



**ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
PUBLIC HEALTH DEPARTMENT**

Division of Communicable Disease Control and Prevention
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COVID-19 Health Advisory – June 17, 2020

Replaces Health May 20, 2020 Health Advisory

Updated Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with Coronavirus Disease 2019 (COVID-19) Healthcare Provider Reporting Requirements for Alameda County

Situation

In accordance with a recent CDC [health advisory](#) and as first discussed in the 5/20/20 ACPHD Health Advisory, Multisystem Inflammatory Syndrome in Children (MIS-C) associated with COVID-19 is reportable to Alameda County Public Health Department (ACPHD).

On May 14, 2020, the Centers for Disease Control and Prevention (CDC) issued a [health advisory](#) providing background information and a case definition for the recently reported multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19. Cases of a severe inflammatory syndrome, with features resembling [Kawasaki disease](#)¹ or toxic shock syndrome have been reported in [Italy](#)² and the [UK](#)³, and have now been recognized in New York City and other locations in the United States, including California.

Based on current reports, clinical features include persistent fever, hypotension, severe illness involving multiple organ systems, and elevated inflammatory markers. Cardiovascular complications are common, and respiratory symptoms are not always present.

The full CDC case definition follows:

- **An individual aged <21 years presenting with feverⁱ, laboratory evidence of inflammationⁱⁱ, 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**

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**

The appearance of these cases several weeks after a local outbreak of COVID-19 suggests an excessive or disordered immunologic response to SARS-CoV-2 infection. Many patients with MIS-C appear to have current or recent SARS-CoV-2 infection, or they have a history of exposure to COVID-19 within the four weeks prior to onset of symptoms. Although MIS-C is rare, the condition is serious, and some affected children have died. Information about risk factors, pathogenesis, clinical course, and treatment is currently limited. It is currently unknown whether adults >21 years of age might also be affected by this rare condition.

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



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Actions Requested of Clinicians, Emergency Departments, Pathologists, and Healthcare Facilities

1. Review the [CDC health advisory](#) and become familiar with Multisystem Inflammatory Syndrome in Children (MIS-C) associated with COVID-19.
2. Be vigilant for children and youth <21 years of age presenting with fever, clinical and laboratory signs of an inflammatory condition, and severe illness with multiple organ system involvement.
3. Test patients with these findings for SARS-CoV-2, using a nucleic acid amplification test such as RT-PCR, and a serologic assay approved or given Emergency Use Authorization by the US Food and Drug Administration (FDA). Serology should not be the sole diagnostic test for SARS-CoV-2 and should be interpreted with caution. See ACPHD's [Serological Testing for COVID-19](#) for more information.
4. When hospitalization is clinically warranted for suspected MIS-C, admit children and youth (especially those under 14 years of age) to hospitals with CCS-approved Pediatric Intensive Care Unit (PICU) facilities and ready access to consultation with pediatric subspecialists. These facilities include UCSF Benioff Children's Hospital-Oakland and Kaiser Oakland (in Alameda County), and UCSF Benioff Children's Hospital-San Francisco, Lucile Packard Children's Hospital, California Pacific Medical Center, Kaiser Santa Clara, and John Muir Medical Center (Walnut Creek) in neighboring counties.
5. **Report cases meeting [CDC's case definition for Multisystem Inflammatory Syndrome in Children \(MIS-C\)](#) within 24 hours to the Alameda County Public Health Department (ACPHD). Healthcare providers do not need to call Alameda County Public Health Department (ACPHD) to report these cases. Instead, healthcare providers should do the following:**
 - a. **Healthcare providers must complete a [Confidential Morbidity Report \(CMR\)](#) for confirmed cases and fax to (510) 273-3744, or send by secure email to AcuteCD@acgov.org. Please make sure to report as accurately and completely as possible, including occupation if applicable, race/ ethnicity, and all laboratory results that support the diagnosis of MIS-C. Providers must include the address and phone number for each reported case to support timely investigation.**
 - b. **For clinical inquiries related to interpretation of laboratory results or evaluation and management of patients with suspected MIS-C, call ACPHD at (510) 267- 3250, Mon-Fri 8:30 am to 5 pm. After hours and on weekends, call Alameda County Fire Dispatch at (925) 422- 7595 and ask to speak to the Public Health Duty Officer on call.**
6. Cases meeting the case definition for MIS-C should be reported, even if they meet some or all of the criteria for Kawasaki disease.
7. Clinicians should consider the possibility of MIS-C in any pediatric death with evidence of SARS-CoV-2 infection.

Resources

- [ACPHD Health Alert Page](#)
- [ACPHD COVID-19 Disease Reporting Page](#)

¹ McCrindle Brian W., Rowley Anne H., Newburger Jane W., et al. Diagnosis, Treatment, and Long-Term Management of Kawasaki Disease: A Scientific Statement for Health Professionals From the American Heart Association. *Circulation*. 2017;135(17):e927-e999. doi:10.1161/CIR.0000000000000484

² Verdoni L, Mazza A, Gervasoni A, et al. An outbreak of severe Kawasaki-like disease at the Italian epicentre of the SARS-CoV-2 epidemic: an observational cohort study. *The Lancet*. 2020;395(10239):1771-1778. doi:10.1016/S0140-6736(20)31103-X

³ Riphagen S, Gomez X, Gonzalez-Martinez C, Wilkinson N, Theocharis P. Hyperinflammatory shock in children during COVID-19 pandemic. *The Lancet*. 2020;395(10237):1607-1608. doi:10.1016/S0140-6736(20)31094-1