

# Multisystem Inflammatory Syndrome Associated with COVID-19 Case Report Form



Patient First Name: \_\_\_\_\_ Patient Last Name: \_\_\_\_\_ Patient/Parent/Guardian Telephone: \_\_\_\_\_

Patient Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Abstractor Name: \_\_\_\_\_ Facility Name: \_\_\_\_\_ Facility Telephone: \_\_\_\_\_ Abstraction Date: \_\_\_\_\_

## SECTION 1 – INCLUSION CRITERIA

- 1.1  Age <21  Age ≥21
- 1.2  Fever >38.0°C for ≥24 hours, or report of subjective fever lasting ≥24 hours, AND
- 1.3  Laboratory markers of inflammation (including, but not limited to one or more; 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, AND
- 1.4  Evidence of clinically severe illness requiring hospitalization, with multisystem (≥2) organ involvement (*check all applicable below*): AND
- 1.4.1  Cardiac (e.g. shock, elevated troponin, BNP, abnormal echocardiogram, arrhythmia)
- 1.4.2  Renal (e.g. acute kidney injury or renal failure)
- 1.4.3  Respiratory (e.g. pneumonia, ARDS, pulmonary embolism)
- 1.4.4  Hematologic (e.g. elevated D-dimers, thrombophilia, or thrombocytopenia)
- 1.4.5  Gastrointestinal (e.g. elevated bilirubin, elevated liver enzymes, or diarrhea)
- 1.4.6  Dermatologic, (e.g. rash, mucocutaneous lesions)
- 1.4.7  Neurological, (e.g. CVA, aseptic meningitis, encephalopathy)
- 1.5  No alternative plausible diagnosis; AND
- 1.6  Positive for current or recent SARS-COV-2 infection by (check all applicable below): OR
- 1.6.1  RT-PCR
- 1.6.2  Serology
- 1.6.3  Antigen test
- 1.7  COVID-19 exposure within the 4 weeks prior to the onset of symptoms
- 1.7.1 If yes, date of first exposure within the 4 weeks prior : (MM/DD/YYYY): \_\_\_\_\_  Unknown

## SECTION 2 – 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 **Sex:**  Male  Female
- 2.5 **Ethnicity:**  Hispanic or Latino  Not Hispanic or Latino  Refused or Unknown
- 2.6 **Race (mark all that apply, selecting more than one option as necessary):**
- 2.6.1  White
- 2.6.2  Black or African American
- 2.6.3  American Indian
- 2.6.4  Alaska Native or Aboriginal Canadian Native
- 2.6.5  Hawaiian
- 2.6.6  Other Pacific Islander
- 2.6.7  Asian
- 2.6.8  Other
- 2.6.9  Refused or Don't know
- 2.7 **Height:** \_\_\_\_\_ inches
- 2.8 **Weight:** \_\_\_\_\_ lbs
- 2.9 **BMI:** \_\_\_\_\_
- Comorbidities:**
- |         |                                       |                           |                          |        |  |
|---------|---------------------------------------|---------------------------|--------------------------|--------|--|
| 2.10.1  | Immunosuppressive disorder/malignancy | <input type="radio"/> Yes | <input type="radio"/> No | 2.11   | Hospital admission date                                |
| 2.10.2  | Obesity                               | <input type="radio"/> Yes | <input type="radio"/> No |        | (MM/DD/YYYY): _____                                    |
| 2.10.3  | Type 1 diabetes                       | <input type="radio"/> Yes | <input type="radio"/> No | 2.11.1 | Number of days in the hospital: _____                  |
| 2.10.4  | Type 2 diabetes                       | <input type="radio"/> Yes | <input type="radio"/> No | 2.12   | If admitted to the ICU, admission date                 |
| 2.10.5  | Seizures                              | <input type="radio"/> Yes | <input type="radio"/> No |        | (MM/DD/YYYY): _____                                    |
| 2.10.6  | Congenital heart disease              | <input type="radio"/> Yes | <input type="radio"/> No | 2.12.1 | Number of days in the ICU: _____                       |
| 2.10.7  | Sickle cell disease                   | <input type="radio"/> Yes | <input type="radio"/> No | 2.13   | <b>Patient outcome:</b> Died Discharged Still admitted |
| 2.10.8  | Chronic lung disease                  | <input type="radio"/> Yes | <input type="radio"/> No |        | 2.13.2 Hospital discharge or death date                |
| 2.10.9  | Other congenital malformations        | <input type="radio"/> Yes | <input type="radio"/> No |        | (MM/DD/YYYY): _____                                    |
| 2.10.10 | Other (specify): _____                |                           |                          |        |  |

### SECTION 3 – CLINICAL SIGNS AND SYMPTOMS

- 3.1 Did the patient have preceding COVID-like illness?  Yes  No  
 3.1.1 Date of symptom onset (MM/DD/YYYY): \_\_\_\_\_
- 3.2 Date of symptom onset of MIS (MM/DD/YYYY): \_\_\_\_\_
- 3.3 Fever  $\geq 38.0^{\circ}\text{C}$ :  Yes  No  
 3.3.1 Date of fever onset (MM/DD/YYYY): \_\_\_\_\_  
 3.3.2 Highest Temperature: \_\_\_\_\_  $^{\circ}\text{C}$   
 3.3.3 Number of days febrile: \_\_\_\_\_

#### Signs and symptoms *during present illness*

- |   |   |
|---|---|
| <p><b>3.4.1 Cardiac</b></p> <p>3.4.1.1 Shock <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.1.2 Elevated troponin <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.1.3 Elevated BNP or NT-proBNP <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>3.4.2 Renal</b></p> <p>3.4.2.1 Acute kidney injury <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.2.2 Renal failure <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>3.4.3 Respiratory</b></p> <p>3.4.3.1 Cough <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.3.2 Shortness of breath <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.3.3 Chest pain/tightness <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.3.4 Pneumonia <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.3.5 ARDS <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.3.6 Pulmonary embolism <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>3.4.4 Hematologic</b></p> <p>3.4.4.1 Elevated D-dimers <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.4.2 Thrombophilia <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.4.3 Thrombocytopenia <input type="radio"/> Yes <input type="radio"/> No</p> | <p><b>3.4.5 Gastrointestinal</b></p> <p>3.4.5.1 Abdominal pain <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.5.2 Vomiting <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.5.3 Diarrhea <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.5.4 Elevated bilirubin <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.5.5 Elevated liver enzymes <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>3.4.6 Dermatologic</b></p> <p>3.4.6.1 Rash <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.6.2 Mucocutaneous lesions <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>3.4.7 Neurological</b></p> <p>3.4.7.1 Headache <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.7.2 Altered mental state <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.7.3 Syncope/near syncope <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.7.5 Meningitis <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.7.6 Encephalopathy <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>3.4.8 Other</b></p> <p>3.4.8.1 Neck pain <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.8.2 Myalgia <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.8.3 Conjunctival injection <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.8.4 Periorbital edema <input type="radio"/> Yes <input type="radio"/> No</p> <p>3.4.8.5 Cervical lymphadenopathy &gt;1.5 cm diameter <input type="radio"/> Yes <input type="radio"/> No</p> |
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### SECTION 4 – COMPLICATIONS

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|--|---|
| <p><b>4.1 Arrhythmia</b> <input type="radio"/> Yes <input type="radio"/> No</p> <p>If yes:</p> <p>4.1.1 Ventricular arrhythmia: <input type="radio"/> Yes <input type="radio"/> No</p> <p>4.1.2 Supraventricular arrhythmia: <input type="radio"/> Yes <input type="radio"/> No</p> <p>4.1.3 Other arrhythmia (<i>specify</i>): _____</p> <p>4.2 Congestive heart failure <input type="radio"/> Yes <input type="radio"/> No</p> <p>4.3 Myocarditis <input type="radio"/> Yes <input type="radio"/> No</p> | <p><b>4.4</b> Pericarditis <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.5</b> Liver failure <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.6</b> Deep vein thrombosis or PE <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.7</b> ARDS <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.8</b> Pneumonia <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.9</b> CVA or stroke <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.10</b> Encephalitis or aseptic meningitis <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.11</b> Shock <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>4.12</b> Hypotension <input type="radio"/> Yes <input type="radio"/> No</p> |
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### SECTION 5 – TREATMENTS

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| <p><b>5.1</b> Low flow nasal cannula <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.2</b> High flow nasal cannula <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.3</b> Non-invasive ventilation <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.4</b> Intubation <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.5</b> Mechanical ventilation <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.6</b> ECMO <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.7</b> Vasoactive medications (e.g. epinephrine, milrinone, norepinephrine, or vasopressin) <input type="radio"/> Yes <input type="radio"/> No<br/>(<i>specify</i>): _____</p> <p><b>5.8</b> Steroids <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.9</b> Immune modulators (e.g. anakinra, tocilizumab) <input type="radio"/> Yes <input type="radio"/> No<br/>(<i>specify</i>): _____</p> | <p><b>5.10</b> Antiplatelets (e.g. aspirin, clopidogrel) <input type="radio"/> Yes <input type="radio"/> No<br/>(<i>specify</i>): _____</p> <p><b>5.11</b> Anticoagulation (e.g. heparin, enoxaparin, warfarin) <input type="radio"/> Yes <input type="radio"/> No<br/>(<i>specify</i>): _____</p> <p><b>5.12</b> Dialysis <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.13</b> First IVIG <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.14</b> Second IVIG <input type="radio"/> Yes <input type="radio"/> No</p> <p><b>5.15</b> COVID-19 vaccine <input type="radio"/> Yes <input type="radio"/> No</p> <p>Vaccine manufacturer:.....</p> <p>Number of doses:.....</p> <p>Date of dose 1:.....</p> <p>Date of dose 2:.....</p> |
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**SECTION 6 – STUDIES**

**6.1 Blood Test Results**

6.1.1	Fibrinogen	Highest value: _____	units: _____	Low	Normal	High
6.1.2	CRP	Highest value: _____	units: _____	Low	Normal	High
6.1.3	Ferritin	Highest value: _____	units: _____	Low	Normal	High
6.1.4	Troponin	Highest value: _____	units: _____	Low	Normal	High
6.1.5	BNP	Highest value: _____	units: _____	Low	Normal	High
6.1.6	NT-proBNP	Highest value: _____	units: _____	Low	Normal	High
6.1.7	D-dimer	Highest value: _____	units: _____	Low	Normal	High
6.1.8	IL-6	Highest value: _____	units: _____	Low	Normal	High
6.1.9	Serum White Blood Count	Highest value: _____	Lowest value : _____	units: _____		
6.1.10	Platelets	Highest value: _____	Lowest value : _____	units: _____		
6.1.11	Neutrophils	Highest value: _____	Lowest value : _____	units: _____		
6.1.12	Lymphocytes	Highest value: _____	Lowest value : _____	units: _____		
6.1.13	Bands	Highest value: _____	Lowest value : _____	units: _____		

**6.2 CSF Studies**

6.2.1	White blood count	Highest value: _____	Lowest value : _____	units: _____
6.2.2	Protein	Highest value: _____	Lowest value : _____	units: _____
6.2.3	Glucose	Highest value: _____	Lowest value : _____	units: _____

**6.3 Urinalysis**

6.3.1	Urine White blood count	Highest value : _____	Lowest value : _____	units: _____
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**6.4 Echocardiogram (check if seen on ANY echocardiogram)**

- 6.4.1  Not done
- 6.4.2  Normal results
- 6.4.3  Coronary artery aneurysms
  - 6.4.3.1 Max coronary artery Z-score: \_\_\_\_\_
- 6.4.4  Coronary artery dilatation
- 6.4.5  Cardiac dysfunction (decreased function), specify type:
  - 6.4.5.1  left ventricular dysfunction
  - 6.4.5.2  right ventricular dysfunction
- 6.4.6  Pericardial effusion
- 6.4.7  Pleural effusion
- 6.4.8  Mitral regurgitation, specify type:     mild     moderate     severe
- 6.4.9  Other (specify): \_\_\_\_\_

6.5 Date of first test showing coronary artery aneurysm or dilatation (MM/DD/YYYY): \_\_\_\_\_

**6.6 Abdominal imaging**     Ultrasound     CT     Not done

- 6.6.1  Normal
- 6.6.2  Mesenteric lymphadenopathy
- 6.6.3  Free fluid
- 6.6.4  Other (specify): \_\_\_\_\_

**6.7 Chest imaging**     Chest x-ray     CT     Not done

- 6.7.1  Normal
- 6.7.2  Pneumonia
- 6.7.3  Atelectasis
- 6.7.4  Pleural effusion
- 6.7.5  Other (specify): \_\_\_\_\_

**SARS-COV-2 testing**

- 6.8 **RT-PCR:**     Positive     Negative     Not done
  - 6.8.1 If performed, date (MM/DD/YYYY): \_\_\_\_\_
- 6.9 **Antigen:**     Positive     Negative     Not done
  - 6.9.1 If performed, date (MM/DD/YYYY): \_\_\_\_\_
- 6.10 **IgG:**     Positive     Negative     Not done
  - 6.10.1 If performed, date (MM/DD/YYYY): \_\_\_\_\_
- 6.11 **IgM:**     Positive     Negative     Not done
  - 6.11.1 If performed, date (MM/DD/YYYY): \_\_\_\_\_
- 6.12 **IgA:**     Positive     Negative     Not done
  - 6.12.1 If performed, date (MM/DD/YYYY): \_\_\_\_\_