

Main Key Points for Enterovirus D68 in the United States, 2014

Note: Newly added information is in red.

- From mid-August to **September 17, 2014**, a total of **140** people in **16 states** (AL, **CT**, CO, IL, IN, IA, KS, KY, LA, MO, **MT**, NY, **NE**, OK, PA, **VA**) were confirmed to have respiratory illness caused by EV-D68.* The cases were confirmed by CDC or state public health labs that notified CDC. So far, no deaths attributed to EV-D68 infection have been documented.
- Hospitals in MO and IL have had higher numbers of children with severe respiratory illness caused by EV-D68 than usual for this time of year. Many other states are investigating similar clusters of people with severe respiratory illness, and assessing whether there are increases in EV-D68 infections in their hospitals.
- **Many states are likely affected by respiratory illnesses caused by EV-D68, but it is too soon to know how widespread it is in the United States. As investigations progress, we will have a better understanding of the whether the trends for EV-D68 infections are going up or down.**
- **Since mid-August, more than 30 states have sent specimens to CDC for testing, and CDC has tested over 200 specimens. Some states have also tested specimens. So far, more than a third of the specimens tested by CDC were not positive for EV-D68.**
- CDC also continues to collect information from states and assess the situation to better understand:
 - EV-D68 and the illness caused by this virus,
 - how widespread EV-D68 infections may be and the populations affected, and
 - whether other states are experiencing increased severe respiratory illness, possibly due to EV-D68.
- In the United States, people are more likely to get infected with enteroviruses in the summer and fall. We are currently in the middle of the enterovirus season. EV-D68 infections are likely to decline later in the fall.
- Many other viruses that cause respiratory illness are circulating in the United States during this time of year. Not all clusters or outbreaks of respiratory illness occurring now are due to EV-D68.
- **EV-D68 is not a new type of enterovirus.** It is genetically very close to the types of EV-D68 that were previously detected in 2012 and 2013 in the United States, southern Europe, and Asia.
- CDC understands that Americans may be concerned about this situation. Severe respiratory illness is always a concern to us, especially when infants and children are affected. We will share information as soon as we have it, and post updates on our website (www.cdc.gov/non-polio-enterovirus).
- Clinicians should consider EV-D68 as a possible cause of severe respiratory illness, particularly in children, and report unusual increases in the numbers of patients with severe respiratory illness to their health department.
- The general public can help protect themselves from respiratory illnesses by washing hands with soap and water, avoiding close contact with sick people, and disinfecting frequently touched surfaces.

* In the upcoming weeks, more states will have confirmed cases of EV-D68 infection. The primary reason for increases in cases is that several states are investigating clusters of people with severe respiratory illness, and specimens are still being tested for EV-D68. It can take a while to test specimens and obtain lab results. That's because the testing is complex and slower, and can only be done by CDC and a small number of state public health laboratories. As the backlog of specimens is processed, the number of states and confirmed cases will likely increase. These increases will not necessarily reflect changes in real time, or mean that the situation is getting worse.

General Key Points About Enteroviruses and Enterovirus D68

Background

Enteroviruses

- Enteroviruses are very common viruses; there are more than 100 types.
- It is estimated that 10 to 15 million enterovirus infections occur in the United States each year. **Tens of thousands of people are hospitalized each year for illnesses caused by enteroviruses.**
- Enteroviruses can cause respiratory illness, febrile rash, and neurologic illnesses, such as aseptic meningitis (swelling of the tissue covering the brain and spinal cord) and encephalitis (swelling of the brain).
- Most infected people have no symptoms or only mild symptoms, but some infections can be serious.
- Infants, children, and teenagers are most likely to get infected with enteroviruses and become sick. Adults can get infected with enteroviruses, but they are more likely to have no symptoms or mild symptoms.
- In general, the spread of enteroviruses is often quite unpredictable, and different types of enteroviruses can be common in different years with no particular pattern. In the United States, people are more likely to get infected with enteroviruses in the summer and fall.

Enterovirus D68

- Enterovirus D68 (EV-D68) infections are thought to occur less often than infections with other enteroviruses.
- EV-D68 was first identified in California in 1962. Compared with other enteroviruses, EV-D68 has been rarely reported in the United States. However, EV-D68, like other enteroviruses, is likely to be found in many places in the United States during this time of the year.
- **EV-D68 has been previously referred to as human enterovirus 68 (or HEV-68) and human rhinovirus 87 (or HRV-87). They are all same virus. The D stands for enterovirus species D.**

Symptoms

- EV-D68 has been reported to cause mild to severe respiratory illness.
 - Mild symptoms may include fever, runny nose, sneezing, cough, and body and muscle aches.
 - Most of the children who got very ill with EV-D68 infection in MO and IL had difficulty breathing, and some had wheezing. Many of these children had asthma or history of wheezing.

People are risk

- In general, infants, children, and teenagers are 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.
- Among the EV-D68 cases in MO and IL, children with asthma seemed to have a higher risk for severe respiratory illness.

Transmission

- EV-D68 is not frequently identified, so it is less studied and the ways it spreads are not well-understood. Since EV-D68 causes respiratory illness, the virus can be found in an infected person's respiratory secretions, such as saliva, nasal mucus, or sputum. The virus likely spreads from person to person when an infected person coughs, sneezes, or touches contaminated surfaces.

Diagnosis

- EV-D68 can only be diagnosed by doing specific lab tests on specimens from a person's nose and throat.
- Many hospitals and some doctor's offices can test ill patients to see if they have enterovirus infection. However, most cannot do specific testing to determine the type of enterovirus, like EV-D68. Some state health departments and CDC can do this sort of testing.
- CDC recommends that clinicians only consider EV-D68 testing for patients with severe respiratory illness and when the cause is unclear.

- Respiratory illnesses can be caused by many different viruses and have similar symptoms. Not all respiratory illnesses occurring now are due to EV-D68. Anyone with respiratory illness should contact their doctor if they are having difficulty breathing, or if their symptoms are getting worse.

Treatment

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

Prevention

- There are no vaccines for preventing EV-D68 infections.
- You can help protect yourself from respiratory illnesses by following these steps:
 - Wash hands often with soap and water for 20 seconds, especially after changing diapers
 - Avoid touching eyes, nose and mouth with unwashed hands
 - Avoid kissing, hugging, and sharing cups or eating utensils with people who are sick
 - Disinfect frequently touched surfaces, such as toys and doorknobs, especially if someone is sick
- Since people with asthma are at higher risk for respiratory illnesses, they should regularly take medicines and follow guidance to maintain control of their illness during this time. They should also take advantage of influenza vaccine when available since people with asthma have a difficult time with respiratory illnesses.

What CDC is doing

- CDC is helping states with diagnostic and molecular typing for EV-D68.
- We are working with state and local health departments and clinical and state laboratories to
 - enhance their capacity to identify and investigate outbreaks, and
 - perform diagnostic and molecular typing tests to improve detection of enteroviruses and enhance surveillance.
- We are providing information to healthcare professionals, policymakers, general public, and partners in numerous formats, including MMWR, health alerts, websites, social media, podcasts, infographics, and presentations.

Guidance for Clinicians

Clinicians should

- consider EV-D68 as a possible cause of acute, unexplained severe respiratory illness, even if the patient does not have fever
- report suspected clusters of severe respiratory illness to local and state health departments. EV-D68 is not nationally notifiable, but state and local health departments may have additional guidance on reporting.
- 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.
- before sending specimens for diagnostic and molecular typing:
 - contact your state or local health department
- follow infection control measures

Additional information is provided in the CDC health alert released on September 12, 2014 (<http://emergency.cdc.gov/han/han00369.asp>).

Surveillance

- U.S. healthcare professionals are not required to report known or suspected cases of EV-D68 infection to health departments because it is not a nationally notifiable disease in the United States. Also, CDC does not have a surveillance system that specifically collects information on EV-D68 infections.

- No data is currently available regarding the overall burden of morbidity or mortality from EV-D68 in the United States. Any data CDC receives about EV-D68 infections or outbreaks are voluntarily provided by labs to CDC's National Enterovirus Surveillance System (NESS). NESS collects limited data, focusing on circulating types of enteroviruses and parechoviruses.

More information

- CDC enterovirus D68 website: <http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html>
- Severe Respiratory Illness Associated with Enterovirus D68 – Multiple States, 2014, Health Alert Network, September 12, 2014 (<http://emergency.cdc.gov/han/han00369.asp>)
- Severe Respiratory Illness Associated with Enterovirus D68 — Missouri and Illinois, 2014, MMWR, September 8, 2014 (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6336a4.htm?s_cid=mm6336a4_w)
- Clusters of Acute Respiratory Illness Associated with Human Enterovirus 68 --- Asia, Europe, and United States, 2008--2010, MMWR, September 30, 2011 (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6038a1.htm>)