



New Hampshire Department of Health and Human Services
October 8, 2014

Frequently Asked Questions about Enterovirus D68
(EV-D68) for Clinicians

What are the symptoms of EV-D68 infection?

Enteroviruses are a group of more than 100 different types of viruses that can cause a range of illnesses including:

- Respiratory infection
- Hand, foot, and mouth disease
- Viral conjunctivitis
- Viral meningitis and
- Less commonly encephalitis or paralysis.

Most respiratory infections with enteroviruses cause no symptoms or mild symptoms including fever, runny nose, sneezing, cough, and body and muscle aches. Enterovirus-D68 (EV-D68) mostly has been reported to cause a respiratory illness. In the current situation with circulating EV-D68, an increased number of children have become ill with more severe respiratory infection, including shortness of breath and wheezing, requiring hospitalization. Many of the children initially reported had asthma or a history of wheezing.

I heard that EV-D68 is causing neurologic symptoms including limb weakness in children, is that true?

On September 26th, the CDC sent out a health advisory alerting clinicians and public health partners that they were investigating a cluster of 9 children in Colorado who presented with acute onset of limb weakness within two weeks of developing a respiratory infection with MRI showing spinal cord abnormalities. It is unclear if this clinical syndrome is related to EV-D68 – spinal fluid analysis did not show enterovirus infection, but several patients were found to have EV-D68 on respiratory specimen testing. Central nervous system infection is not outside the realm of possibilities for EV-D68, given that enteroviruses in general are a common cause of aseptic or viral meningitis, and have been less commonly found to cause encephalitis or paralysis. While EV-D68 has mostly been reported to cause respiratory illness, there was a [case report](#) of a child in 2008 who developed meningomyeloencephalitis from EV-D68. Two MMWR articles from the Centers for Disease Control and Prevention also speak to this issue: [Acute Neurological Illness of Unknown Etiology in Children and Acute Flaccid Paralysis with Anterior Myelitis](#).

Clinicians should be aware of the possibility of EV-D68 causing CNS infection and report any cases of acute onset weakness or paralysis with abnormal MRI findings to their local health department and the NH Department of Health and Human Services, Division of Public Health Services at 603-271-4496.

How does the virus spread?

EV-D68 is thought to mainly spread through respiratory secretions, such as saliva, nasal mucus, or sputum from coughing. The virus likely spreads from person to person when an infected person coughs or sneezes, or through contaminated surfaces and hands.

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How common are EV-D68 infections in the United States?

EV-D68 infections are thought to occur less commonly than other enterovirus infections; however, we do not know how many infections and deaths from EV-D68 occur each year in the United States. Healthcare professionals are not required to routinely report this information to the NH Department of Health and Human Services or health departments in other states. Also routine testing is not available to detect EV-D68, which limits identification and reporting of this virus. The Centers for Disease Control and Prevention (CDC) does have a voluntary lab-based reporting system called the National Enterovirus Surveillance System (NESS) which monitors serotypes of the virus, but this has only reported 79 cases of EV-D68 between 2009 and 2013.

Who is at risk?

In general, infants, children, and teenagers are the most likely to get infected with enteroviruses and become ill. That's because they do not yet have immunity (protection) from previous exposures to these viruses. We believe this is also true for EV-D68 since most of the patients presenting to hospitals with EV-D68 infections are children and adolescents. Children with asthma or a history of wheezing appear to also be at higher risk for severe respiratory illness.

What should clinicians look for?

During late summer and fall 2014, the Centers for Disease Control and Prevention recommends that clinicians:

- Consider EV-D68 as a possible cause of acute, unexplained severe respiratory illness, even if the patient does not have fever.
- Ensure that the patient has an [asthma action plan](#). Reinforce use of this plan, including adherence to prescribed long-term control medication. Encourage people with asthma who are experiencing an exacerbation to seek care early. See [Asthma Care Quick Reference](#).
- Report suspected clusters of severe respiratory illness to local and state health departments. EV-D68 is not nationally notifiable.
- Consider laboratory testing of respiratory specimens for enteroviruses when the cause of respiratory illness in severely ill patients is unclear.
- Consider testing to confirm the presence of EV-D68. State health departments can be approached for diagnostic and molecular typing for enteroviruses.

The NH Department of Health and Human Services, Division of Public Health Services would also like clinicians to report any patients who present with acute onset of limb weakness or paralysis without a clear etiology and who have MRI findings showing spinal cord lesions or abnormalities.

How do I get samples tested?

For patients presenting with a respiratory infection, EV-D68 can be diagnosed by doing lab testing on specimens from a person's nose and throat. The DHHS Public Health Laboratories (PHL) can test for enteroviruses on respiratory specimens by viral culture and fluorescent antibody test. Other facilities or reference labs may be able to run PCR testing on respiratory samples to detect enteroviruses. If enteroviruses are detected on any respiratory specimen, the specimen can then be sent for EV-D68 typing, which is only performed at the CDC and a small number of state public health laboratories. The NH PHL will coordinate this testing for clinicians. We send specimens to

the New York state public health laboratories for enterovirus typing with a turn-around time of 7-10 days. To coordinate further testing with the NH PHL, please call 603-271-4661. [Specimen collection guidelines](#) are available.

Who should be tested?

Patients who are exhibiting symptoms of a severe respiratory illness and difficulty breathing without another clear cause can be tested for EV-D68.

What is the treatment for EV-D68?

There is no specific treatment for patients with respiratory illness caused by EV-D68. For mild respiratory illness, patients can help relieve symptoms by taking over-the-counter medications for pain and fever. Aspirin should NOT be given to children. Some patients with severe respiratory illness may need to be hospitalized. There are no antiviral medications currently available for people who become infected with EV-D68.

What should patients with asthma or a history of reactive airway disease do?

The Centers for Disease Control and Prevention and the New Hampshire Department of Health and Human Services recommend that patients:

- Discuss and update asthma action plans with primary care providers.
- Take prescribed asthma medications as directed, especially long-term control medication(s).
- Be sure to keep reliever medications on you.
- If patients develop new or worsening asthma symptoms, they should follow the steps of their asthma action plan. If symptoms do not go away, patients should call their healthcare provider right away.
- Parents should make sure the child's caregiver and/or teacher is aware of his/her condition and that they know how to help if the child experiences any symptoms related to asthma.

Is there a vaccine against EV-D68?

No, there are no vaccines for preventing EV-D68 infections.

Is EV-D68 fatal?

EV-D68 has been detected in specimens from several patients around the country who died and had samples submitted for testing. The role that EV-D68 infection played in these deaths is unclear at this time; the CDC, along with state and local health departments, is continuing to investigate.

If a child is diagnosed with EV or EV-D68, should they be excluded from school/daycare?

Children should stay home until they are without a fever for at least 24 hours (off any anti-fever medications) and until the child begins to feel better. It is unclear how long after developing an enterovirus respiratory infection that someone can continue to transmit the virus, so once a child returns to school they should continue to practice good respiratory etiquette and good hand washing.

What should we be doing at my office/hospital/clinic to prevent Enterovirus-D68?

Healthcare professionals in healthcare settings should be vigilant about preventing the spread of EV-D68:

- Infection control precautions should include Standard, Contact, and Droplet Precautions in hospitalized patients for the current outbreak of EV-D68.

- Since enteroviruses are non-enveloped viruses, they are less susceptible to alcohol-based hand rub (ABHR) compared with enveloped viruses or bacteria, so hand washing is preferred. Healthcare providers in the medical setting, however, should practice hand hygiene with either soap and water or ABHR due to the better accessibility and tolerability of ABHR over hand washing in order to maintain high hand hygiene compliance. See [Hand Hygiene in Healthcare Settings](#) for more information.
- See [CDC health alert \(HAN\)](#) dated September 12, 2014 for guidance for environmental disinfection specific for EV-D68.

What is the New Hampshire Department of Health and Human Services doing to respond to EV-D68?

DHHS continues to monitor the situation and is in communication with hospitals, local health departments, healthcare providers, schools, and daycare providers about testing and clinical guidance. In conjunction with the CDC and other partners, DHHS is having samples tested to determine how widespread infection with EV-D68 is in New Hampshire. DHHS is also providing information and guidance about EV-D68 to clinicians, partners, and the public.

Has EV-D68 been confirmed in New Hampshire?

Seven cases of EV-D68 respiratory infection have been confirmed in New Hampshire so far, all in children 16 years or younger. There have been no reported deaths associated with EV-D68 in New Hampshire, and all hospitalized children with confirmed EV-D68 have been discharged. There are still a number of enterovirus tests that are pending final results. The identification of this virus in the State was expected, and the presence does not change recommendations about prevention and control.

For more information about Enterovirus D68, visit the New Hampshire Department of Health and Human Service website at: www.dhhs.nh.gov or the Centers for Disease Control and Prevention website at www.cdc.gov.