serum, stool, a nasopharyngeal aspirate, nasopharyngeal wash, or nasopharyngeal swab [with lower respiratory specimen if indicated], and an oropharyngeal swab. Early specimen collection has the best chance to yield a diagnosis.

The priority of specimens for testing for AFM at CDC is: cerebrospinal fluid (CSF) >> blood (serum and whole blood) >> stool (if rule out polio testing cannot be conducted at a reference lab outside of CDC)>>nasopharyngeal aspirate, nasopharyngeal wash, nasopharyngeal swab, and oropharyngeal swab.

For stool specimens, CDC recommends that healthcare providers rule out poliovirus infection in cases of acute flaccid paralysis (AFP) that are clinically compatible with polio, including those with anterior myelitis.

For more information or questions about reporting cases, please contact the District of Columbia Department of Health, Division of Epidemiology–Disease Surveillance and Investigation at 202-442-9065 or doh.epi@dc.gov.

Additional Resources

1. A brief summary of the status of the investigation through November 13, 2014 can be found in CDC's MMWR: Acute Flaccid Myelitis Among Persons Aged ≤21 years –United States, August 1-November 13, 2014
   http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6353a3.htm.

2. In June 2015, the Council of State and Territorial Epidemiologists (CSTE) adopted a standardized case definition for AFM
   http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/2015PS/2015PSFinal/15-ID-01.pdf

3. For general information about enterovirus infections, including EV-D68, and for up-to-date guidance about infection control measures, visit the CDC enterovirus website.
   http://www.cdc.gov/non-polio-enterovirus/

4. For information about poliovirus, visit the CDC poliovirus website.
   http://www.cdc.gov/polio/us/index.html

5. Recommendations for rule out polio testing.
   http://www.cdc.gov/polio/us/hcp.html.

6. For information about West Nile Virus, visit the CDC West Nile Virus website.
   http://www.cdc.gov/westnile/