

Information for Public Health Laboratories on Enterovirus-D68

Can enterovirus D68 (EV-D68) be detected by molecular respiratory virus panels (RVPs)? Does EV-D68 cross react with other viruses?

Yes, molecular RVPs that contain a pan-enterovirus (EV) target can detect EV-D68 but they cannot distinguish between different strain types. Molecular RVPs are available from a variety of manufacturers and are performed at a number of clinical and public health laboratories (PHLs) as well as most commercial laboratories.

A strain typing assay that differentiates between different EV strain types is available at CDC and a number of public health laboratories (PHLs).

EVs are closely related to rhinoviruses, so laboratories can expect to see some cross reactivity between pan-rhinovirus and pan-EV targets located on the same RVP.

Can EV-D68 be isolated by virus culture?

Yes, however, many EV grow very poorly in culture. To successfully grow a wide variety of EV, several cell lines (rhabdomyosarcoma (RD), HEp-2, and primary rhesus monkey kidney (RMK) cells) must be utilized.

How is EV-D68 differentiated from other enteroviruses?

There are several EV typing protocols available. The protocol primarily used at CDC and in PHLs involves performing a nested PCR on the primary specimen to amplify the RNA and Sanger sequencing the Viral Protein 1 (VP1) region of the genome to identify the EV type. Sequencing of the EV VP1 region can also be performed on viral isolates.

Are their commercial tests available to detect EV-D68?

There are many commercially available RVPs that detect EV. A partial list of commercially available RVPs can be found [here](#) on APHL's website. Contact the individual manufacturer for information on a specific panel's ability to detect EV.

There are no commercially available tests that strain type EV.

Which laboratories are performing the EV-D68 typing assay?

A strain typing assay that differentiates between different EV strain types is available at CDC and a number of state PHLs. At this time, public health departments without EV typing capabilities are asked to consult with CDC about prioritizing specimens for submission to receive the typing assay.

ARUP Laboratories also has Enterovirus typing capabilities but requires submission of a viral isolate for testing and does not accept primary specimens.

What should I do if RVPs are not widely available in my jurisdiction?

CDC will accept specimens from suspect clusters that have not been identified as EV/RV, but is prioritizing specimens on the basis of disease severity, i.e., EV/RV positive PICU cases are being tested first.

For clinical diagnostic test requests (i.e. those not identified with a cluster or severe illness) RVPs are available at most commercial reference laboratories.

What are the criteria for submitting specimens to CDC?

Presently CDC is prioritizing samples from patients with severe respiratory illness who are known to be positive for rhino/ enterovirus. For EV-D68 testing CDC would prefer a prior EV/RV positive test. They ask that submitted specimens be limited to those from patients with severe illness, (e.g., patients in the PICU).

Before sending specimens to CDC:

- contact your state or local health department, and
- consult with CDC by sending an email to wnix@cdc.gov

Check CDC's website frequently for updated guidance.

What specimen types should be collected and how should specimens be shipped to CDC?

Nasopharyngeal or oropharyngeal swabs are preferred. CDC's most recent specimen collection and transport guidance is available [here](#).

Prior to shipping please email Allan Nix (wnix@cdc.gov) and Shannon Rogers (boo9@cdc.gov) regarding what is being shipped and include the name, phone number and email address of the shipper.