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CDC HEALTH
ADVISORY**

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Severe Respiratory Illness Associated with Enterovirus D68 – Multiple States, 2014

Health Care Providers are encouraged to report clusters or suspected outbreaks of severe respiratory illness to their local health department or DHSS. Questions regarding EV-D68 testing can be directed to DHSS, Bureau of Communicable Disease Control and Prevention at 573-751-6113.

To help reduce the risk of infection with EV-D68, healthcare professionals should recommend the following:

- 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;
- Stay home when feeling sick, and obtain consultation from your health care provider

Summary: The Centers for Disease Control and Prevention (CDC) is working closely with hospitals and local and state health departments to investigate recent increases in hospitalizations of patients with severe respiratory illness. Enterovirus D68 (EV-D68) has been detected in specimens from children with severe illness in Missouri and Illinois. Investigations into suspected clusters in other jurisdictions are ongoing. The purpose of this HAN Advisory is to provide awareness of EV-D68 as a possible cause of acute unexplained respiratory illness, and to provide guidance to state health departments and health care providers. Please disseminate this information to infectious disease specialists, intensive care physicians, pediatricians, internists, infection preventionists, and primary care providers, as well as to emergency departments and microbiology laboratories.

Background

Enteroviruses are associated with various clinical symptoms, from mild to severe. EV-D68 causes primarily respiratory illness, although the full spectrum of disease remains unclear. EV-D68 was originally isolated in 1962 and, since then, has been reported rarely in the United States. Small clusters of EV-D68 associated with respiratory illness were reported in the United States during 2009–2010. There are no available vaccines or specific treatments for EV-D68, and clinical care is supportive.

In August 2014, a children's hospital in Kansas City, Missouri, and one in Chicago, Illinois, notified CDC of increases in pediatric patients examined and hospitalized with severe respiratory illness, including some admitted to pediatric intensive care units. Both hospitals also reported recent increases in detection of rhinovirus/enterovirus, in initial screening with a respiratory virus panel. Nasopharyngeal specimens from patients with recent onset of severe symptoms from both facilities were sequenced by the CDC Picornavirus Laboratory. EV-D68 was identified in 19 of 22 specimens from Kansas City and in 11 of 14 specimens from Chicago. Admissions for severe respiratory illness have continued at both facilities at rates higher than expected for this time of year. CDC has been notified by various states of similar clusters of respiratory illness, though confirmation of EV-D68 in these potential clusters is still under way.

Of these severely ill patients who were confirmed positive for EV-D68 from both hospitals, all presented with difficulty breathing and hypoxemia, and some with wheezing. Notably, most patients were afebrile at presentation and throughout the hospital course. Approximately two thirds of cases had a previous medical history of asthma or wheezing, but both hospitals reported some patients with no known underlying respiratory illness. Ages ranged from 6 weeks through 16 years, with median ages of 4 and 5 years in Kansas City and Chicago, respectively. Most patients were admitted to the pediatric intensive care unit. Of the 30 patients who were positive for EV-D68, two required mechanical ventilation (one of whom also received extracorporeal membrane oxygenation) and six required bilevel positive airway pressure ventilation. It should be noted that specimens from only the most severe cases have been typed at this time, and so these findings may not reflect the full spectrum of disease.

Additional details about these EV-D68 clusters can be found in the September 8, 2014, *MMWR* Early Release:

(http://www.cdc.gov/mmwr/preview/mmwrhtml/mm63e0908a1.htm?s_cid=mm63e0908a1_e)

Recommendations

Clinical Care:

- Health care providers should consider EV-D68 as a possible cause of acute, unexplained severe respiratory illness, even in the **absence of fever**.
- Although the findings to date have been in children, EV-D68 may also affect adults.

Laboratory Testing:

- Providers should consider laboratory testing of respiratory specimens for enteroviruses when the cause of respiratory infection in severely ill patients is unclear.
- Confirmation of the presence of EV-D68 requires typing by molecular sequencing.
- Providers may contact state or local health departments for further enterovirus typing. CDC is available for consultation.
- Health departments may contact CDC for further enterovirus typing.
- CDC is currently prioritizing respiratory specimens from patients with severe respiratory illness who are known to be positive for rhinovirus/enterovirus from initial screening assays.
- Please visit the CDC EV-D68 website (<http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html>) for information on specimen submission. Completion of a brief patient summary form is required with each specimen submission to CDC.

Infection Control:

- Routes of transmission for EV-D68 are not fully understood.
- Infection control guidelines for hospitalized patients with EV-D68 infection should include **standard** precautions, and **contact** precautions in certain situations, as is recommended for all enteroviruses (<http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>).
- As EV-D68 is a cause of clusters of respiratory illness, similar to rhinoviruses, **droplet** precautions also should be considered as an interim recommendation until there is more definitive information available on appropriate infection control.
- As EV-D68 is a non-enveloped virus, environmental disinfection of surfaces in healthcare settings should be performed using a hospital-grade disinfectant with an EPA label claim for any of several non-enveloped viruses (e.g. norovirus, poliovirus, rhinovirus). Disinfectant products should be used in accordance with the manufacturer's instructions for the specific label claim and in a manner consistent with environmental infection control recommendations (http://www.cdc.gov/hicpac/pdf/guidelines/eic_in_HCF_03.pdf).

Reporting:

- Providers should 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.

- Health departments may contact CDC for epidemiologic support. Please contact Dr. Claire Midgley (cmidgley@cdc.gov) with brief descriptions of possible clusters.

For more information:

For additional information, please consult the CDC enterovirus D68 website:
(<http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html>)

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