



LAC DPH Health Update: Multisystem Inflammatory Syndrome in Children (MIS-C)

July 18, 2020



*This message is intended for all healthcare providers in Los Angeles County.
Please distribute as appropriate.*

Key Messages

- A multisystem inflammatory syndrome in children (MIS-C) under 21 years of age characterized by persistent fever, inflammation, and multiorgan dysfunction has continued to be reported by hospitals in the United States including Los Angeles County. Updated case counts and clinical information are provided in this communication.
- Although serious complications of MIS-C have been reported and we continue to conduct monitor for cases, currently MIS-C remains an uncommon complication of SARS-CoV-2 infections.
- Providers should actively consider MIS-C on the differential for pediatric patients who present with compatible clinical presentation as described below.
- Healthcare providers are asked to report possible cases by phone within one working day.
- The CDC held a webinar, *Clinical Management of Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19* on July 16. [Slides](#) and a [recording](#) are available.

Situation

Since March 1, 2020 the Los Angeles County Department of Public Health (LAC DPH) has identified 15 cases meeting CDC criteria (see CDC case definition below) for MIS-C (not including residents of Long Beach or Pasadena).

The 15 LAC case-patients have a median age of 8 years, 7 months; 40% were 0-5 years of age, 40% were 6-12 years of age, and 20% were 13-20 years of age. The majority of cases (73%) were of Hispanic ethnicity. Zero case-patients have died. With more cases of COVID-19 being identified in the community, LAC DPH is continuing to monitor for increases in MIS-C.

The CDC has [identified](#) 342 case-patients with MIS-C as of July 15, 2020, with a median age of 8.0 years (range 0-20). 81% of cases were 1-14 years of age.

New York State [identified](#) 99 case-patients of MIS-C reported between March 1 and May 10, 2020, 31% were in the 0-5 years of age range, 42% were 6-12 years of age, and 26% were 13-20 years of age. Two case-patients died. The peak in the number of MIS-C cases followed the peak in the number of cases of laboratory-confirmed SARS-CoV-2 infection by 31 days.

At this time, we do not know why MIS-C develops in some children and not others.

Clinical presentation

Patients with MIS-C have presented with a persistent fever, fatigue, and a variety of signs and symptoms including multiorgan (e.g., cardiac, gastrointestinal, renal, hematologic, dermatologic, neurologic) involvement, and elevated inflammatory markers.

Not all children will have the same signs and symptoms, and some children may have symptoms not listed here. A child under investigation for MIS-C should also be evaluated for other infectious (e.g. septic shock) and non-infectious (e.g., malignancy) etiologies that may explain the clinical presentation.

MIS-C may begin weeks after a child is infected with SARS-CoV-2. The child may have been infected from an asymptomatic contact and, in some cases, the child and their caregivers may not even know they had been infected.

Most children diagnosed with MIS-C have had laboratory evidence of either past or current COVID-19 infection and the majority have had no documented underlying medical conditions.

Information on laboratory evaluation, treatment, follow-up, and other clinical considerations for patients with suspected or diagnosed MIS-C have been provided by the [CDC](#) and a recently published guidance from the [American College of Rheumatology](#) which also compares and contrasts features of MIS-C and Kawasaki Disease as well as providing guidance evaluation and treatment.

Laboratory Testing

Testing aimed at identifying laboratory evidence of inflammation as listed in the Case Definition section (below) is warranted. Similarly, SARS-CoV-2 detection by RT-PCR is indicated.

Where feasible, SARS-CoV-2 serology testing is suggested, even in the presence of positive RT-PCR or antigen testing. Any serology testing should be performed prior to administering IVIG or any other exogenous antibody treatments.

Actions Requested of Providers

- **Immediately refer patients with a clinical picture of MIS-C to a specialist in pediatric infectious diseases, rheumatology, cardiology, and/or critical care, as indicated.** Early diagnosis and treatment of patients is critical to preventing end-organ damage and other long-term complications.
- **Consider testing any patient for whom MIS-C is a clinical consideration for acute COVID-19 infection (i.e. RT-PCR) and for prior COVID-19 infection (antibody testing).**
- **Patients under investigation for MIS-C should also be evaluated for other infectious and non-infectious etiologies that could explain their clinical presentation. This work-up should not be delayed pending COVID-19 PCR or serology testing.**
- **Report possible cases to your appropriate Department of Health (see CDC case definition below).** Note: patients should be reported regardless of SARS-CoV-2 PCR test result.

CDC Case Definition for Multisystem Inflammatory Syndrome in Children (MIS-C)

- An individual aged <21 years presenting with fever,ⁱ laboratory evidence of inflammation,ⁱⁱ and evidence of clinically severe illness requiring hospitalization, with multisystem (>2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological); **AND**
- No alternative plausible diagnoses; **AND**
- Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or COVID-19 exposure within the 4 weeks prior to the onset of symptoms.

ⁱ Fever >38.0°C for ≥24 hours, or report of subjective fever lasting ≥24 hours

ⁱⁱ Including, but not limited to, one or more of the following: an elevated C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, d-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin.

Additional comments:

- Some individuals may fulfill full or partial criteria for Kawasaki disease but should be reported if they meet the case definition for MIS-C.
- Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection.
- **Please note that CDC and LAC DPH case definition for MIS-C differs from the case definition published by the World Health Organization (WHO).**

Reporting

Providers are asked to report possible cases of Pediatric Multi-System Inflammatory Syndrome by phone within 1 working day.

Los Angeles County DPH Acute Communicable Disease Control:

- Call 888-397-3993 or 213-240-7821.

Long Beach Health and Human Services:

- Call 562-570-4302.

Pasadena Public Health Department:

- Call 626-744-6089.

Resources:

- **LAC DPH MIS-C** webpage <http://publichealth.lacounty.gov/acd/ncorona2019/MISC.htm>
- **CDC MIS-C:** [Webpage for providers](#) [Webpage for parents](#)
- **CDC webinar**, *Clinical Management of Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19 (7/16/20)* [Slides](#) [Recording](#)

Visit the LAC DPH COVID-19 Provider [website](#) for up-to-date resources and guidance, Refresh your browser to view the latest versions. publichealth.lacounty.gov/acd/ncorona2019/

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