



Guidance for Enterovirus D68 (EV-D68) Laboratory Testing

EV-D68 may affect both children and adults, so healthcare providers should consider EV-D68 as a possible cause of acute, unexplained severe acute respiratory illness (ARI), even in the absence of fever, for patients of any age.

Multiplex respiratory pathogen (RP) panels are now widely available in some hospital laboratories and at national reference laboratories. These multiplex RP panel assays are capable of testing for multiple bacterial and viral respiratory pathogens at once, but they are unable to subtype certain pathogens. Rhinoviruses (RV) and enteroviruses (EV) have a high degree of genetic similarity. Depending on the RP panel brand used for testing, results may be reported as “RV/EV-positive” or “EV-positive.” Test results from RP panels should be used to guide healthcare providers in developing treatment plans.

If the provider desires, specimens which have tested RV/EV-positive or EV-positive can be sent for further laboratory testing at the Centers for Disease Control and Prevention (CDC) for EV-D68 typing. Submitting specimens for typing at the CDC for EV-D68 is voluntary and is not required or recommended for routine cases. Priorities for testing are outlined below (page 2).

New Real-Time Reverse Transcription / Polymerase Chain Reaction (rRT-PCR) protocols recently released by the CDC can now be used by state and reference laboratories for specifically identifying EV-D68 (<http://www.cdc.gov/non-polio-enterovirus/hcp/EV-D68-hcp.html> and <http://www.cdc.gov/non-polio-enterovirus/downloads/EV-D68-RT-PCR-protocol.pdf>.) This rRT-PCR testing for EV-D68 typing is not presently available at the Kentucky Division of Laboratory Services. Providers ordering PCR testing from contract laboratories for the diagnosis of enterovirus infections should inquire as to whether that testing covers EV-D68.

Recommendations on Laboratory Testing for Enterovirus D68:

- Healthcare providers should rule out influenza, RSV, and other respiratory pathogens, and consider ordering a multiplex RP panel or EV-PCR test on a respiratory specimen from hospitalized patients with severe ARI, particularly those patients admitted to intensive care units. Multiplex RP panels and EV-PCR tests should be ordered from the hospital or national reference laboratory routinely used by the healthcare facility. These RP panels and EV-PCR test are widely available and do not need to be performed at the Kentucky Department for Public Health (KDPH) Division of Laboratory Services (DLS).
- Testing of respiratory specimens is available at DLS to support the investigation of severe acute respiratory disease outbreaks at long-term care facilities or other congregate settings.

The laboratory testing conducted by DLS is primarily for epidemiologic surveillance and investigation purposes, rather than diagnostic virology testing for individual patients. Such respiratory disease outbreaks should be reported to the local health department.

Recommendations on Submitting RV/EV-Positive or EV-Positive Respiratory Specimens for Enterovirus D-68 Typing:

Healthcare facility laboratory staff should consider the following priorities for sending RV/EV-positive or EV-positive specimens for EV-D68 typing. Contact the Reportable Disease Section at 502-564-3261 to receive authorization for shipping specimens to DLS.

- **First priority** would be to send specimens that were RP panel-positive for RV/EV or EV or PCR-positive for EV from hospitalized patients with ARI.
- **Second priority** would be to send specimens on high risk persons or events that were RP panel-positive for RV/EV or EV or PCR-positive for EV
 - **Pregnant women**
 - **Newborns**
 - **Deaths possibly linked to enterovirus**
 - **Cases with acute neurologic illness**
 - **Cases linked to outbreaks**

In order to submit a specimen to DLS for RV/EV or EV-D68 testing by CDC, the following must be completed.

1. Contact the KDPH Reportable Disease Section at 502-564-3261 to receive authorization to submit the specimen.
2. Complete DLS Form 275: <http://chfs.ky.gov/dph/info/lab/Forms.htm>.
 - a. If you are requesting RP panel testing as part of an acute respiratory disease outbreak investigation, write "Request for RP Panel Testing" on Form 275.
 - b. If you are requesting EV-D68 typing of a specimen that is RV/EV-positive or EV-positive, indicate the previous test results and write, "Request for Enterovirus Typing" on Form 275.
3. If your facility has access to the DLS Outreach System, enter a request for VIS (viral isolation). If your facility does not have access to the DLS Outreach System, an electronic request is not necessary.
4. Complete the "CDC Specimen Submission Form" for each specimen.
5. Complete the "Enterovirus D68 (EV-D68) Patient Summary Form" for each specimen.
6. Package specimen(s) as directed by DLS: <http://chfs.ky.gov/dph/info/lab/>.
7. Enclose all of the completed Forms with the specimen(s).
8. Ship specimen(s) as directed by DLS.

Enterovirus diseases are not routinely reportable in Kentucky unless associated with an outbreak. KDPH requests that medical providers voluntarily report EV-D68-positive cases to the local health department (LHD) serving the jurisdiction in which the patient resides.

If you have any questions regarding pre-authorization for specimen submission or the surveillance and epidemiology of EV-D68, please contact Sandy Kelly (sandye.kelly@ky.gov) or T.J. Sugg (tennis.sugg@ky.gov) at 502-564-3261.

If you have questions regarding laboratory specimen collection, packaging, and/or shipping of specimens to DLS; please contact Matthew Johnson (matthew.johnson@ky.gov) or Karim George (karim.george@ky.gov) at 502-564-4446.