



To: CAHAN San Diego Participants
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Enterovirus D68 Detected in Southern California Children with Respiratory Illness

This health alert describes the first cases of enterovirus D68 (EV-D68) respiratory infection confirmed among hospitalized children in Southern California and provides guidance and references on laboratory testing, reporting, and infection control for EV-D68. No outbreaks of EV-D68 have been reported in San Diego County at this time.

Southern California EV-D68 Cases

In early September 2014, Rady Children's Hospital San Diego (RCHSD) notified the San Diego County (SDC) Epidemiology Program of increases in pediatric patients examined and hospitalized with respiratory illness. The increase began in late August with some cases noted to have positive polymerase chain reaction (PCR) tests for rhinovirus (RhV). Nasopharyngeal and/or oropharyngeal specimens from 10 hospitalized patients were submitted for further testing and molecular sequencing at California Department of Public Health (CDPH) Viral and Rickettsial Disease Laboratory (VRDL).

EV-D68 was identified in specimens from four of 10 tested patients. The patients with EV-D68 were not epidemiologically linked; three are San Diego residents and one is a Ventura County resident. No EV-D68 positive patients had documented recent travel outside of California. Three reported a previous history of asthma; three were male and ages ranged from 2 to 13 years. All four patients presented with wheezing and respiratory distress or failure; three also had bronchospasm and hypoxemia. Notably, only one patient had a low-grade fever. All four patients were admitted to the pediatric intensive care unit (PICU); however, none required mechanical ventilation. All cases improved and were discharged to home.

The CDPH VDRL has other specimens from San Diego patients that are pending results at this time; more cases may be identified. RCHSD continues to have a greater than normal inpatient and emergency department census for respiratory illness compared to seasonal average; however, other San Diego treatment facilities are not currently reporting greater than normal pediatric caseloads. No local clusters of pediatric respiratory illness have been identified, except those associated with the ongoing [pertussis epidemic](#).

Background

Enteroviruses (EV) are associated with various clinical symptoms, including mild respiratory illness, febrile rash illness, and neurologic illness. EV-D68, however, primarily causes respiratory illness, although the full spectrum of the disease remains unclear. There are no available vaccines or specific treatments for EV-D68, and clinical care is supportive.

Since the original isolation of EV-D68 in California in 1962, it has been rarely reported in the United States. The National Enterovirus Surveillance System received 79 EV-D68 reports during 2009–2013, with small clusters of EV-D68 respiratory illness noted 2009–2010.

In mid-August 2014, the Centers for Disease Control and Prevention (CDC) [received reports](#) of an increased number of cases of severe respiratory illness in children in two separate clusters occurring in Kansas City, Missouri and Chicago, Illinois. Some children required PICU admission. Most hospitalized patients were less than five years of age, and most had a history of asthma. Patients presented with wheezing, or difficulty breathing, with hypoxia. Of note, only about 20% of patients were febrile. Several patients required mechanical ventilation or bilevel positive airway pressure ventilation. Initial testing at hospitals identified enterovirus or rhinovirus. Subsequent testing at CDC identified EV-D68.

In addition to the cases in California, a total of 153 people from 18 states have been confirmed to have EV-D68 respiratory illness since mid-August. No deaths have been reported. Updated information from the CDC may be found at: <http://www.cdc.gov/non-polio-enterovirus/about/EV-D68-states.html>.

Laboratory Testing for EV-D68

Local clinicians are encouraged to consider EV-D68 as a possible cause of acute, unexplained severe respiratory illness, especially with wheezing, in patients under the age of 18 years. Respiratory specimens (*e.g., nasopharyngeal swabs, oropharyngeal or throat swabs, endotracheal aspirates, or other respiratory tract specimens*) should be collected and tested for multiple viral pathogens, including influenza, rhinovirus (RhV) and/or EV.

Several FDA-approved multiplex respiratory virus panel assays are able to detect RhV and/or EV; however, these assays do not determine EV type. Luminex xTAG® Respiratory Viral Panel and BioFire FilmArray® RVP can detect both RhV and EV; Genmark DX eSensor® Respiratory Viral Panel only detects RhV. Testing for multiple viral pathogens is available at select local public health laboratories, commercial laboratories, and certain other hospital laboratories. When requesting EV screening from a laboratory, verify that the assay being used covers detection of EV.

Specimens from patients under 18 years of age who are hospitalized for intensive care that test positive for RhV or EV, by PCR, should be sent to San Diego County Public Health Laboratory (SDCPHL). These will be forwarded to CDPH VRDL for confirmation and further typing to identify EV-D68. Specimens should be accompanied by an **EV-D68 Surveillance Submittal Form** available at: <http://tinyurl.com/on94zl7> and at the VRDL home page under “Current VRDL Specimen Submittal forms” (<http://www.cdph.ca.gov/programs/vrdl/Pages/CurrentVRDLSpecimenSubmittalforms.aspx>). Technical questions about laboratory testing may be addressed to SDPCHL at 619-692-8500. Questions about whether testing is appropriate may be addressed to SDC Epidemiology Program at 619-892-8499.

Reporting of Suspected EV-D68 Cases and Severe Respiratory Illness Clusters

Local clinicians are encouraged to report suspect cases of EV-D68 to SDC Epidemiology Program, especially when EV-D68 testing is being considered or has been requested. Any clusters or outbreaks of severe respiratory illness, regardless of the setting where they occur or the age group involved, should also be reported. Specimens may be collected and forwarded to SDPCHL for influenza testing. If influenza testing is negative, the specimens will be forwarded to CDPH VRDL for non-influenza respiratory virus testing, including RhV and EV.

Infection Control and Other Recommendations for Healthcare Providers

- Standard and contact precautions are typically recommended for patients with enterovirus infections. However, since EV-D68 is predominantly a respiratory virus, droplet precautions may also be considered.
- Alcohol-based hand sanitizers have limited effectiveness against enteroviruses and are not recommended for hand hygiene by healthcare personnel providing care to EV-D68 patients.
- Healthcare personnel who are ill or suspect they might have a viral respiratory illness should follow their organization policies concerning work attendance.

In addition, healthcare providers are recommended to ensure that patients with asthma have an [asthma action plan](#). Use of this plan should be reinforced, including adherence to prescribed long-term control medication. Those who are experiencing an exacerbation should be encouraged to seek care early.

More information on EV-D68 for healthcare providers is available on the CDC EV-D68 website: <http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html>. The CDC webpage for non-polio enteroviruses can be accessed at: <http://www.cdc.gov/non-polio-enterovirus/>. Questions may be directed to SDC Epidemiology Program at 619-692-8499.

Thank you for your continued participation.

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