

Key Points — Investigation of Neurologic Illness with Limb Weakness in U.S. Children, 2014

Note: Newly added information is in red.

CDC Health Advisory

- On September 26, 2014, CDC issued a Health Advisory to healthcare professionals nationwide to be vigilant for and report cases of sudden onset of neurologic illness associated with limb weakness that meet CDC's case definition. We 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 sudden unexplained neurologic illness.

Update

- From August 2 to **November 20**, 2014, CDC has verified reports of **88** children who developed neurologic illness with limb weakness in **32** states. We're in the process of verifying less than half a dozen additional reports. In addition to the cluster in Colorado, several other smaller clusters have been identified; this remains one of the most unusual features of these cases.
- Every year, children in the United States develop this type of neurologic illness, and often the causes are not identified. CDC is working with healthcare professionals and state and local health departments to investigate all the reported cases since August. The investigation of these cases is allowing us to better understand the illness, who is affected, how often the illness occurs, and potential causes. However, such investigations take time.
- Among other possible causes, we're investigating whether the cases of neurologic illness 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, less commonly encephalitis, and rarely, acute myelitis and paralysis.
 - We are aware of only two published reports of children with neurologic illnesses confirmed as EV-D68 infection from cerebrospinal fluid testing.
- Neurologic illness with muscle weakness can result from a variety of noninfectious and infectious causes, including enteroviruses (polio and non-polio), adenovirus, West Nile virus and similar viruses, and herpesviruses. Guillain-Barré syndrome is a neurologic disorder caused by an abnormal immune response.
 - Attempts to identify the causes of neurologic illness with muscle weakness have historically been challenging.
- 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>).

Guidance for Healthcare Professionals

Clinicians should

- immediately report to their state or local health department any patients who meet the following case definition:
 - Patients ≤ 21 years of age,
 - Acute onset of focal limb weakness,
 - Occurring on or after August 1, 2014, **and**
 - 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.

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.html>).

- 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. Confirmation of the presence of EV-D68 currently requires typing by molecular sequencing.

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 neurologic illness with limb weakness to CDC through their state or local health department
- verifying reports of cases of neurologic illness using our case definition
- working with healthcare professionals and state and local health departments to investigate and better understand the illness, who is affected, how often the illness occurs, and potential causes
- testing specimens, including stool, respiratory and cerebrospinal fluid, from the children with neurologic illness
- working with professionals in neurology, pediatrics, intensive care, infectious diseases, immunology, virology, and public health to develop guidance to help clinicians manage care of children with neurologic illness
- 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

More information

- CDC Investigation of Acute Neurologic Illness with Focal Limb Weakness of Unknown Etiology in Children, Fall 2014 website: <http://www.cdc.gov/ncird/investigation/viral/sep2014.html>
- CDC Unexplained Paralysis Hospitalizes Children webpage: <http://www.cdc.gov/features/unexplainedparalysis/index.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)