



- **CLINICAL PRACTICE GUIDELINE:**
- Evaluation of Possible Multisystem Inflammatory Syndrome (MIS-C)
- *Mary Bridge Emergency Department*
- *The following information is intended as a guideline for mangement of patients with suspected MIS-C. Management of the actual patient may require a more individualized approach*
- *Written and developed by Sara Ahmed, MD*
- *V3, 6-1-2020*

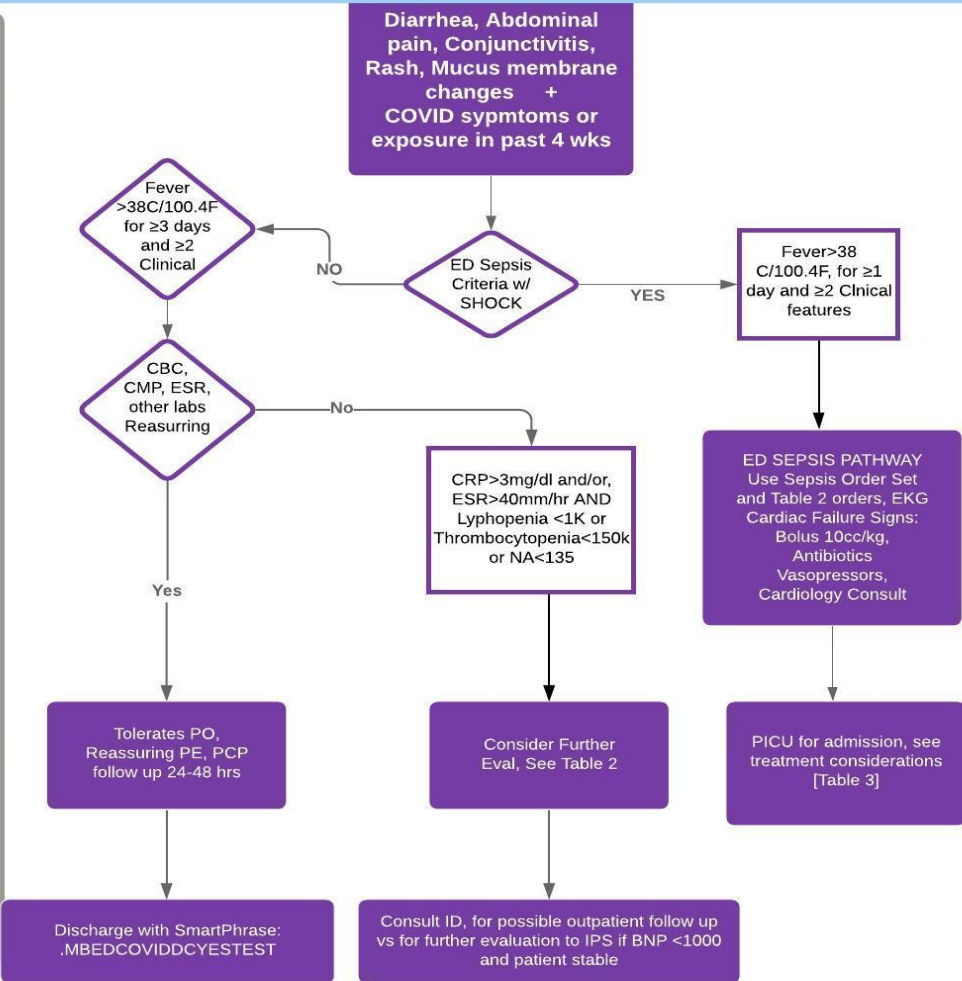
**Clinical Features/Evidence MIS-C**  
 Most >4 organ systems involved, ≥2 required  
 Involvement of following systems (% of patients in case series)  
 See Definitions on page 2

- GI 92%
- Cardiovascular 80%
- Hematologic 76%
- Mucocutaneous 74%, rash 59%
- Respiratory 70%
- Musculoskeletal 23%
- Renal 8%
- Neurologic 6%

Lab Evidence of MIS-C:  
 4 or more markers of inflammation

- **Evidence of inflammation, common vaues:**
- CRP>3 mg/dl
- ESR>40mm/h
- Ferritin>500 ng/ml
- ANC>7700, ALC <1500,Plt <150k, Anemia
- D-Dimer>2ug/ml
- Fibrinogen>400 mg/dl
- Albumin<3 g/dl
- ALT>40U/L
- INR>1.1
- **Other Labs:**
- hyponatremia, AKI, elevate LDH, elevated CK, high trop, BNP>400pg/ml, prolonged PT and or PTT

Percentages and values adapted from Feldstein et al, NEJM June 2020



- Table 2: Orders**
- Imaging:**
- Chest xray, 1 view, PORTABLE
- Labs:**
- COVID 19 High Acuity
  - CBC with differential
  - Blood Culture, Urine Culture
  - Comprehensive metabolic panel
  - C-reactive protein
  - Procalcitonin
  - Troponin
  - B-natriuretic peptide
  - Creatine phosphokinase
  - Ferritin
  - Fibrinogen
  - D-dimer
  - IL-6
- Other:**
- EKG
  - ED limited bedside ECHO
- Consult:** ID, Hematology, Cardiology

- Table 3: TREATMENT CONSIDERATIONS**
- Give antibiotics
  - Cardiac Concerns: 10cc/kg fluid bolus
  - Pressors: Epi and Milrinone
  - Consult: Cardiology, ID, Hematology as appropriate
  - BNP>1000 PICU criteria

## Definition of Organ System Involvement

### Gastrointestinal 92%

- Nausea/vomiting
  - Diarrhea
- Abdominal Pain
  - Appendicitis
  - Pancreatitis
  - Hepatitis
- Gallbladder Hydrops or edema

### Cardiovascular 80%

- Hypotension or shock
- Cardiac dysrhythmia or arrhythmia
- Ejection fraction <55%
  - Pulmonary edema
- Coronary artery z score >2/5
- Pericarditis or pericardial effusion or valvulitis
  - BNP >400pg/ml
  - Elevated troponin
- Needs vasopressor or vasoactive support
- Receipt of CPR

### Hematologic 76%

- WBC <4K
  - Anemia
- Plt <150K/ul
  - DVT
- Pulmonary Embolism
  - Hemolysis
- Bleeding or prolonged PT/PTT
- Ischemia of an extremity

### Mucocutaneous 74%

- Bilateral Conjunctival Injection
- Oral mucosal changes
- Rash or skin ulcers
  - COVID toes
- Swollen cracked lips
- Erythema of palms or soles
- Edema of hands or feet
  - Periungula desquamation

### Respiratory 70%

(Seen in teens more)

- Mechanical ventilation or oxygen requirement
  - Increased support needed for patients with baseline resp support needs
- Severe bronchospasm
- Pulmonary infiltrates
- Lower resp infection
  - Pleural effusion
- Pneumothorax or other barotrauma
- Pulmonary hemorrhage
- Chest tube required

### Musculoskeletal 23%

(seen in teens more)

- Arthritis or arthralgia
- Myositis or myalgia

### Renal 8%

Acute Kidney Injury with or without dialysis

### Neurologic 6%

- Stroke or acute cranial hemorrhage
  - Seizure
- encephalitis, aseptic meningitis, or demyelinating disorder
- Altered mental status
- Suspected meningitis with negative culture

Adapted from Feldstein et al, NEJM June 2020

Specific treatment guidelines for MIS-C can be found at [Pediatric Multisystem Inflammatory Syndrome-C guidelines 6.2.2020](#)