

Multisystem Inflammatory Syndrome in Children Associated with SARS-CoV-2 Infection Case Report Form



Patient first name: _____ **Patient last name:** _____ **Patient parent/guardian telephone:** _____
Patient address: _____ **City:** _____ **State:** _____ **Zip code:** _____
Abstractor name: _____ **Facility name:** _____ **Facility telephone:** _____ **Date of abstraction:** _____

SECTION 1 – MIS-C INCLUSION CRITERIA

- 1. Did the patient meet all inclusion criteria for case ascertainment?** Yes No
- 1.1 Age <21 years
 - 1.2 Subjective or documented fever ($\geq 38.0^{\circ}\text{C}$)
 - 1.3 Illness with clinical severity requiring hospitalization or resulting in death
 - 1.4 A more likely alternative diagnosis is not present
 - 1.5 C-reactive protein ≥ 3.0 mg/dL (30 mg/L)
 - 1.6 New onset manifestations in ≥ 2 of the following categories:
 - 1.6.1 Cardiac involvement indicated by left ventricular ejection fraction $< 55\%$; coronary artery dilatation, aneurysm, or ectasia; or troponin elevated above laboratory normal range or indicated as elevated in a clinical note
 - 1.6.2 Mucocutaneous involvement indicated by rash, inflammation of the oral mucosa, conjunctivitis or conjunctival injection, or extremity findings
 - 1.6.3 Shock
 - 1.6.4 Gastrointestinal involvement indicated by abdominal pain, vomiting, or diarrhea
 - 1.6.5 Hematologic involvement indicated by platelet count $< 150,000$ cells/ μL or absolute lymphocyte count (ALC) $< 1,000$ cells/ μL
 - 1.7 Meets laboratory criteria for SARS-CoV-2 infection or epidemiologic linkage criteria
 - 1.7.1 Positive viral test (i.e., NAAT/PCR or antigen) during hospitalization or within 60 days prior
 - 1.7.2 Positive viral test (i.e., NAAT/PCR or antigen) in a post-mortem specimen
 - 1.7.3 Detection of SARS-CoV-2 specific antibodies associated with current illness
 - 1.7.4 Close contact with a confirmed or probable case of COVID-19 disease in the 60 days prior to hospitalization
 - 1.8 Death certificate lists MIS-C as an underlying cause of death or a significant condition contributing to death

SECTION 2 – PATIENT DEMOGRAPHICS AND MEDICAL HISTORY

Patient Demographics:

- 2.1 **State of Residence:** _____
- 2.2 **Patient zip code/postal code (primary residence):** _____
- 2.3 **Date of birth (MM/DD/YYYY):** _____
- 2.4 **Age:** _____ Months Days Years
- 2.5 **Sex:** Male Female
- 2.6 **Ethnicity:** Hispanic or Latino Not Hispanic or Latino Refused or Unknown
- 2.7 **Race (mark all that apply, selecting more than one option as necessary):**
 - 2.7.1 White
 - 2.7.2 Black or African American
 - 2.7.3 American Indian or Alaska Native
 - 2.7.4 Native Hawaiian or other Pacific Islander
 - 2.7.5 Asian
 - 2.7.6 Other Race
 - 2.7.7 Unknown
- 2.8 **Height:** _____ cm
- 2.9 **Weight:** _____ kg
- 2.10 **BMI:** _____

Underlying conditions:

- | | | | |
|----------|---|---------|---|
| 2.11.1 | No underlying medical conditions | 2.11.6 | Cardiovascular condition |
| 2.11.2 | Immunosuppressive disorder/malignancy | 2.11.7 | Sickle cell disease |
| 2.11.3 | Obesity | 2.11.8 | Chronic lung disease (including asthma) |
| 2.11.4 | Diabetes mellitus | 2.11.9 | Other congenital malformations |
| 2.11.4.1 | Type 1 | 2.11.10 | Other, specify: _____ |
| 2.11.4.2 | Type 2 | | |
| 2.11.5 | Neurologic/neuromuscular or developmental condition | | |

Other medical history:

- 2.12 Does the patient have a history of the following at least 90 days prior to developing their current MIS-C illness?
 - 2.12.1 Kawasaki Disease Date of diagnosis (MM/DD/YYYY): _____
 - 2.12.2 MIS-C Date of diagnosis (MM/DD/YYYY): _____

SECTION 3 – CLINICAL SIGNS AND SYMPTOMS

Illness Details:

- 3.1 Did patient have close contact with an individual with COVID-19 within 60 days prior to hospitalization: Yes No
- 3.1.1 If yes, first date of contact (MM/DD/YYYY): _____ Date unknown
- 3.2 Onset date of symptoms that led to hospitalization for MIS-C (MM/DD/YYYY): _____
- 3.3 Hospital admission date (MM/DD/YYYY): _____
- 3.3.1 Number of days in the hospital: _____
- 3.4 Admitted to the ICU? Yes No
- 3.5 Patient outcome: Died Discharged Still admitted
- 3.5.1 Hospital discharge or death date (MM/DD/YYYY): _____

3.6 Signs and symptoms associated with MIS-C illness

- | | |
|------------------------------|------------------------|
| 3.6.1 Mucocutaneous | 3.6.3 Respiratory |
| Rash | Cough |
| Inflammation of oral mucosa | Shortness of breath |
| Conjunctival injection | 3.6.4 Gastrointestinal |
| Peripheral extremity changes | Abdominal pain |
| 3.6.2 Neurologic | Vomiting |
| Meningismus/meningeal signs | Diarrhea |
| Altered mental status | 3.6.5 Other |
| Headache | Neck pain |
| | Chest pain/tightness |

SECTION 4 – LABORATORY STUDIES

4.1 Laboratory Studies

- 4.1.1 Elevated troponin
- 4.1.2 Elevated BNP/NT-pro BNP
- 4.1.3 Elevated AST
- 4.1.4 Elevated ALT
- 4.1.5 Elevated creatinine

4.2 CSF Studies

- 4.2.1 White blood count: _____ cells/mm³ or cells/ μ L
- 4.2.2 Protein: _____ mg/dL g/L
- 4.2.3 Glucose: _____ mg/dL mmol/L

4.3 SARS-CoV-2 testing during hospitalization for current MIS-C illness:

- 4.3.1 SARS-CoV-2 Antibody (IgG or IgM): Positive Negative Not done
- 4.3.1.1 If performed, date (MM/DD/YYYY): _____
- 4.3.1.2 Antibody type: Anti-Spike Anti-Nucleocapsid Anti-Spike and Anti-Nucleocapsid Unknown
- 4.3.2 SARS CoV-2 Viral Test: Positive Negative Not done
- 4.3.2.1 If performed, date (MM/DD/YYYY): _____
- 4.3.2.2 SARS CoV-2 test type: RT-PCR/NAAT Antigen Unknown

SECTION 5 – IMAGING STUDIES AND COMPLICATIONS

If any studies from a particular type of imaging are abnormal during hospitalization, select “abnormal” for that imaging type. If all studies from a particular type of imaging are normal throughout hospitalization, select “normal” for that imaging type.

5.1	Cardiac Imaging			
5.1.1	Echocardiogram	Normal	Abnormal	Not done
5.2	Chest Imaging			
5.2.1	Chest X-ray	Normal	Abnormal	Not done
5.2.2	Chest CT	Normal	Abnormal	Not done
5.3	Abdominal Imaging			
5.3.1	Abdominal ultrasound	Normal	Abnormal	Not done
5.3.2	Abdominal X-ray	Normal	Abnormal	Not done
5.3.3	Abdominal CT	Normal	Abnormal	Not done

Please indicate clinical findings identified during hospitalization for MIS-C illness.

5.4 Cardiac Complications

Myocarditis
Coronary artery dilatation, ectasia, or aneurysm on cardiac imaging
Left ventricular systolic dysfunction
Lowest LV ejection fraction:
<50%
50% to <55%
Right ventricular systolic dysfunction
Pericarditis/pericardial effusion
Congestive heart failure
Other cardiac complication, specify: _____

5.5 Respiratory Complications

Acute respiratory distress syndrome (ARDS)
Pneumonia
Other respiratory complication, specify: _____

5.6 Hypotension or shock

Hypotension
Shock

5.7 Gastrointestinal Complications

Appendicitis/inflamed appendix
Cholecystitis/inflamed gallbladder
Mesenteric adenitis
Other abdominal complication, specify: _____

5.8 Hematologic Complications

Thrombocytopenia (platelets <150,000 cells/ μ L)
Lymphopenia (absolute lymphocyte count/ALC <1000 cells/ μ L)

5.9 Other Complications

Meningitis/encephalitis
Encephalopathy
Other neurologic complication, specify: _____
Retropharyngeal edema/phlegmon on head/neck ultrasound or CT
Lymph nodes \geq 1.5 cm on head/neck ultrasound or CT
Other complication, specify: _____

SECTION 6 – CLINICAL MANAGEMENT

6.1 Please indicate all treatments or medical interventions that the subject received for this illness.

High-flow nasal cannula	Steroids (e.g., prednisone, methylprednisolone)
CPAP or BiPAP	Immune modulators (e.g., anakinra, infliximab)
Invasive mechanical ventilation (intubation)	Dialysis or continuous renal replacement therapy (CRRT)
ECMO	First IVIG
Vasoactive medications (e.g., epinephrine, milrinone, norepinephrine, or vasopressin)	Second IVIG

SECTION 7 – COVID-19 VACCINE INFORMATION

7.1	Has the patient received a COVID-19 vaccine?	Yes	No	Unknown	
7.2	If yes, how many doses?	1 dose	2 doses	3 or more doses	Unknown
7.3	Date vaccine dose(s) received				
7.3.1	Vaccine Dose 1	Date (MM/DD/YYYY): _____	Manufacturer: _____		
7.3.2	Vaccine Dose 2	Date (MM/DD/YYYY): _____	Manufacturer: _____		
7.3.3	Vaccine Dose 3	Date (MM/DD/YYYY): _____	Manufacturer: _____		
7.3.4	Vaccine Dose 4	Date (MM/DD/YYYY): _____	Manufacturer: _____		
7.3.5	Vaccine Dose 5	Date (MM/DD/YYYY): _____	Manufacturer: _____		