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Date: September 10, 2014

To: Local Health Departments, Tribal Health Agencies, DHS Regional Directors, and Infection Preventionists

From: Jeffrey P. Davis, MD, Chief Medical Officer and State Epidemiologist for Communicable Diseases and Emergency Response

Re: **Key Points: Enterovirus D68 (EV-D68) in the United States, 2014**

Nationally, several states have reported an increase in severe acute respiratory infections and hospitalizations among children and adolescents, and are working with the CDC to identify the causes of infection. Testing at the CDC has identified clusters of enterovirus D68 infection among children hospitalized in Kansas City, MO and Chicago, IL (more details below). The Wisconsin Division of Public Health is reaching out to local health departments and infection preventionists in Wisconsin with this memo to provide up-to-date information about enterovirus D68.

- For current national information please refer to the CDC EV-D68 website at: <http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html> and the article in the September 8, 2014 MMWR focusing on the clusters in Missouri and Illinois, "Severe Respiratory Illness Associated with Enterovirus D68" at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm63e0908a1.htm>.
- The situation is evolving quickly. CDC is gathering information 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 severe respiratory illness caused by EV-D68.
- CDC is communicating with multiple state health departments that are investigating suspected clusters of respiratory illness, and has received specimens for laboratory testing.
- Syndromic surveillance in Wisconsin indicates an increase in respiratory illness among children. Whether this is a seasonal increase (normal for this time of year) or an increase associated with EV-D68 is unknown at this time.
- No cases of EV-D68 infection have been confirmed in Wisconsin as of September 10, 2014.

General Points about Enteroviruses and Enterovirus D68 (EV-D68):**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.

- 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.
- Most enterovirus infections in the United States occur seasonally during the summer and fall.

Enterovirus D68 (EV-D68)

- EV-D68 is not a new (novel) virus; it was first identified in California during 1962.
- EV-D68 infections likely occur less commonly than infections caused by other enteroviruses.
- Compared with other enteroviruses, EV-D68 infection has rarely been reported in the United States.

Symptoms and Severity of EV-D68 Infection

- EV-D68 has been reported to cause mild to severe respiratory illness. However, the full spectrum of EV-D68 illness is not well-defined.
- Some common signs and symptoms may include low-grade fever (although many patients will not be febrile), cough, runny nose, sneezing and body/muscle aches.
- Signs and symptoms of more severe infections can include wheezing, difficulty breathing, and tachycardia.
- The occurrence of aseptic meningitis appears to be less frequent with EV-D68 than with other enteroviruses.
- Infected individuals generally self-recover without complications by treating symptoms. However, some individuals, particularly those with weakened immune systems or underlying medical conditions, such as asthma, may experience severe illness and require hospitalization with supportive therapy.
- Among children and adolescents in MO and IL with laboratory confirmed EV-D68 illnesses, the majority (> 65%) had a previous medical history of asthma or prior wheezing.

Transmission of EV-D68

- Because EV-D68 is not frequently identified, understanding the ways that EV-D68 is transmitted (spread) are not as well-understood as for other enteroviruses.
- EV-D68 primarily causes respiratory illness, and the virus can be found in 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 surfaces.
- EV-D68 can be spread by fecal-oral transmission, but the extent of transmission by this route is unknown.

Treatment

- There is no specific treatment for EV-D68 infections.
 - Many infections will be mild and self-limited, requiring only treatment of the symptoms.

- Some people with severe respiratory illness caused by EV-D68 may need to be hospitalized and receive intensive supportive therapy.
- No antiviral medications are currently available for treating of EV-D68 or other enteroviral infections.

Infection Control and Prevention

- There are no vaccines for preventing EV-D68 infections.
- Contact and droplet precautions in addition to the use of standard precautions should be used for hospitalized patients with confirmed or suspect EV-D68 infection.
- Alcohol hand-sanitizer gel is not effective against EV-D68.
- Individuals can help protect themselves 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 with a bleach based EPA registered hospital disinfectant, especially if someone is sick.

Guidance for Healthcare Professionals

Healthcare Professionals should:

- Consider EV-D68 as a potential cause of clusters of severe respiratory illness, particularly in young children.
- Consider laboratory testing of respiratory specimens for enteroviruses when the cause of infection in severely ill patients is unclear.
- Report cases and clusters of severe respiratory illnesses to state and local health departments for further guidance.

Surveillance

- Enteroviral infections are not specifically reportable in Wisconsin. However, suspected outbreaks of acute diseases (this would include clusters of EV-D68 infection) are reportable in Wisconsin.
- The CDC and the Wisconsin Division of Public Health (WDPH) do not have a surveillance system that specifically collects information on EV-D68 infections: WDPH does monitor virologic data, including rhinovirus/enterovirus data, collected by the Wisconsin State Laboratory of Hygiene.
- No data is currently available regarding the overall burden of morbidity or mortality resulting from EV-D68 infection in the United States. Any data CDC receives regarding 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.

Laboratory Testing for Enterovirus-D68 (EV-D68)

- Some hospitals can test for enteroviruses, but they are probably not able to perform enterovirus typing.
- State health departments or CDC can be approached for typing. Typing of enterovirus to detect EV-D68 is done only at the CDC.

- CDC is working with state and local health departments and clinical and state laboratories to enhance their capacity to identify and investigate outbreaks.
- Specimens can be submitted to the Wisconsin State Laboratory of Hygiene (WSLH) and tested for rhinovirus/enterovirus, and subsequently forwarded for additional testing at the CDC, if they meet one of the following criteria:
 - Inpatient pediatric clusters with severe respiratory illness (with or without fever)
 - Individual ICU-admitted pediatric cases of severe respiratory illness
- Preferred specimens from patients meeting the testing criteria include a nasopharyngeal or combined nasopharyngeal and oropharyngeal swab placed in viral transport media.
- Please use the attached requisition form to submit specimens to the WSLH at:

Wisconsin State Laboratory of Hygiene
c/o Virology Lab
465 Henry Mall
Madison, Wisconsin, 53706
- If a private or commercial laboratory has the ability to test for rhinovirus/enterovirus, we encourage the submission of specimens to that laboratory in lieu of the WSLH for rhinovirus/enterovirus testing.
- Specimens that are positive for rhinovirus/enterovirus using a Respiratory Virus Panel (RVP) PCR at a private or commercial laboratory may be forwarded to the WSLH for enterovirus typing at the CDC.

Questions or concerns regarding this memo can be directed to the Wisconsin Division of Public Health, Bureau of Communicable Diseases and Emergency Response, at 608-267-9003.