U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES CENTERS FOR DISEASE CONTROL AND PREVENTION ATLANTA, GA 30329

Multisystem Inflammatory Syndrome (MIS) Associated with COVID-19 Case Report Form Guidance Document, effective January 1, 2023

CASE TRACKING DATA

CDC MIS ID (REQUIRED)	Enter the CDC MIS ID assigned to the case. The CDC MIS ID should be assigned by the jurisdiction. CDC MIS IDs should be assigned for all cases that meet the CDC MIS case definition so that they can be tracked at the jurisdictional and national level. The reporting jurisdiction should assign the CDC MIS ID and use this ID for all data transmitted to CDC for that person. This ID will be used to track information about the case-patient in CDC data systems. The structure of the ID should be as follows: The first 2 to 3 alpha characters represent the reporting jurisdiction postal code, followed by 3 to 4 numeric characters **C A 1 2 3 4** ***Important!*** ***D*o not add any special characters, dashes or white spaces to the MIS ID. The alpha and numeric portions of the ID are seamless. The numeric portion of the ID cannot begin with zero ('0').**
Health Department ID (OPTIONAL)	Enter a local-use ID assigned by the state or local health department for patient tracking or matching.
NCOV ID (OPTIONAL)	Enter the CDC 2019-nCoV ID if available to the MIS case report form.
NNDSS ID (local_record_id/case id) (OPTIONAL)	Also referred to Local Record ID, enter the MIS NNDSS ID (either GENV2 or NETSS) if it has been entered through the NNDSS MIS surveillance database.
Abstractor name	Person performing the abstraction
Date of abstraction	Date abstraction was started

SECTION 1. MIS-C 2023 CASE DEFINITION INCLUSION CRITERIA

1.	Did the patient meet all inclusion criteria for case ascertainment?	Select the appropriate response. See the Council for State and Territorial Epidemiologists position statement for the 2023 CDC MIS-C case definition: Council of State and Territorial Epidemiologists (ymaws.com)
1.1	Age <21 years	Age less than 21 years
1.2	Subjective or documented fever (≥38.0^{o}C)	Subjective fevers include fevers reported by patient/family without a measured temperature. Documented fevers include measured temperatures reported by patient/family or documented in the medical record. Subjective or documented fever of any duration during potential MIS-C illness meets this criterion.
1.3	Illness with clinical severity requiring hospitalization or resulting in death	Potential MIS-C illness requiring admission to a hospital or potential MIS-C illness resulting in death .
1.4	A more likely alternative diagnosis is not present	Select box if clinical impression was that there was no more likely alternative diagnosis to MIS-C. The decision that an alternative diagnosis is present is at the discretion of the treating clinical team. Note: Kawasaki Disease (KD) may be an acceptable alternative diagnosis to MIS-C. If documented by the clinical treatment team, a final diagnosis of Kawasaki Disease should be considered an alternative diagnosis. These cases should not be reported to national MIS-C surveillance. If the clinical team is unsure if the patient has KD or MIS-C and the patient meets MIS-C criteria, they should be reported as an MIS-C case. Other commonly identified alternative diagnoses may include

		acute COVID-19 infection, sepsis due to bacterial or viral etiology, and group A Streptococcus-related disease including toxic shock syndrome.
1.5	C-reactive protein ≥3.0 mg/dL (30 mg/L)	If CRP is not obtained the patient should not be reported for MIS-C.
1.6	New onset manifestations in ≥2 of the following categories:	
1.6.1	Cardiac involvement	Cardiac involvement is defined as the presence of one or more of the following: left ventricular ejection fraction <55%, coronary artery dilation, aneurysm, or ectasia, or elevated troponin above laboratory normal range or indicated as elevated in a clinical note.
1.6.2	Mucocutaneous involvement	Mucocutaneous involvement is defined as the presence of one or more of the following: rash, inflammation of the oral mucosa (e.g. mucosal erythema or swelling, drying or fissure of the lips, strawberry tongue), conjunctivitis or conjunctival injection (redness of the eyes), or extremity findings (erythema [redness] or edema [swelling] of the hands or feet).
1.6.3	Shock	Clinician documentation of shock meets this criterion, including shock diagnosis documented in the medical record or receipt of vasopressors such as epinephrine, norepinephrine, milrinone, vasopressin, phenylephrine, or dopamine.
1.6.4	Gastrointestinal involvement	Gastrointestinal involvement is defined as the presence of one or more of the following: abdominal pain, vomiting, or diarrhea.
1.6.5	Hematologic involvement	Hematologic involvement is defined as the presence of one or more of the following: thrombocytopenia (platelet count <150,000 cells/µL) or lymphopenia (absolute lymphocyte count [ALC] <1,000 cells/µL). Elevated D-dimer and thrombosis are **not** included in the definition of hematologic involvement.
1.7	Meets laboratory criteria for SARS-CoV-2 infection or epidemiologic linkage criteria	**Laboratory criteria (1.7.1-1.7.3) can be met by one or more of the following:** • Detection of SARS-CoV-2 RNA in a clinical specimen[***] up to 60 days prior to or during hospitalization, or in a post-mortem specimen using a diagnostic molecular amplification test (e.g., polymerase chain reaction [PCR]), OR • Detection of SARS-CoV-2 specific antigen in a clinical specimen[***] up to 60 days prior to or during hospitalization, or in a post-mortem specimen, OR • Detection of SARS-CoV-2 specific antibodies[†] in serum, plasma, or whole blood associated with current illness resulting in or during hospitalization [***]Positive molecular or antigen results from self-administered testing using over-the-counter test kits meet laboratory criteria. [†] Includes a positive serology test regardless of COVID-19 vaccination status. Detection of anti-nucleocapsid antibody is indicative of SARS-CoV-2 infection, while anti-spike protein antibody may be induced either by COVID-19 vaccination or by SARS-CoV-2 infection. **Epidemiologic linkage criteria (1.7.4) can be met as follows:** • Close contact[‡] with a confirmed or probable case of COVID-19 disease in the 60 days prior to hospitalization. [‡]Close contact is generally defined as being within 6 feet of another person for at least 15 minutes (cumulative over a 24-hour period). However, it depends on the exposure level and setting; for example, in the setting of an aerosol generating procedure in healthcare settings without proper personal protective equipment (PPE), this may be defined as any duration.

1.8	Death certificate lists MIS-C as an underlying cause of death or a significant condition contributing to death	A person aged <21 years whose death certificate lists MIS-C or multisystem inflammatory syndrome as an underlying cause of death or a significant condition contributing to death.

SECTION 2. PATIENT DEMOGRAPHICS AND MEDICAL HISTORY

2.1	State of Residence	Enter state of residency (this may not be state where illness developed)
2.2	Patient zip code/postal code	Enter zip code of patient's primary residency (this may not be the zip code where patient was residing during illness onset)
2.3	Date of birth	Patient date of birth in MM/DD/YYYY
2.4	Age	Report age at time of hospitalization for potential MIS-C illness and designate whether reported in months, days, or years.
2.5	Sex	Choose genetic sex at birth: Male, Female
2.6	Ethnicity	Choose Hispanic or Latino, Not Hispanic or Latino, Refused or Unknown
2.7	Race	Mark all that apply, selecting more than one option as necessary: White, Black or African American, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Asian, Other Race, Unknown
2.8	Height (cm)	Complete height in centimeters
2.9	Weight (kg)	Complete weight in kilograms
2.10	BMI	Enter patient's BMI if documented in the medical record. If the patient's BMI is not documented in the medical record but height and weight are available, calculate BMI for patients ≥2years old using the following calculator: BMI Calculator Child and Teen | Healthy Weight | CDC If BMI is available as a percentile enter BMI as either >95th percentile or >99th percentile as applicable.
	Underlying Conditions	Select all conditions that are present at the time of admission. If a patient does not have the listed medical condition or if it is unknown if the patient has the listed medical condition, leave blank.
2.11.1	No underlying medical conditions	Select if the patient has no underlying medical conditions.
2.11.2	Immunosuppressive disorder/malignancy	For Immunosuppressive disorders/malignancy, include individuals who have: • Been receiving active cancer treatment for tumors or cancers of the blood • Received an organ transplant and are taking medicine to suppress the immune system • Received a stem cell transplant within the last 2 years or are taking medicine to suppress the immune system • Moderate or severe primary immunodeficiency (such as DiGeorge syndrome, Wiskott-Aldrich syndrome) • Advanced or untreated HIV infection • Active treatment with high-dose corticosteroids or other drugs that may suppress their immune response This list is obtained from the following webpage, but is not necessarily comprehensive: COVID-19 Vaccines for Moderately or Severely Immunocompromised People | CDC See appendix A for a list of immunosuppressing conditions and medications adapted from the Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) in Persons with Altered

		Immunocompetence (Advisory Committee on Immunization Practices (ACIP) General Best Guidance for Immunization (cdc.gov)
2.11.3	Obesity	Select if obesity is documented in the medical record as a current problem or if the current documented or calculated BMI is ≥30 or ≥95th percentile.
2.11.4	Diabetes mellitus	Select if documented in the medical record.
2.11.4.1	Type 1 Diabetes	Select if documented in the medical record. If diabetes type is unknown, leave blank.
2.11.4.2	Type 2 Diabetes	Select if documented in the medical record. If diabetes type is unknown, leave blank.
2.11.5	Neurologic/neuromuscular or developmental condition	Select if present. Neurologic/neuromuscular/developmental conditions include seizure disorder (does not include history of single febrile seizure), spina bifida, cerebral palsy, hydrocephaly, Trisomy 13, Trisomy 18, Trisomy 21 (Down's Syndrome), developmental delays (including global, speech, motor, or social delays), autism spectrum disorder, sensorineural hearing loss, brain cysts, and history of stroke. Hypoxic ischemic encephalopathy (HIE) should not be included here unless there is a residual neurologic defect. If a patient has a brain tumor and is underlying treatment, select "immunosuppressive disorder/ malignancy" for that condition. If a patient has a brain tumor for which they have completed treatment, only select "neurologic/neuromuscular condition" if there is a residual neurologic defect. Microcephaly without a neurologic defect is not included here. Do not include mental health disorders such as depression, anxiety, or bipolar disorder.
2.11.6	Cardiovascular condition	Select if present. Include high blood pressure/hypertension, unrepaired congenital heart defects or repaired congenital heart defects with residual defect. Select if a congenital heart defect is present and if it is unknown if it has been repaired or if there is residual defect post-repair. Examples of congenital heart defects include: tetralogy of fallot (TOF), ventricular septal defect (VSD), atrial septal defect (ASD). Patent foramen ovale (PFO) and patent ductus arteriosus (PDA) are not considered congenital heart defects. Does not include heart murmur unless there is a heart defect present.
2.11.7	Sickle cell disease	Select if present. Do not include sickle cell trait.
2.11.8	Chronic lung disease	Select if present. Chronic lung disease includes asthma, reactive airway disease, broncho-pulmonary dysplasia (BPD), restrictive lung disease, and cystic fibrosis.
2.11.9	Other congenital malformations	Select if present. Other congenital malformations include fetal alcohol syndrome, Ehlers-Danlos syndrome, club feet, scoliosis,
2.11.10	Other (specify)	Select if a condition is present that does not fall into one of the above categories. Conditions appropriate to be listed here include chronic kidney disease, obstructive sleep apnea, failure to thrive, celiac disease, inflammatory bowel disease (Crohn's, Ulcerative Colitis). Conditions such as skin rashes, constipation, heart defects that have been repaired, mental health disorders (anxiety, depression, ADHD etc.), sleep disorders, and chronic headaches or migraines do not need to be reported as underlying medical conditions.
	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	This refers to a reported or documented diagnosis of Kawasaki Disease occurring at least 90 days prior to the development of their current

		MIS-C illness. The diagnosis can be complete or incomplete Kawasaki Disease or Kawasaki Disease type unknown.
	Date of diagnosis	Date of diagnosis of Kawasaki Disease. (MM/DD/YYYY) If month is unknown, enter January. If day is unknown, enter the 1st.
2.12.2	Multisystem Inflammatory Syndrome in Children (MIS-C)	This refers to a reported or documented history of multisystem inflammatory syndrome occurring at least 90 days prior to the development of their current MIS-C illness.
	Date of diagnosis	Date of diagnosis of prior MIS-C illness. (MM/DD/YYYY) If month is unknown, enter January. If day is unknown, enter the 1st.

SECTION 3. CLINICAL SIGNS AND SYMPTOMS DURING MIS-C ILLNESS

3.1	Did patient have close contact with an individual with COVID-19 within 60 days prior to hospitalization?	Select if the patient had close contact with an individual with COVID-19 within 60 days of hospitalization for current MIS-C illness. Close contact is generally defined as: being within 6 feet of another person for at least 15 minutes (cumulative over a 24-hour period). However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper personal protective equipment (PPE), this may be defined as any duration.
3.1.1	If yes, first date of contact	Date of first contact with an individual with COVID-19 (MM/DD/YYYY). If date is unknown, select unknown.
3.2	Onset date of symptoms that led to hospitalization for MIS-C	Onset date of first symptom that led to hospitalization for the patient's current MIS-C illness. (MM/DD/YYYY)
3.3	Hospital admission date	Date of hospital admission for MIS-C illness. (MM/DD/YYYY).
3.3.1	Number of days in the hospital	Number of days admitted to the hospital. Defined as time from admission date through discharge date.
3.4	Admitted to the ICU?	Select "yes" if the patient was admitted to the intensive care unit during their hospitalization. Leave blank if this is unknown.
3.5	Patient outcome	Select the appropriate response. Leave blank if unknown.
3.5.1	Hospital discharge or death date (MM/DD/YYYY):	Date the patient was discharged from the hospital for their current MIS-C illness or date of death.
3.6	**Signs and Symptoms Associated with MIS-C Illness**	
3.6.1	Mucocutaneous	Select all mucocutaneous or dermatologic symptoms that are present: rash, inflammation of the oral mucosa (including strawberry tongue, lip peeling/cracking), conjunctival injection (eye redness), peripheral extremity changes (hand/feet redness or swelling).
3.6.2	Neurologic	Select all neurologic symptoms that are present: meningismus/meningeal signs (defined as the presence of neck stiffness, headache, and light sensitivity), encephalopathy or altered mental status, headache.
3.6.3	Respiratory	Select all respiratory symptoms that are present: cough, shortness of breath
3.6.4	Gastrointestinal	Select all gastrointestinal symptoms that are present: abdominal pain, vomiting, diarrhea.
3.6.5	Other	Select other symptoms of interest that are present: neck pain (please choose this if the patient is documented to have isolated neck pain or tenderness without documented meningeal signs/neck stiffness), chest pain/tightness

SECTION 4. LABORATORY STUDIES

4.1	**Laboratory Studies**	
4.1.1	Elevated troponin	Select if Troponin I, Troponin T, Troponin C, or high sensitivity Troponin (hsT) are elevated above the lab normal range for the patient as indicated in the electronic medical record.
4.1.2	Elevated BNP/NT-pro BNP	Select if B-type natriuretic peptide (BNP) or N-terminal (NT)-pro hormone BNP (NT-pro BNP) are elevated above the lab normal range for the patient as indicated in the electronic medical record.

4.1.3	Elevated AST	Select if aspartate aminotransferase (AST) is elevated above the lab normal range for the patient as indicated in the electronic medical record.
4.1.4	Elevated ALT	Select if alanine aminotransferase (ALT) is elevated above the lab normal range for the patient as indicated in the electronic medical record.
4.1.5	Elevated creatinine	Select if creatinine (Cr) is elevated above the lab normal range for the patient as indicated in the electronic medical record.
4.2	**CSF Studies**	
4.2.1	White blood count	The number of white blood cells (WBC) documented in cerebrospinal fluid (CSF) after a lumbar puncture. If more than one lumbar puncture was performed, report the highest WBC count.
4.2.2	Protein	The protein level documented in cerebral spinal fluid (CSF) after a lumbar puncture. If more than one lumbar puncture was performed, report the protein level from the lumbar puncture with the highest WBC result.
4.2.3	Glucose	The glucose level documented in cerebral spinal fluid (CSF) after a lumbar puncture. If more than one lumbar puncture was performed, report the glucose level from the lumbar puncture with the highest WBC result.
4.3	**SARS-COV-2 testing during hospitalization for current MIS-C illness**	**Important: This refers to SARS-CoV-2 testing that occurred during the patient's hospitalization for their current episode of MIS-C. If the patient had more than one SARS-CoV-2 test performed during hospitalization, report the first positive test. If the patient had a SARS-CoV-2 viral test within 60 days of MIS-C onset but before hospital admission, report this test result in 1.7, not in this section (4.3).**
4.3.1	SARS-CoV-2 antibody (IgG or IgM)	Select the appropriate test result: ☐ Positive ☐ Negative ☐ Not done If any SARS-CoV-2 serology was performed, please report result here; it is not necessary to know if this was an IgG or IgM or combined assay.
4.3.1.1	If performed, date (MM/DD/YYYY)	Date of SARS-CoV-2 antibody test
4.3.1.2	Antibody type	Select the appropriate type of SARS-Cov-2 antibody test obtained: ☐ Anti-Spike ☐ Anti-Nucleocapsid ☐ Anti-Spike and Anti-Nucleocapsid ☐ Unknown
4.3.2	SARS CoV-2 viral test	Select the appropriate test result: ☐ Positive ☐ Negative ☐ Not done
4.3.2.1	If performed, date (MM/DD/YYYY)	Date of SARS-CoV-2 viral test
4.3.2.2	SARS CoV-2 viral test type	Select the appropriate type of SARS-Cov-2 viral test obtained: ☐ Antigen ☐ RT-PCR*/NAAT** ☐ Unknown *Reverse transcription polymerase chain reaction **Nucleic acid amplification test

SECTION 5. IMAGING STUDIES AND COMPLICATIONS

Important: Imaging results from the entire MIS-C hospitalization are reported in aggregate: If any studies from a particular type of imaging modality are abnormal during hospitalization, select "abnormal" for that imaging modality. If all studies from a particular type of imaging modality are normal throughout hospitalization, select "normal" for that imaging modality.

5.1	**Cardiac Imaging**	
5.1.1	Echocardiogram	Select "normal" if all echocardiograms obtained during MIS-C evaluation were normal. Select "abnormal" if any of the echocardiograms obtained were abnormal. Select "not done" if no echocardiograms were performed.
5.2	**Chest Imaging**	
5.2.1	Chest X-ray	Select "normal" if all chest x-rays obtained during MIS-C evaluation were normal. Select "abnormal" if any of the chest x-rays obtained were abnormal. Select "not done" if no chest x-rays were performed.
5.2.2	Chest computed tomography (CT)	Select "normal" if all chest CTs obtained during MIS-C evaluation were normal. Select "abnormal" if any of the chest CTs obtained were abnormal. Select "not done" if no chest CTs were performed.
5.3	**Abdominal Imaging**	

5.3.1	Abdominal ultrasound (US)	Select “normal” if all abdominal ultrasounds obtained during MIS-C evaluation were normal. Select “abnormal” if any of the abdominal ultrasounds obtained were abnormal. Select “not done” if no abdominal ultrasounds were performed.
5.3.2	Abdominal X-ray	Select “normal” if all abdominal X-rays obtained during MIS-C evaluation were normal. Select “abnormal” if any of the abdominal X-rays obtained were abnormal. Select “not done” if no abdominal X-rays were performed.
5.3.3	Abdominal computed tomography (CT)	Select “normal” if all abdominal CTs obtained during MIS-C evaluation were normal. Select “abnormal” if any of the abdominal CTs obtained were abnormal. Select “not done” if no abdominal CTs were performed.

Please indicate clinical findings identified during hospitalization for MIS-C illness. Select all complications from the list below that were present during the patient’s MIS-C illness. If the complication was not present or if it is unknown if the complication was present, leave blank.

5.4	**Cardiac Complications**	Select all cardiac complications that are present. If a cardiac complication is not present or if it is unknown if it is present, leave blank. If the patient has a cardiac complication that is not listed, note this in “Other cardiac complication, specify.”
	Myocarditis	Select if myocarditis is documented on cardiac imaging or documented as a clinical diagnosis.
	Coronary artery dilatation, ectasia, or aneurysm on cardiac imaging	Select if coronary artery dilatation, ectasia, or aneurysm are documented on cardiac imaging such as echocardiogram, coronary angiogram, or cardiac magnetic resonance imaging (MRI). The wording “prominent coronaries” do not meet criteria unless the Z-score is >2 or the terms “dilatation, ectasia, or aneurysm” are used.
	Left ventricular systolic dysfunction	Select if the patient is documented to have left ventricular systolic dysfunction. If the medical record notes “reduced ejection fraction” or “low ejection fraction” without specifying a percentage, select left ventricular systolic dysfunction and leave the percentage selection blank. If the medical record notes “cardiac dysfunction” without specifying left or right ventricle, enter “cardiac dysfunction” under “other cardiac complication, specify.”
	Lowest LV Ejection fraction:	Select the lowest left ventricular ejection fraction reported on echocardiogram: <50% or 50% to <55%
	Right ventricular dysfunction	Select if the patient is documented to have right ventricular dysfunction or right ventricular diastolic or systolic dysfunction. If the medical record notes “cardiac dysfunction” without specifying left or right ventricle, enter “cardiac dysfunction” under “other cardiac complication, specify.”
	Pericarditis/Pericardial effusion	Select if pericarditis or pericardial effusion are documented on imaging or documented in the medical record.
	Congestive heart failure	Select if congestive heart failure is documented in the medical record during MIS-C hospitalization.
	Other cardiac complication, specify	Enter other cardiac complications here that are documented during the MIS-C hospitalization that do not fall into any of the above cardiac complication categories.
5.5	**Respiratory Complications**	
	Acute Respiratory Distress Syndrome (ARDS)	Select if ARDS is documented on imaging or documented as a clinical diagnosis.
	Pneumonia	Select if pneumonia is documented on imaging or documented as a clinical diagnosis.
	Other respiratory complication, specify	Enter other respiratory complications or chest imaging findings here that are documented during the MIS-C hospitalization and do not fall into any of the above respiratory complication categories.
5.6	**Hypotension or shock**	

	Hypotension	Select if hypotension is documented in the medical record. Abstractors are not expected to make a diagnosis of hypotension based off of reported blood pressures.
	Shock	Select if shock is documented in the medical record or if the patient received vasopressor medications (epinephrine, norepinephrine, milrinone, vasopressin, phenylephrine, dopamine).
5.7	**Gastrointestinal Complications**	
	Appendicitis/inflamed appendix	Select if documented in the medical record or if any of the following are reported on abdominal imaging: appendicitis, thickened appendix thickened, inflamed tubular structure in the right lower quadrant. Abstractors are not expected to interpret imaging findings themselves.
	Cholecystitis/inflamed gallbladder	Select if documented in the medical record or any of the following are reported on abdominal imaging: cholecystitis, gall bladder wall thickening, gall bladder sludge, gall bladder enlargement/hydrops, pericholecystic fluid. Abstractors are not expected to interpret imaging findings themselves.
	Mesenteric adenitis	Select if mesenteric adenitis (e.g. mesenteric lymphadenopathy, enlarged mesenteric lymph nodes) is documented in the medical record or documented on abdominal imaging. Abstractors are not expected to interpret imaging findings themselves.
	Other abdominal complication, specify	Enter other abdominal complications or abdominal imaging findings here that are documented during the MIS-C hospitalization and do not fall into any of the above abdominal complication categories. Abdominal findings that do not need to be reported include: cholelithiasis/gall stones, hepatic steatosis/fatty liver, splenic cysts or calcifications, absent kidney, horseshoe kidney, pelvic kidney, ileus, diverticula without inflammation, ovarian cyst, bicornuate uterus, debris in bladder, renal stones without inflammation, and hernias.
5.8	**Hematologic Complications**	
	Thrombocytopenia (platelets < 150,000 cells/microliter)	Select if thrombocytopenia is documented in the medical record or if the platelet count is <150,000 cells/microliter during the MIS-C hospitalization.
	Lymphopenia (Absolute lymphocyte count/ALC <1000 cells/µL)	Select if lymphopenia is documented in the medical record or if the absolute lymphocyte count (ALC) is <1,000 cells/microliter during the MIS-C hospitalization. If the absolute lymphocyte count is not reported, calculate the absolute lymphocyte as follows: *Total white blood cell (WBC) count x 1000 x percent lymphocytes (expressed as a decimal).* The WBC count and percent lymphocytes numbers should be obtained from the same blood sample/complete blood count.
5.9	**Other Complications**	
	Meningitis/encephalitis	Select if documented in the medical record or documented on brain imaging. This includes Acute Disseminated Encephalomyelitis (ADEM).
	Encephalopathy	Select if documented in the medical record.
	Other neurologic complication, specify	Select if the patient had a neurologic complication during their MIS-C hospitalization that does not fall into any of the above neurologic complication categories and specify the complication. Examples of other neurologic complications include: new onset seizures, acute cerebral edema, stroke/ cerebrovascular accident (CVA), Guillain-Barre syndrome, new onset paralysis or weakness.
	Retropharyngeal edema/phlegmon on head/ neck ultrasound or CT	Select if the patient has retropharyngeal edema/swelling or a phlegmon seen on head/neck ultrasound or computed tomography (CT).
	Lymph nodes ≥1.5 cm on head/neck ultrasound or CT	Select if the patient has enlarged lymph nodes >1.5 cm in diameter seen on head/neck ultrasound or computed tomography (CT).

	Other complication, specify	Enter other relevant complications or imaging findings here that are documented during the MIS-C hospitalization and do not fall into any of the above complication categories.

SECTION 6 CLINICAL MANAGEMENT

6.1	Please indicate all treatments or medical interventions that the patient received for this illness. Select all that apply:	
	High flow nasal cannula (HFNC)	Select if the patient received high flow oxygen via nasal cannula or face mask. Other names for high flow oxygen include Vapotherm or Optiflow, but there may be others.
	CPAP or BiPAP	Select if the patient received respiratory support through continuous positive airway pressure (CPAP) bilevel positive airway pressure (BiPAP).
	Invasive mechanical ventilation (intubation)	Select if the patient was intubated and placed on mechanical ventilation or a "ventilator."
	ECMO	Select if the patient was placed on extracorporeal membrane oxygenation (ECMO) or extracorporeal life support (ECLS).
	Vasoactive medications (e.g. epinephrine, milrinone, norepinephrine, or vasopressin)	Select if the patient was placed on intravenous vasopressor medication. These include epinephrine, milrinone, norepinephrine, vasopressin, phenylephrine, or dopamine. Use of intramuscular (IM) epinephrine (i.e. an "epi pen") should not be reported here.
	Steroids (e.g. prednisone, methylprednisolone)	Select if the patient was placed on oral or intravenous steroids. Examples include methylprednisolone (e.g. Solumedrol), prednisolone, and prednisone. Steroid inhalers such as fluticasone (Flovent), budesonide (Pulmicort), mometasone (Asmanex), and beclomethasone (Qvar) should not be reported here.
	Immune modulators (e.g. anakinra, infliximab)	Select if the patient was placed on an immune modulating medication. Examples include anakinra (Kineret) and infliximab (Remicade). Remdesivir therapy should not be reported here.
	Dialysis or continuous renal replacement (CRRT)	Select if the medical record notes that the patient was placed on new dialysis or continuous renal replacement therapy. Do not select if the patient is on chronic dialysis.
	First IVIG	Select if the patient received one dose of intravenous immunoglobulin (IVIG). Brand names for IVIG include Gammagard, Flebogamma, Gamunex, Privigen, and Octagam.
	Second IVIG	Select if the patient received a second dose of intravenous immunoglobulin (IVIG). Brand names for IVIG include Gammagard, Flebogamma, Gamunex, Privigen, and Octagam.

SECTION 7 COVID-19 VACCINE INFORMATION

7.1	Has the patient received a COVID-19 vaccine?	Select "yes" if the patient ever received a COVID-19 vaccine BEFORE MIS-C onset. Select "no" if they have never received a COVID-19 vaccine. Select "unknown" if unknown. Examples of COVID-19 vaccines include Pfizer-BioNTech (Comirnaty/BNT162b2/ tozinameran), Moderna (mRNA-1273/elasomeran), Janssen/ Johnson & Johnson (J&J/Ad26.COV2.S), and Novavax (Nuvaxovid/ Covovax).
7.2	If yes, how many doses?	Report the total number of COVID-19 vaccine doses the patient has received regardless of doses were from different manufacturers.
7.3	Date vaccine dose(s) received	
7.3.1	Vaccine dose 1	Report the date of COVID-19 vaccine dose 1 (MM/DD/YYYY)
	Vaccine manufacturer dose 1	Report the manufacturer of the first COVID-19 vaccine dose the patient received. E.g. Pfizer, Moderna, Janssen/J&J, or other.
7.3.2	Vaccine dose 2	Report the date of COVID-19 vaccine dose 2 (MM/DD/YYYY)

	Vaccine manufacturer dose 2	Report the manufacturer of the second COVID-19 vaccine dose the patient received. E.g. Pfizer, Moderna, Janssen/J&J, or other.
7.3.3	Vaccine dose 3	Report the date of COVID-19 vaccine dose 3 (MM/DD/YYYY)
	Vaccine manufacturer dose 3	Report the manufacturer of the third COVID-19 vaccine dose the patient received. E.g. Pfizer, Moderna, Janssen/J&J, or other.
7.3.4	Vaccine dose 4	Report the date of COVID-19 vaccine dose 4 (MM/DD/YYYY)
	Vaccine manufacturer dose 4	Report the manufacturer of the fourth COVID-19 vaccine dose the patient received. E.g. Pfizer, Moderna, Janssen/J&J, or other.
7.3.5	Vaccine dose 5	Report the date of COVID-19 vaccine dose 5 (MM/DD/YYYY)
	Vaccine manufacturer dose 5	Report the manufacturer of the fifth COVID-19 vaccine dose the patient received. E.g. Pfizer, Moderna, Janssen/J&J, or other.

Appendix A: Primary and secondary immunodeficiencies

Primary	Specific immunodeficiency
Primary	Specific immunodeficiency
B-lymphocyte (humoral)	Severe antibody deficiencies (e.g., X-linked agammaglobulinemia and common variable immunodeficiency)
	Less severe antibody deficiencies (e.g., selective IgA deficiency and IgG subclass deficiency)
T-lymphocyte (cell-mediated and humoral)	Complete defects (e.g., SCID disease, complete DiGeorge syndrome)
	Partial defects (e.g., most patients with DiGeorge syndrome, Wiskott-Aldrich syndrome, ataxia- telangiectasia)
	Interferon-gamma/ Interleukin 12 axis deficiencies
Complement	Persistent complement, properdin, or factor B deficiency
	Taking eculizumab (Soliris), and/or ravulizumab (Ultomiris)
Phagocytic function	Chronic granulomatous disease
	Phagocytic deficiencies that are undefined or accompanied by defects in T-cell and NK cell dysfunction (such as a Chediak-Higashi syndrome, Leukocyte Adhesion Deficiency [LAD], and myeloperoxidase deficiency)
Secondary	HIV/AIDS
	Generalized malignant neoplasm, transplantation, immunosuppressive or radiation therapy
	Asplenia
	Chronic renal disease
	Corticosteroids dose equivalent to either ≥2 mg/kg of body weight or ≥20 mg/day of prednisone or equivalent for persons who weigh >10 kg when administered for ≥14 consecutive days

Abbreviations: AIDS = acquired immunodeficiency syndrome; BCG = bacille Calmette-Guérin; HepB = hepatitis B; Hib = *Haemophilus influenzae* type b; HIV = human immunodeficiency virus; IG = immunoglobulin; IGIV = immune globulin intravenous; IgA = immune globulin A; IgG = immune globulin G; SCID = severe combined immunodeficiency