

Edwin M Lee Mayor

Communicable Disease Control & Prevention

sfdph.org/cdcp

Tel (415) 554-2830 Fax (415) 554-2848

Health Advisory

October 3, 2014 (Updated from September 24, 2014)

Enterovirus-D68 and Acute Flaccid Paralysis

Updated Recommendations for Evaluation, Laboratory Submission & Infection Control

The San Francisco Department of Public Health (SFDPH) provides this guidance based on current information. For the most up-to-date information, visit <u>www.sfcdcp.org</u>. Recommendations may change, and SF recommendations may differ from those issued by Centers for Disease Control & Prevention (CDC) or California Department of Public Health (CDPH).

<u>SITUATION</u>: The San Francisco Department of Public Health was notified today that a child less than 18 years of age with severe respiratory illness was confirmed to have Enterovirus-D68. The patient was discharged in good condition. Enterovirus-D68 (EV-D68) continues to be identified nationwide in cases with severe respiratory illness. Enterovirus-D68 has been confirmed in several children with acute flaccid paralysis in Colorado.

BACKGROUND: Non-polio enteroviruses commonly circulate in the summer and fall, and can cause respiratory and gastrointestinal illness, rash and, very rarely, neurologic illnesses. EV-D68 is one of many non-polio enteroviruses. Recently, several children in Colorado with acute focal limb weakness (with or without cranial nerve dysfunction), and with correlating lesions on magnetic resonance imaging (MRI) of the spinal cord and brainstem, have tested positive for EV-D68. Most, but not all, reported a febrile respiratory illness in the 2 weeks preceding development of neurologic symptoms. (See http://www.bt.cdc.gov/han/han00370.asp)

Since mid-August 2014, patients with severe respiratory illness due to EV-D68 have been hospitalized in most states, including California. Most have been afebrile, and many have had wheezing. There is no vaccine or specific treatment for EV-D68, and clinical care is supportive.

ACTIONS REQUESTED OF CLINICIANS:

- **1.** Consider EV-D68 as a possible cause of (a) acute, unexplained severe respiratory illness, or (b) acute flaccid paralysis, especially in children.
- 2. **Report:** (a) patients with acute neurologic illness meeting the criteria below or (b) clusters of severe respiratory illness, in persons of any age. Report 24/7 to SFDPH Communicable Disease Control Unit (CDCU) at 415-554-2830.
- **3.** Test respiratory specimens for enterovirus and other respiratory viruses such as influenza at your hospital or commercial laboratory, in hospitalized patients 18 years and under with severe respiratory illness. Confirmatory testing and subtyping to identify EV-D68 must be coordinated through SFDPH CDCU.
- **4. Contact CDCU** (415-554-2830) **BEFORE submitting specimens for EV-D68 testing.** CDCU will coordinate submission of specimens for EV-D68 testing. See guidelines below for testing eligibility and instructions for specimen processing.
- 5. Implement standard, contact, and droplet precautions when caring for known or suspected EV-D68 patients.

ELIGIBILITY FOR TESTING:

Testing for EV-D68 takes a <u>minimum 14 days</u> at the California Department of Public Health (CDPH) Viral and Rickettsial Disease Laboratory (VRDL) and includes real-time reverse transcription polymerase chain reaction (rRT-PCR) testing for enterovirus, followed by sequence analysis to identify EV-D68. SFDPH-

CDCU will help determine appropriateness of testing in individual cases, in consultation with CDPH. Testing criteria may evolve as the epidemiology of EV-D68 in California is better understood.

<u>Patients with Respiratory Illness</u>: Health care providers should consider EV-D68 as a possible cause of acute, unexplained severe respiratory illness, even in the **absence of fever**. Priority for EV-D68 testing:

Children age ≤ 18 years with severe respiratory illness who are hospitalized <u>AND</u> who have tested positive for rhinovirus and/or enterovirus by PCR at a commercial or hospital laboratory.

Since many commercially available PCR tests cannot distinguish enteroviruses from rhinoviruses, patients with enterovirus- or rhinovirus-positive specimens should be considered for EV-D68 testing. Patients should also be tested for **influenza and respiratory syncytial virus (RSV)**, since both can cause severe respiratory illness in young children, and early treatment of influenza with antivirals can reduce morbidity and mortality.

<u>Patients with Neurologic Symptoms</u>: Health care providers should consider EV-D68 as a possible cause of acute flaccid paralysis, particularly in patients aged ≤ 21 years. Criteria for testing include patients who:

Have acute flaccid paralysis, including absent or significantly diminished reflexes in one or more limbs, without a confirmed traumatic, neoplastic, arboviral or vascular etiology

AND MRI shows gray matter involvement of the spinal cord or EMG shows anterior horn disease

Prior enterovirus/rhinovirus positive result is not required for testing for patients meeting these clinical criteria.

LABORATORY SUBMISSION:

Contact SFDPH-CDCU **BEFORE submitting specimens for EV-D68 testing** (415-554-2830; after hours follow voicemail instructions to contact the on-call physician). Submission of specimens from SF medical providers or facilities will be coordinated by SFDPH CDCU. **Do not send specimens directly to CDPH or CDC.**

- <u>Respiratory:</u> A minimum of 0.7 mL of original respiratory specimen (e.g., nasopharyngeal swab, oropharyngeal swab, endotracheal aspirate) is required for EV-D68 testing.
- <u>Neurologic:</u> see <u>www.cdph.ca.gov/programs/vrdl/Pages/NeurologicSurveillanceTesting.aspx</u>. Collect as close to onset date as possible: CSF (2-3cc); acute phase serum, collected before treatment with IVIG (2-3cc in red or tiger-top tube); respiratory specimen (see above); stool (quarter-sized in sterile container).

INFECTION CONTROL:

Routes of transmission for EV-D68 are not fully understood. Infection control guidelines for hospitalized patients with EV-D68 infection should include **standard and contact precautions**, as are recommended for all enteroviruses, plus **droplet precautions** due to the predominant respiratory nature of EV-D68.

As EV-D68 is a non-enveloped virus, environmental disinfection of surfaces in healthcare settings should be performed using a hospital-grade disinfectant with an EPA label claim for any of several non-enveloped viruses (e.g. norovirus, poliovirus, and rhinovirus).

The usual incubation period for enteroviruses is 3-6 days. Fecal shedding of enteroviruses can continue for several weeks or months after onset of infection, but respiratory tract shedding usually is limited to 1-3 weeks or less. Viral shedding can occur without signs of clinical illness.

If a single room is not available, immunocompetent patients with similar symptoms can be cohorted. However, when available, single patient rooms are preferred since clinical presentations can be caused by more than one infectious agent. In addition, infants and children are less able to contain body fluids, thereby increasing infection transmission risks for patients and healthcare personnel.

ADDITIONAL RESOURCES:

California Department of Public Health: <u>http://www.cdph.ca.gov/Pages/NR14-080.aspx</u>

http://www.cdph.ca.gov/programs/vrdl/Pages/NeurologicSurveillanceTesting.aspx

Centers for Disease Control & Prevention: <u>http://www.cdc.gov/non-polio-enterovirus/about/ev-d68.html</u>