

Health Advisory

COVID-19 Update: Multisystem Inflammatory Syndrome in Children (MIS-C)

May 29, 2020

A new syndrome, likely related to infection with the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), has been recently recognized among school-aged children in the United Kingdom and the United States. This new syndrome is characterized by fever and inflammatory changes of multiple organ systems, including the heart, gastrointestinal tract, liver, kidneys, and/or skin. Laboratory testing often reveals evidence of significant inflammation such as elevated serum concentrations of erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP). Many features of the described cases resemble those present in Kawasaki or Toxic Shock Syndrome. Children are typically ill with this syndrome and require hospitalization for dehydration, hypotension, or impaired cardiac function. At least half of reported cases in children have required intensive care.

SUMMARY POINTS

- A new inflammatory syndrome (MIS-C) that may be associated with COVID-19 has been identified among children.
- Providers should suspect MIS-C in hospitalized children with fever, inflammation and multi-organ dysfunction.
- Report all suspected and confirmed cases of MIS-C within 24 hours of recognition.

At present, the nature of the association between this novel syndrome and infection with SARS-CoV-2 remains uncertain. Children with this syndrome rarely present with respiratory symptoms of COVID-19, such as cough or shortness of breath. However, virtually all identified patients have had 1) evidence of COVID-19 infection by PCR or antibody assay, or 2) recognized exposure to SARS-CoV-2 during the 4 weeks prior to symptoms onset. To aid our ability to better understand this emerging syndrome and its potential association with an antecedent COVID-19 infection, the Centers for Disease Control and Prevention has issued an advisory with a case definition for MIS-C (previously known as Pediatric Multisystem Inflammatory Syndrome) and a request to report all children age <21 years who fulfill case criteria. As such, on May 14, 2020, the Philadelphia Board of Health approved the addition of this condition to the list of reportable diseases and conditions in Philadelphia.

Providers should report all persons 0-21 years of age who present with the following signs and symptoms:

- a. fever; and
- b. laboratory evidence of inflammation (e.g., elevated inflammation markers); and
- c. features of Kawasaki or Toxic Shock Syndrome, or evidence of clinically severe hospitalized illness such as single or multi-organ dysfunction (shock, cardiac, respiratory, renal, gastrointestinal or neurological disorder); and
- d. exclusion of any other microbial cause, including bacterial sepsis, staphylococcal or streptococcal shock syndromes; and
- e. SARS-CoV-2 PCR positive, serology positive, or PCR negative with COVID-19 exposure* in the past 4 weeks.

* exposure defined as prolonged contact with a COVID-19 confirmed case including household contacts

Health providers should report all suspected and confirmed cases within 24 hours of recognition to PDPH by phone at 215-685-6741 (after hours: 215-686-4514). Hospitals may also report electronically using existing mechanisms for hospitalized case reporting. When reporting, please provide a brief clinical summary including complications, treatment given, and pertinent laboratory results (e.g., SARS-CoV-2 PCR and IgG, inflammation markers).

The case report form can be found here:

https://hip.phila.gov/Portals/default/HIP/EmergentHealthTopics/nCoV/PDPH_MIS-C_ReportForm_Fillable.pdf

For additional information about MIS-C, please see: <https://emergency.cdc.gov/han/2020/han00432.asp>