



County of Erie

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DEPARTMENT OF HEALTH

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COMMISSIONER OF HEALTH

HEALTH UPDATE #277 COXSACKIEVIRUS MYOCARDITIS IN CHILDREN

OCTOBER 21, 2010

Please distribute to Emergency Departments, Infection Control Departments, Infectious Disease Departments, Pediatrics, Director of Nursing, Medical Director, Laboratory Director, and all patient care areas.

Attached is a Health Alert from the New York City Department of Health and Mental Hygiene regarding Coxsackievirus Myocarditis in Children. Please distribute as appropriate.

Health Category Definitions:

Health Alert FLASH: conveys the highest level of importance due to a large-scale, catastrophic public health emergency; warrants immediate action or attention

Health Alert Priority: conveys the highest level of importance; warrants immediate action or attention to a health problem or situation

Health Advisory: provides important information for a specific incident or situation; may not require immediate action

Health Update: provides updated information regarding an incident or situation; no immediate action necessary

The ECDOH Health Alert & Advisory System is an e-mail notification system designed to alert community partners about important health related information. **You can sign up to receive alerts & advisories at www.erie.gov/health/services/health_professionals.asp.**

The Erie County Department of Health does not provide medical advice. The information provided herein and on the Erie County Department of Health website is not intended as a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your personal physician or other qualified health provider with any questions you may have regarding a medical condition or issue. Never disregard professional medical advice or delay in seeking it because of the content found on the Erie County Department of Health website or this correspondence.



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Thomas Farley, M.D., M.P.H.
Commissioner

2010 Advisory # 24 Coxsackievirus Myocarditis in Children

Please Distribute to All Clinical Staff in Pediatrics, Pediatric Infectious Diseases, Pediatric Cardiology, Pediatric Emergency Medicine, Family Medicine, Laboratory Medicine, Pathology and Infection Control Staff

- **Two deaths from acute myocarditis have been confirmed in New York City children**
 - **Coxsackievirus A9 was isolated in both cases**
- **The Health Department is reminding pediatric providers that enteroviruses are circulating in NYC, as is usual for this time of year, and can cause myocarditis**

October 19, 2010

Dear Colleagues,

The Health Department is investigating reports of coxsackievirus myocarditis in children. Since late September 2010, deaths from myocarditis have been confirmed in two New York City children younger than 10 years old, and coxsackievirus A9 has been isolated from their clinical and autopsy specimens.

Coxsackievirus is an enterovirus belonging to the picornavirus family. Enteroviral infections are common during the summer and fall, and transmission can be fecal-oral, respiratory, perinatal, or from contaminated fomites. In addition to myocarditis, coxsackievirus can cause a range of illnesses including hand-foot-and-mouth disease, pharyngitis, stomatitis, gastroenteritis, meningitis, encephalitis, and hemorrhagic conjunctivitis. Because coxsackievirus or other enteroviral infections are not reportable diseases, it is not known whether there is an increased incidence of coxsackievirus A9 in New York City at the present time. As there is no specific treatment or vaccine, preventive measures are recommended to include: minimizing direct contact with respiratory secretions and feces, and promotion of careful hand-washing and cleaning of contaminated surfaces.

Brief summary of the two recent fatal cases reported to the Health Department:

Case #1: A previously healthy toddler presented to an emergency department (ED) in late September with a one-day history of fever, leg pain, and vomiting. Physical examination was reportedly unremarkable, and the peripheral white blood cell count was elevated. The child was diagnosed with a presumed viral syndrome and myositis and discharged home several hours later. The patient returned to the ED within hours and appeared pale and tachypneic, with a chest x-ray showing pulmonary edema. The patient deteriorated rapidly and went into cardiac arrest, expiring a few hours later. There was evidence of acute myocarditis on autopsy, and coxsackievirus A9 was isolated from a stool specimen.

Case #2: In late September, a previously healthy school-aged child presented to an ED with a history of vomiting and abdominal pain. The child was diagnosed with gastroenteritis and discharged home. Later that same day, the child returned to the ED with the same symptoms. The child was hospitalized, and

within 36 hours of returning to the ED, went into cardiac arrest and expired. Autopsy also showed acute myocarditis, and coxsackievirus A9 was isolated from heart tissue, pericardial fluid and peritoneal fluid.

Myocarditis has been associated with coxsackievirus B serotypes as well as with multiple other viruses; it has not been reported previously in association with coxsackievirus A9. The clinical presentation of myocarditis in children is broad, ranging from sub-clinical cardiac dysfunction to acute heart failure. Fulminant myocarditis can be life-threatening. Patients may require extracorporeal life support to maintain patients with cardiovascular collapse or intractable arrhythmias. Early recognition may alter the course in these patients. The diagnosis of myocarditis in children is challenging given a range of clinical presentations that may mimic more common pediatric diseases, such as respiratory illnesses (e.g., tachypnea, wheezing) and gastroenteritis (e.g., vomiting). In one center's six-year retrospective review of 31 pediatric myocarditis cases, the most common presentation was respiratory illness, with some of the older children (≥ 10 years) presenting with cardiac complaints; still other children had gastrointestinal or other clinical presentations.¹ Although there are no specific screening tests for myocarditis, if the diagnosis is suspected, chest radiographs and an electrocardiogram may identify patients who would benefit from additional monitoring and/or diagnostic evaluation. However, EKGs and CXRs may be normal, especially early on in the clinical presentation; therefore, as always, healthcare providers should use clinical judgment.

Please feel free to contact the Bureau of Communicable Disease (BCD) with any questions. As always, any unusual cluster of illness should be reported to BCD as well:

During business hours, call:
By fax

212-788-9830
212-788-4268

Sincerely,

Marci Layton

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Assistant Commissioner
Bureau of Communicable Disease

Ellen Lee

Ellen Lee, MD
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Bureau of Communicable Disease

¹ Freedman SB, Haladyn JK, Floh A, et al. Pediatric myocarditis: Emergency department clinical findings and diagnostic evaluation. *Pediatrics*, 2007 Dec;120(6):1278-85.