Key Points:

- Several states are reporting cases compatible with multi-system inflammatory syndrome in children.
- At least three children in New York have died as of 5/10/2020.
- The syndrome appears to be characterized by persistent fever, severe inflammation, evidence of poor function in a single organ or many organs, and other specific clinical criteria and laboratory features, in the absence of other known infections. Some of these children have features that can be seen in Kawasaki disease, and some have clinical and laboratory signs of toxic shock syndrome.
- This inflammatory syndrome may occur days to weeks after acute COVID-19 illness. A majority of children have had virologic or serologic evidence of COVID-19 infection, but approximately one-third have not.
- Providers suspecting a case of MIS-C should perform both virologic and serological testing for SARS-CoV-2 RNA by PCR and antibodies by serology. Serum for SARS-CoV-2 antibodies should ideally be collected prior to the administration of intravenous immunoglobulin.
- Early recognition and specialist referral are essential, including to critical care if warranted. Cases frequently require intensive care unit admission for cardiac and/or respiratory support.

Immediately report any patient who meets the following criteria to the Alabama Department of Public Health using the Communicable Disease REPORT Card, and select Case of Public Health Importance.

- An individual aged < 21 years; and
- Fever >100.4 degrees F for ≥24 hours; and
- Laboratory evidence of inflammation, including, but not limited to: neutrophilia, elevated CRP, lymphopenia, CRP, ESR, fibrinogen, procalcitonin, d-dimer, ferratin, LDH, IL-6, hypoalbuminemia; and
- Evidence of clinically severe hospitalized illness such as single or multi-organ dysfunction (shock, cardiac, renal, hematologic, gastrointestinal or neurological disorder). Isolated respiratory disease does not meet criteria

Clinical presentation:

A multi-system inflammatory syndrome recently reported by authorities in the United Kingdom is also being observed among children and young adults in the United States. Clinical features vary, depending on the affected organ system, but have been noted to include features of Kawasaki disease or features of toxic shock syndrome; however, the full spectrum of disease is not yet known. Only severe cases may have been recognized at this time. This inflammatory syndrome may occur days to weeks after acute COVID-19 illness.
Inflammatory markers may be elevated (CRP, troponin etc.), and fever and abdominal symptoms may be prominent. Rash also may be present. Myocarditis and other cardiovascular changes may be seen.

Some patients have developed cardiogenic or vasogenic shock and required intensive care. Patients with this syndrome who have been admitted to pediatric intensive care units have required cardiac and/or respiratory support.

The syndrome may include:

- A child presenting with persistent fever, severe inflammation (e.g., neutrophilia, elevated C-reactive protein and lymphopenia), and evidence of single or multi-organ dysfunction (shock, cardiac, respiratory, renal, gastrointestinal, or neurological disorder). This may include children meeting full or partial criteria for Kawasaki disease.
- Exclusion of any other microbial cause, including bacterial sepsis, staphylococcal, or streptococcal shock syndromes, and infections associated with myocarditis such as enterovirus. Clinicians should not delay seeking expert advice while waiting for results of these investigations.

If the above-described inflammatory syndrome is suspected, pediatricians should immediately refer patients to a specialist in pediatric infectious diseases, pediatric cardiology, rheumatology, and/or critical care, as indicated.

Early diagnosis and treatment of patients meeting full or partial criteria for Kawasaki disease is critical to preventing end-organ damage and other long-term complications. Patients meeting criteria for Kawasaki disease should be treated with intravenous immunoglobulin and aspirin.

Health care providers should report suspected cases of MIS-C, also referred to as pediatric multi-system inflammatory syndrome or PMIS, in patients who are under 21 years of age to the Alabama Department of Public Health (ADPH) by completing the online Communicable Disease REPORT Card, and selecting a Case of Public Health Importance. If consult with an ADPH medical officer is desired, physicians can call 1-800-338-8374.

Please visit CDC’s Health Advisory: Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with Coronavirus Disease 2019 (COVID-19) for the latest information on COVID-19 for Healthcare Providers.