



NC DEPARTMENT OF  
**HEALTH AND  
HUMAN SERVICES**

**ROY COOPER** • Governor  
**MANDY COHEN, MD, MPH** • Secretary  
**MARK T. BENTON** • Assistant Secretary for Public Health  
Division of Public Health

To: All North Carolina Health Care Providers  
From: Erica Wilson, MD, MPH, Medical Epidemiologist  
Subject: Multisystem Inflammatory Syndrome in Children Associated with COVID-19 **(3 pages)**  
Date: May 14, 2020

This memo is intended to provide information regarding identification and reporting of a pediatric multisystem inflammatory syndrome potentially linked to COVID-19.

### **Background**

A possible link between COVID-19 and a serious inflammatory disease in children and teenagers has been reported in multiple European countries and recently in the United States.

The specific features of this inflammatory syndrome are still being determined, but reports include features of Toxic Shock Syndrome and/or Kawasaki Disease. Additional reported features include laboratory evidence of inflammation and single or multi-organ dysfunction.

### **Case Classification**

An individual aged <21 years presenting with fever (measured or subjective lasting at least 24hrs), laboratory evidence of inflammation (e.g. elevated CRP, elevated troponin, etc), and evidence of clinically severe illness requiring hospitalization, with multisystem ( $\geq 2$ ) 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.

Note that patients may present with typical or incomplete Kawasaki disease or symptoms similar to toxic shock syndrome. This multisystem inflammatory syndrome should be considered in any pediatric death with evidence of SARS-CoV-2.

### **Reporting**

Clinicians are requested to report suspected cases of multisystem inflammatory syndrome in children to the NC DPH Communicable Disease Branch at 919-733-3419.

NC DPH requests that clinicians complete the patient summary form (attached) and submit completed forms to NC DPH Communicable Disease Branch via secure fax at 919-733-0490 to the attention of "MIS-C surveillance".

**NC DEPARTMENT OF HEALTH AND HUMAN SERVICES • DIVISION OF PUBLIC HEALTH**

LOCATION: 225 North McDowell St., Raleigh, NC 27603  
MAILING ADDRESS: 1902 Mail Service Center, Raleigh, NC 27699-1902  
www.ncdhhs.gov • TEL: 919-733-7301 • FAX: 919-733-1020

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Additional information, including admission and discharge notes and relevant laboratory results, should be provided along with the patient summary form.

Patients presenting with suspected multisystem inflammatory syndrome should be immediately referred for specialty or critical care as indicated. Patients meeting criteria for Kawasaki disease should receive appropriate treatment for that condition.

#### References

1. Royal College of Paediatrics and Child Health Guidance: Paediatric multisystem inflammatory syndrome temporally associated with COVID-19, <https://www.rcpch.ac.uk/sites/default/files/2020-05/COVID-19-Paediatric-multisystem-%20inflammatory%20syndrome-20200501.pdf>.
2. Riphagen S, Gomez X, Gonzales-Martinez C, Wilkinson N, Theocharis P. Hyperinflammatory shock in children during COVID-19 pandemic. Lancet. 2020. Advance online publication, doi: 10.1016/S0140-6736(20)31094 [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31094-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31094-1/fulltext)

cc: Dr. Jean-Marie Maillard, Communicable Disease Branch Medical Director  
Evelyn Foust, Chief, Communicable Disease Branch  
Dr. Zack Moore, State Epidemiologist

**North Carolina Patient Summary Form  
Multisystem Inflammatory Syndrome**

Name of physician who can provide additional clinical/lab information, if needed:

\_\_\_\_\_

Affiliation \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Name of main hospital that provided patient's care: \_\_\_\_\_

State: \_\_\_\_\_ County: \_\_\_\_\_

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1. Today's date \_\_\_/\_\_\_/\_\_\_\_\_ (mm/dd/yyyy)

2. Patient first name \_\_\_\_\_ 3. Patient last name \_\_\_\_\_

4. Sex:  M  F 5. Date of birth \_\_\_/\_\_\_/\_\_\_\_\_

Residence: 6. State \_\_\_\_\_ 7. County \_\_\_\_\_

8. Race:  American Indian or Alaska Native  Asian  Black or African American  Native Hawaiian or Other Pacific Islander  White (check all that apply) 9. Ethnicity:  Hispanic or Latino  Not Hispanic or Latino

10. Date of onset of symptoms \_\_\_/\_\_\_/\_\_\_\_\_ (mm/dd/yyyy)

11. Date of admission to **first** hospital \_\_\_/\_\_\_/\_\_\_\_\_

12. Date of discharge from **last** hospital \_\_\_/\_\_\_/\_\_\_\_\_ (or  still hospitalized at time of form submission)

13. Did the patient die from this illness?  yes  no  unknown 14. If yes, date of death \_\_\_/\_\_\_/\_\_\_\_\_

15. SARS-CoV-2 test result

a. Molecular/PCR  positive/detected  negative/not detected  indeterminate  not done

b. Antigen  positive/detected  negative/not detected  indeterminate  not done

c. Serology/antibody  IgM positive  IgG positive  Total antibody positive  negative  not done

16. Did the patient have known exposure to COVID-19 in the past four weeks?  yes  no  unknown

17. Other testing done:

a. Respiratory viral panel  yes  no  unknown if yes, date \_\_\_/\_\_\_/\_\_\_\_\_

Results:  normal/negative  abnormal/positive \_\_\_\_\_

b. Blood culture  yes  no  unknown if yes, date \_\_\_/\_\_\_/\_\_\_\_\_

Results:  normal/negative  abnormal/positive \_\_\_\_\_

c. C-reactive protein  yes  no  unknown if yes, date \_\_\_/\_\_\_/\_\_\_\_\_

Results:  normal/negative  abnormal/positive \_\_\_\_\_

d. Complete blood count (CBC)  yes  no  unknown if yes, date \_\_\_/\_\_\_/\_\_\_\_\_

Results:  normal/negative  abnormal/positive \_\_\_\_\_

e. Metabolic panel (BMP or CMP)  yes  no  unknown if yes, date \_\_\_/\_\_\_/\_\_\_\_\_

Results:  normal/negative  abnormal/positive \_\_\_\_\_

f. Other \_\_\_\_\_

18. Symptoms:

Fever  Abdominal pain  Confusion  Conjunctivitis  Diarrhea  Headache  Lymphadenopathy  
 Mucus membrane changes  Neck swelling  Rash  Respiratory symptoms  Sore throat  
 Swollen hands and/or feet  Syncope  Vomiting  Other \_\_\_\_\_