

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



CDC MIS ID (REQUIRED): _____ Health Department ID: _____ NCOV ID (if available): _____

NNDSS ID: _____ Abstractor name: _____ 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 2.7.5 Asian
- 2.7.2 Black or African American 2.7.6 Other Race
- 2.7.3 American Indian or Alaska Native 2.7.7 Unknown
- 2.7.4 Native Hawaiian or other Pacific Islander
- 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

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

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/μL
- 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: _____		