



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
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Commissioner

2014 DOHMH Advisory #33: Human Enterovirus 68 (EV-D68)

Please distribute to staff in the Departments of Pediatrics and Neonatal Medicine, Critical Care, Emergency Medicine, Family Medicine, Geriatric Medicine, Infection Control, Infectious Disease, Internal Medicine, Laboratory Medicine, Nursing, Neurology, and Obstetrics and Gynecology

- **During recent weeks, several parts of the United States, including New York City, have identified human enterovirus 68 (EV-D68) infections in children, causing respiratory illness severe enough to require hospitalization.**
- **NYC clinicians should consider EV-D68 in the differential diagnosis of respiratory illness requiring hospitalization in children.**
- **Guidance below is provided on infection control, EV-D68 diagnostic testing, and reporting requirements.**

September 17, 2014

Dear Colleagues,

Human enteroviruses commonly circulate in late summer and autumn months. Human enterovirus 68 (EV-D68), an infrequently reported cause of respiratory infection, is closely related to rhinovirus, and most hospital-based and commercially-available testing cannot distinguish between the two. EV-D68 usually causes common cold symptoms, although it can cause severe respiratory illness, especially in children.

Several parts of the United States, including New York City, have recently identified EV-D68 in children hospitalized with respiratory illness. Most laboratory-confirmed cases occurred in children with an underlying diagnosis of asthma, and some have required admission to intensive care units. Only a minority have presented with fever.

In New York City, laboratory confirmed EV-D68 has been identified in one case, although we expect that there are other cases in the city. We are monitoring hospital admissions to detect changes in the number of children admitted for respiratory illness, asthma, and influenza-like illness. Other more common respiratory viruses are also currently circulating, which are normally present this time of year, including rhinoviruses, other enteroviruses, and influenza.

NYC clinicians should:

- Employ **standard, contact, and droplet precautions** for hospitalized patients suspected of infection with EV-D68.
- Consider diagnostic testing for influenza and other respiratory viruses using available hospital-based or commercial testing for pediatric patients who are hospitalized with severe respiratory illness, recognizing that distinguishing EV-D68 from other respiratory viruses will have no impact on patient management, as treatment relies on supportive care.

After obtaining hospital-based or commercially-available test results that are positive for enterovirus or rhinovirus, the following should be considered for further specific EV-D68 testing at the Wadsworth Laboratory:

- Hospitalized pediatric patients with respiratory illness suspected to be due to EV-D68
- Suspected EV-D68 pediatric patients presenting with atypical or unexpected manifestations (e.g., neurological signs or symptoms)
- Suspected EV-D68 patients associated with respiratory outbreaks occurring in long-term care facilities or other residential settings where no other etiology has been identified, recognizing that enterovirus testing is often unavailable in these facilities

Refer to information on specific EV-D68 confirmatory testing available at Wadsworth Laboratory, included in the attached New York State Health Department guidance. When submitting specimens to Wadsworth Laboratory, please note on the requisition form in the space for "Submitting lab findings: Smear/Stain/Other results" the name of the assay used for respiratory viral testing.

- Report to the NYC Health Department's Provider Access Line at 866-692-3641 any clusters of severe respiratory illness, or unusual clinical presentations of suspected respiratory viral disease occurring in children or in group living settings (e.g., long-term care facilities). Health department clinicians are available at any time to discuss suspected clusters of severe respiratory illness or unusual clinical presentations of suspected respiratory viral disease.

As always, we appreciate your partnership in protecting the health of New Yorkers.

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Resources:

CDC MMWR 2011 - Clusters of Acute Respiratory Illness Associated with Human Enterovirus 68 --- Asia, Europe, and United States, 2008—2010 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6038a1.htm>

CDC MMWR 2014 - Severe Respiratory Illness Associated with Enterovirus D68 — Missouri and Illinois, 2014 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6336a4.htm?s_cid=mm6336a4_w

CDC EV-D68 Website <http://www.cdc.gov/non-polio-enterovirus/about/ev-d68.html>

September 10, 2014

TO: Healthcare Providers, Clinical Laboratories, Hospitals, and Local Health Departments (LHD)

FROM: New York State Department of Health (NYSDOH)
Bureau of Communicable Disease Control (BCDC)

HEALTH ADVISORY: ENTEROVIRUS D68

For healthcare facilities, please distribute immediately to the Infection Control Department, Emergency Department, Infectious Disease Department, Director of Nursing, Medical Director, Laboratory Service, and all patient care areas

SUMMARY

- Enterovirus D68 (EV-D68) is a type of non-polio enterovirus. Recently, infections in pediatric patients, including some severe infections, have been reported to the Centers for Disease Control and Prevention (CDC) from twelve states, most of them located in the Midwest.
- While providers are not required to report individual cases of suspected or confirmed enterovirus infection, including EV-D68 infection, existing NYSDOH surveillance systems maintain the capacity to identify unusual increases in the number of individuals seeking care in emergency departments for respiratory illness and outbreaks, unusual presentations or severity of communicable diseases.
- Testing for non-polio enteroviruses is commercially available. Public Health Laboratory testing at the NYSDOH Wadsworth Center is generally reserved for outbreaks.
- Thorough hand washing, respiratory etiquette, and surface disinfection can help reduce the risk of infection with EV-D68 and other respiratory and enteroviruses.
- NYSDOH encourages medical providers to report outbreaks or unusual clusters or presentations of respiratory illness to their LHD so that they may be investigated and their etiology confirmed.

BACKGROUND

In August 2014, hospitals in Kansas City, MO and Chicago, IL notified CDC of an increase in severe respiratory illness among children seen in their emergency departments and admitted to their facility. Testing by CDC identified EV-D68 in specimens from patients in both hospitals. Since then, ten additional states have reported pediatric respiratory illness outbreaks to CDC. Results of specimen testing from these outbreaks are pending.

CDC, NYSDOH and other state public health departments are working together to gather information to better understand EV-D68 and the illness caused by this virus; how widespread EV-D68 infections may be and the populations impacted; and whether other states are noting an increased incidence of severe respiratory illness, possibly due to EV-D68.

EPIDEMIOLOGY

Non-polio enteroviruses are common, causing between 10 to 15 million infections in the U.S. each year. Most occur during the summer and fall and may cause respiratory illness, febrile rash, aseptic meningitis or encephalitis. The majority of individuals infected with non-polio enteroviruses do not become symptomatic or only have mild illness. However, infants, children, and teenagers are at increased risk because they have not yet acquired immunity from previous exposures.

EV-D68 is one of many non-polio enteroviruses and is thought to occur less commonly than other enteroviruses. The virus can be found in respiratory secretions such as saliva, nasal mucus, or sputum of ill persons. EV-D68 is less studied than other enteroviruses. While the ways it is transmitted is not well understood, the virus is thought to spread from person to person when an infected person coughs, sneezes, or touches contaminated surfaces.

CLINICAL INFORMATION

EV-D68 primarily causes respiratory illness, although the full spectrum of disease remains unclear. As with other non-polio enteroviruses, many infections will be mild and self-limited, requiring only symptomatic care. However, some people with severe respiratory illness may need to be hospitalized and receive intensive supportive therapy. There is no specific treatment for EV-D68 infections.

Providers should consider EV-D68 as a potential cause of clusters of severe respiratory illness, particularly in young children. Symptoms in severe cases reported from the recent clusters in Kansas City and Chicago included difficulty breathing, hypoxemia and wheezing. More than half of these severe cases occurred in patients with a previous history of asthma or wheezing. A majority of patients in these clusters were afebrile.

LABORATORY TESTING

EV-D68 can be detected in respiratory specimens, such as nasopharyngeal swabs (NPS), oropharyngeal swabs (OPS) and sputum. Laboratory testing of respiratory specimens for enteroviruses should be considered when the cause of infection in severely ill patients is unclear. Respiratory specimens should be referred for enterovirus testing via the usual internal route for laboratory test requests at each facility. Infection with enteroviruses can be identified by virus culture and immunofluorescent staining or other confirmation technique, or by reverse transcription-polymerase chain reaction (RT-PCR) directly on specimens. It should be noted that most molecular enterovirus assays available at hospital, clinical, and commercial laboratories do not distinguish the enterovirus type. Additionally, many cannot distinguish enteroviruses from rhinoviruses, and some are only FDA-approved or validated for non-respiratory specimen types. Further, some tests have been demonstrated to be insensitive for the detection of EV-D68. Information needed on the specific test characteristics of the assay used at a facility should be obtained from that laboratory. However, it should be noted that distinguishing EV-D68 from any other enterovirus or rhinovirus infection, will generally have no impact on patient management.

The NYSDOH Wadsworth Center (WC) Virology Laboratory is CLEP-approved to perform enterovirus molecular typing, including for EV-D68, by conventional RT-PCR and dideoxysequencing. In order to assist in monitoring the current outbreak, selected specimens are being accepted at the WC Virology laboratory for testing.

Acceptable specimens are:

- respiratory tract specimens or cultured viral isolates that have tested positive for enterovirus or enterovirus/rhinovirus OR
- If enterovirus typing is being requested, the name of the enterovirus screening assay **must** be indicated on the Wadsworth Infectious Disease Requisition form. Preferred sample volume is ≥ 1.0 mL, minimum required volume is .5 mL. Specimens must be accompanied by a completed Infectious Disease Requisition (http://www.wadsworth.org/divisions/infdis/DOH-4463_061109_fillable.pdf) or requested by remote order for facilities with appropriate electronic access.
- Turnaround time for typing results is approximately one week.

PREVENTION

Vaccines against EV-D68 infections are not available. Providers should work with their asthmatic patients to help achieve optimal control of their condition. Additionally, the following actions can help protect patients from EV-D68 and other respiratory illnesses:

- Wash hands often with soap and water for 20 seconds, especially after changing diapers
- Avoid touching eyes, noses and mouths with unwashed hands
- Avoid kissing, hugging, and sharing cups or eating utensils with people who are ill
- Cover mouths and noses when coughing or sneezing
- Disinfect frequently commonly touched surfaces, such as toys and doorknobs, especially when someone is ill.

REPORTING

While providers are not required to report individual cases of suspected or confirmed EV-D68 infection, outbreaks or unusual presentations are reportable to the LHD where the patient resides. LHD contact information is available at <http://goo.gl/wfRgjb>.

Providers who are unable to reach their LHD can contact the NYSDOH Bureau of Communicable Disease Control at (518) 473-4439 during business hours or the NYSDOH Public Health Duty Officer at 1-866-881-2809 evenings, weekends and holidays.

ADDITIONAL INFORMATION

Additional information and guidance about non-polio enteroviruses is available from CDC at <http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html>. Providers with questions should contact their LHD or NYSDOH BCDC at bcdc@health.state.ny.us or (518) 473-4439.