

## Health Advisory

### Cover Sheet

**DATE:** September 29, 2014

**SUBJECT:** Acute Neurologic Illness with Focal Limb Weakness of Unknown Etiology in Children

**INSTRUCTIONS:**

***DISTRIBUTE*** to your local HAN contacts. This HAN is intended for general sharing of information.

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**For LOCAL HEALTH DEPARTMENT reference only**

DPHHS Subject Matter Resource for more information regarding this HAN, contact:

**DPHHS CDCP  
Epidemiology Section  
1-406-444-0273**

**DPHHS Health Alert Hotline:  
1-800-701-5769**

**DPHHS HAN Website:  
[www.han.mt.gov](http://www.han.mt.gov)**

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**Categories of Health Alert Messages:**

**Health Alert:** conveys the highest level of importance; warrants immediate action or attention.

**Health Advisory:** provides important information for a specific incident or situation; may not require immediate action.

**Health Update:** provides updated information regarding an incident or situation; unlikely to require immediate action.

**Information Service:** passes along low level priority messages that do not fit other HAN categories and are for informational purposes only.

**Please call DPHHS to update contact information at 444-0919**

# Information Sheet

**Date:** September 29, 2014

**Subject:** Neurologic Illness with Limb Weakness of Unknown Cause in Children

**Background:** The Centers for Disease Control and Prevention (CDC) is working closely with the Colorado Department of Public Health and Environment and Children's Hospital to investigate reports from August 9 to September 17, 2014, of nine children hospitalized for neurologic illness with limb weakness of unknown cause. Respiratory specimens from eight of the children were tested for rhinovirus/enterovirus; two were negative and six were positive. Of the six, four were positive for enterovirus D68 (EV-D68); two are pending.

**Information:** CDC has requested reporting of other similar neurologic illnesses, especially cases clustered in time and place, in all states with particular interest in characterizing the clinical picture and causes of cases. Neurologic illness with limb weakness can result from a variety of infectious and noninfectious causes. Viral causes of neurologic illness include enterovirus (polio and non-polio), adenovirus, and West Nile Virus (WNV); however, neurologic illness caused by these pathogens is highly uncommon in the United States. Confirming the presence of pathogens in the cerebrospinal fluid (CSF) through laboratory testing provides the strongest evidence that a pathogen is the cause of an acute neurologic illness. Attempts to identify the causes of neurologic illness with limb weakness have historically been challenging, especially with respect to infectious etiologies.

## Recommendations:

### Clinicians

- Immediately report to their local health department any patients who meet the following case definition
  - Patients  $\leq 21$  years of age with:
    - 1) Acute onset of focal limb weakness occurring on or after August 1, 2014;
  - AND
  - 2) 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 CSF specimens for enteroviruses, WNV and other known infectious etiologies for patients meeting the above case definition.
- Providers treating patients meeting the above case definition should consult with their local and state health department for laboratory testing of stool, respiratory, and cerebrospinal fluid specimens for enteroviruses, WNV, and other known infectious etiologies.

### Health Departments

Inform DPHHS CDEpi of any cases meeting the definition above and CDEpi will provide consultation and support regarding the need for further testing and issues regarding reporting using the form linked below.

Report to DPHHS people meeting the case definition to CDC using a brief patient summary form ([www.cdc.gov/non-polio-enterovirus/investigation/](http://www.cdc.gov/non-polio-enterovirus/investigation/)).

This is an official  
**CDC HEALTH ADVISORY**

Distributed via the CDC Health Alert Network  
September 26, 2014, 17:00 ET  
CDCHAN-00370

## **Acute Neurologic Illness with Focal Limb Weakness of Unknown Etiology in Children**

**Summary:** *The Centers for Disease Control and Prevention (CDC) is working closely with the Colorado Department of Public Health and Environment (CDPHE) and Children's Hospital Colorado to investigate a cluster of nine pediatric patients hospitalized with acute neurologic illness of undetermined etiology. The illness is characterized by focal limb weakness and abnormalities of the spinal cord gray matter on MRI. These illnesses have occurred since August 1, 2014 coincident with an increase of respiratory illnesses among children in Colorado. The purpose of this HAN Advisory is to provide awareness of this neurologic syndrome under investigation with the aim of determining if children with similar clinical and radiographic findings are being cared for in other geographic areas. Guidance about reporting cases to state and local health departments and CDC is provided. Please disseminate this information to infectious disease specialists, intensive care physicians, pediatricians, neurologists, radiologists/neuroradiologists, infection preventionists, and primary care providers, as well as to emergency departments and microbiology laboratories.*

### **Background**

The CDPHE, Children's Hospital Colorado, and CDC are investigating nine cases of acute neurologic illness among pediatric patients. The cases were identified during August 9–September 17, 2014 among children aged 1–18 years (median age 10 years). Most of the children were from the Denver metropolitan area. All were hospitalized. Common features included acute focal limb weakness and specific findings on magnetic resonance imaging (MRI) of the spinal cord consisting of non-enhancing lesions largely restricted to the gray matter. In most cases, these lesions spanned more than one level of the spinal cord. Some also had acute cranial nerve dysfunction with correlating non-enhancing brainstem lesions on MRI. None of the children experienced altered mental status or seizures. None had any cortical, subcortical, basal ganglia, or thalamic lesions on MRI. Most children reported a febrile respiratory illness in the two weeks preceding development of neurologic symptoms. In most cases, cerebrospinal fluid (CSF) analyses demonstrated mild-moderate pleocytosis (increased cell count in the CSF) consistent with an inflammatory or infectious process. CSF testing to date has been negative for enteroviruses, including poliovirus and West Nile virus. Nasopharyngeal specimens were positive for rhinovirus/enterovirus in six out of eight patients that were tested. Of the six positive specimens, four were typed as EV-D68, and the other two are pending typing results. Testing of other specimens is still in process. Eight out of nine children have been confirmed to be up to date on polio vaccinations. Epidemiologic and laboratory investigations of these cases are ongoing.

The United States is currently experiencing a nationwide outbreak of EV-D68 associated with severe respiratory disease. The possible linkage of this cluster of neurologic disease to this large EV-D68 outbreak is part of the current investigation. CDC is seeking information about other similar neurologic illnesses in all states, especially cases clustered in time and place. CDC has particular interest in characterizing the epidemiology and etiology of such cases.

### **Recommendations**

- Patients who meet the following case definition should be reported to state and local health departments:

Patients ≤21 years of age with

- 1) Acute onset of focal limb weakness occurring on or after August 1, 2014;

AND

- 2) An MRI showing a spinal cord lesion largely restricted to gray matter.

- State and local health departments should report patients meeting the case definition to CDC using a brief patient summary form ([www.cdc.gov/non-polio-enterovirus/investigation/](http://www.cdc.gov/non-polio-enterovirus/investigation/)). State health departments should send completed summary forms to CDC by email at [limbweakness@cdc.gov](mailto:limbweakness@cdc.gov).
- Providers treating patients meeting the above case definition should consult with their local and state health department for laboratory testing of stool, respiratory, and cerebrospinal fluid specimens for enteroviruses, West Nile virus, and other known infectious etiologies.
- Health departments may 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](mailto:limbweakness@cdc.gov). Confirmation of the presence of EV-D68 currently requires typing by molecular sequencing.

**For more information:**

Please visit the CDC enterovirus website (<http://www.cdc.gov/non-polio-enterovirus/>) for general information about enterovirus infections, including EVD-68, and for up-to-date guidance about infection control measures. For information about poliovirus, please visit the CDC poliovirus website (<http://www.cdc.gov/vaccines/vpd-vac/polio/in-short-both.htm>). For information about West Nile Virus, please visit the CDC West Nile Virus website (<http://www.cdc.gov/westnile/>). State and local health departments with questions should contact the CDC Emergency Operations Center (770-488-7100).

*The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.*

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**Categories of Health Alert Network messages:**

**Health Alert** Requires immediate action or attention; highest level of importance  
**Health Advisory** May not require immediate action; provides important information for a specific incident or situation  
**Health Update** Unlikely to require immediate action; provides updated information regarding an incident or situation  
**HAN Info Service** Does not require immediate action; provides general public health information

##This message was distributed to state and local health officers, state and local public health lab directors, public information officers, epidemiologists, HAN coordinators, and clinician organizations##