Key Points — Investigation of Acute Flaccid Myelitis in U.S. Children, 2014

Note: Newly added information is in red.

Acute Flaccid Myelitis Investigation in the United States, 2014

- CDC is working with healthcare professionals and state and local health departments to investigate reports of children across the United States who developed a sudden onset of weakness in one or more arms or legs with MRI scans that show an inflammation predominantly of the gray matter—nerve cells—in the spinal cord. This illness is now being referred to as acute flaccid myelitis.

- From August 2 to December 10, 2014, CDC has verified reports of 94 children in 33 states who developed acute flaccid myelitis that meets CDC's case definition (http://www.cdc.gov/ncird/investigation/viral/Sep2014.html). We're in the process of verifying two additional reports.
    - CDC and healthcare professionals are working to better understand these cases of acute flaccid myelitis, including potential causes and how often the illness occurs. However, such investigations take time.

- Among possible causes, we're investigating whether the cases of acute flaccid myelitis may be linked to the outbreak of severe respiratory illness caused by enterovirus D68 (EV-D68) that the U.S. experienced this year.
    - Enteroviruses most commonly cause mild illness, sometimes aseptic meningitis, and rarely encephalitis and myelitis.
    - We are aware of only two published reports of children with neurologic illnesses confirmed as EV-D68 infection from cerebrospinal fluid testing.

- CDC understands that Americans may be concerned about these illnesses. Severe illness is always a concern to us, especially when children are affected. We will continue to share information as soon as we have it, and post updates on our website (http://www.cdc.gov/ncird/investigation/viral/sep2014.html).

CDC Health Advisory

- On September 26, 2014, CDC issued a Health Advisory to healthcare professionals nationwide to be vigilant for and report cases of acute flaccid myelitis that meet CDC's case definition. CDC issued this advisory after receiving a report on September 12, 2014 from the Colorado Department of Public Health and Environment (CDPHE) about a cluster of nine children at a hospital who developed a sudden unexplained onset of this illness.

Neurologic Illness with Limb Weakness

- A sudden onset of weakness in the arms or legs can result from a variety of causes, including viral infections, environmental toxins, and genetic disorders. Guillain-Barré syndrome, a neurologic disorder caused by an abnormal immune response, can also cause this type of illness.
    - However, the acute flaccid myelitis cases reported this year, which include MRI scans that show an inflammation predominantly of the gray matter—nerve cells—in the spinal cord, are most similar to illnesses caused by viruses including poliovirus, other enteroviruses, adenoviruses, West Nile virus, and herpesviruses.

- Every year, children in the United States develop neurologic illness with limb weakness, and often the causes are not identified.

Guidance for Healthcare Professionals

Clinicians should

- be vigilant for and immediately report to their state or local health department any patients who meet the following case definition, using a patient summary form available on CDC's website (http://www.cdc.gov/ncird/investigation/viral/sep2014/hcp.html):
    1. Patients ≤21 years of age,
    2. Acute onset of focal limb weakness,
    3. Occurring on or after August 1, 2014, **and**
    4. An MRI showing a spinal cord lesion largely restricted to gray matter.

- consult with their local and state health department for laboratory testing of stool, respiratory and cerebrospinal fluid specimens for enteroviruses including poliovirus, West Nile virus and other known infectious etiologies for patients meeting the above case definition.

- refer to CDC's "Interim Considerations for Clinical Management of Patients with Acute Flaccid Myelitis," released November 7 with consensus from experts in infectious diseases, neurology, pediatrics, critical care medicine, public health epidemiology and virology (http://www.cdc.gov/ncird/downloads/acute-flaccid-myelitis.pdf).

Health departments should

- report patients meeting the case definition to CDC by email at limbweakness@cdc.gov or secure fax at 404-471-8442, using a patient summary form available on the CDC website (http://www.cdc.gov/ncird/investigation/viral/sep2014/health-departments.html).

- ship available clinical specimens to CDC as soon as possible after case identification, so that CDC can test and monitor these cases in as real time as possible.

- contact CDC for further laboratory and epidemiologic support by phone through the CDC Emergency Operations Center (770-488-7100), or by email at limbweakness@cdc.gov.

Guidance for the General Public

- Being up to date on all recommended vaccinations is the best way to protect yourself and your family from a number of diseases that can cause severe illness and death, including polio; acute respiratory illnesses, such as influenza; measles; and whooping cough.

- You can help protect yourselves from infections in general by
  - washing your hands often with soap and water,
  - avoiding close contact with sick people, and
  - disinfecting frequently touched surfaces.

- You can protect yourself from mosquito-borne viruses, such as West Nile virus, by using mosquito repellent, and staying indoors at dusk and dawn, which is the prime period that mosquitoes bite.

- If your child appears very sick or seems to have a sudden onset of weakness in arms or legs, parents should contact the pediatrician to have their child assessed for possible neurologic illness.

What CDC is Doing

CDC is

- requesting that healthcare professionals be vigilant for and report cases of acute flaccid myelitis to CDC through their state or local health department

- verifying reports of cases of acute flaccid myelitis using our case definition

- working with healthcare professionals and state and local health departments to investigate and better understand the cases of acute flaccid myelitis, including potential causes and how often the illness occurs

- testing specimens, including stool, respiratory and cerebrospinal fluid, from the children with acute flaccid myelitis

- working with experts in neurology, pediatrics, critical care medicine, public health epidemiology, and virology to provide interim considerations to help clinicians and public health officials manage care of children with acute flaccid myelitis that meet CDC's case definition (http://www.cdc.gov/ncird/downloads/acute-flaccid-myelitis.pdf).

- providing information to healthcare professionals, policymakers, general public, and partners in various formats, such as the Morbidity and Mortality Weekly Report, health alerts, websites, social media, and presentations

- exploring the potential association of acute flaccid myelitis (AFM) with enterovirus D68 (EV-D68) and other etiologies as well as risk factors for AFM. This includes
  - planning a case control study and
  - testing specimens from AFM cases for a wide range of viruses that may be associated with this clinical presentation and testing for previously unrecognized pathogens.
  - The protocols have not been finalized for most of these activities.

More information

- CDC Investigation of Acute Flaccid Myelitis in U.S. Children, 2014 website: http://www.cdc.gov/ncird/investigation/viral/sep2014.html
- Acute Neurologic Illness of Unknown Etiology in Children — Colorado, August—September, 2014, MMWR, October 3, 2014 (http://www.cdc.gov/mmwr/)
- Acute Neurologic Illness with Focal Limb Weakness of Unknown Etiology in Children, Health Alert Network, September 26, 2014 (http://emergency.cdc.gov/han/han00370.asp)
- Neurologic Illness with Limb Weakness in Children, COCA Call, October 3, 2014 (http://emergency.cdc.gov/coca/calls/2014/callinfo_100314.asp)