Enterovirus D68 (EV-D68)

This CD Update is to provide you with information about the nationwide outbreak of Enterovirus D 68. Specimens for 36 patients from 12 Washington counties and 1 out of state resident have been submitted to CDC for testing since September 8, 2014. Results have been received for 15 of the patients. Three of the patients had a positive test for Enterovirus D68 with counties of residence of King, Snohomish, and Pierce. We will distribute additional information as it becomes available.

Criteria and patient information needed for EV-D68 testing at CDC is as follows:

Patient presented with:

**RESPIRATORY ILLNESS:**
  - Cough, and/or
  - Shortness of breath, and/or
  - Difficulty breathing

That was severe enough to require hospitalization

AND

Also requires some type of respiratory support, e.g.:
  - Continuous oxygen
  - CPAP or BiPAP
  - Ventilator

Patient information we need before we consult with the Washington Department of Health for approval to submit a specimen to CDC is available on two forms located at:
- CDC Patient Case Summary form for Severe Respiratory Illness (fillable PDF) This form must accompany specimens (NP or OP swab) submitted for enterovirus typing at CDC’s picornavirus laboratory and is available at: [http://www.cdc.gov/non-polio-enterovirus/downloads/EV68-PatientSummaryForm.pdf](http://www.cdc.gov/non-polio-enterovirus/downloads/EV68-PatientSummaryForm.pdf)

Patient presented with:

**ACUTE FLACID PARALYSIS WITH LIMB WEAKNESS**

Patients is <21 years of age with:
  - 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

A CDC Patient Case Summary form (5-pages) for Acute Neurologic Illness with Limb Weakness is needed for each person and must accompany specimens (stool, CSF, & NP swab) submitted through the Washington State Public Health Laboratory for testing (paralysis work-up) at CDC and is available at: [http://www.cdc.gov/ncird/downloads/Patient-Summary-Form.docx](http://www.cdc.gov/ncird/downloads/Patient-Summary-Form.docx)

* The lab has been inundated with requests for enterovirus typing related to this nationwide outbreak. The forms are used to triage and prioritize specimens for testing.
Information about Enterovirus D68 (EV-D68) including reporting, the disease and its epidemiology, case definition, laboratory and diagnostic services, controlling further spread, and routine prevention can be found in the Washington State Surveillance and Investigation Guidelines at: http://www.doh.wa.gov/Portals/1/Documents/5100/420-124-Guideline-EV-D68.pdf or http://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions/ListofNotifiableConditions.

The guideline has been updated to reflect the recent cluster of nine Colorado children with neurologic illness characterized by limb weakness, four were found to have had EV-D68 virus present in their upper respiratory tract (by NP swab). An investigation is ongoing to see if the cluster of illness is related to the nationwide outbreak of EV-D68. Information about the outbreak follows:

This is an official
CDC HEALTH ADVISORY

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

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 (http://www.cdc.gov/ncird/investigation/viral/sep2014.html). State health departments should send completed summary forms to CDC by email at 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. Confirmation of the presence of EV-D68 currently requires typing by molecular sequencing.

For more information:

- CDC enterovirus website (http://www.cdc.gov/non-polio-enterovirus/)
- CDC poliovirus website (http://www.cdc.gov/vaccines/vpd-vac/polio/in-short-both.htm)
- CDC West Nile Virus website (http://www.cdc.gov/westnile/).