

Clinical Guideline- Acute COVID-19

Go directly to [Care Map Flowchart](#)



This guideline document does not supersede the clinical judgment of a provider regarding the care that is ultimately ordered for a given patient. [Click to see full disclaimer.](#)

Inclusion of those patients with an acute covid-19 infection or suspected acute infection

Recommendations made by expert consensus and guided by current national recommendations



Executive Owner: Chief Medical Officer



[References](#)



LIPPINCOTT

Emergency Department Care: Acute COVID-19



CAUTION:
Recommendations for diagnosis and treatment of this disease process are rapidly evolving. This guideline has been developed based on consensus recommendations to date .

Triage

- Nurse performs initial assessment and assigns ESI* level.

*ESI = Emergency Severity Index

Provider Evaluation: History and Physical Exam suggestive of acute COVID-19 infection or with confirmed infection. Initiate Isolation precautions.

Determine Severity of Illness



Additional Evaluation and treatment based on clinical history and exam

- For mild/moderated disease not requiring hospitalization addition evaluation determined by clinical history and exam
- Note: Cardiac evaluation to be determined by clinical symptoms as needed

Meets Discharge criteria

<12 yrs or <40kg
>12yrs wo High risk condition

>12 and >40kg with a High risk condition

Admit Inpatient unit Moderate to Severe Disease unless Requiring above 50% FIO2 or care is escalating

Admit PICU anyone with critical disease

Discharge Instructions should include recommendations for Return to play. Outpatient Rx Recs

Treatment Principles

Severity of Illness

Severity of Illness (Not all necessary in each category)	
Asymptomatic, Exposed	<ul style="list-style-type: none"> •Positive SARS-CoV-2 PCR without clinical symptoms (e.g.,+ test done for pre-operative/admission screening)
Mild/Moderate	<ul style="list-style-type: none"> •Upper respiratory tract infection symptoms, including: <ul style="list-style-type: none"> • Fever, sore throat, cough • Myalgias • No respiratory distress • No O2 requirement • Adequate hydration
Severe	<ul style="list-style-type: none"> •New O2 requirement •Not rapidly escalating •Not requiring CPAP, BiPap, or intubation •Escalation in baseline respiratory support, PICU not required
Critical	<ul style="list-style-type: none"> •Hypoxia or respiratory distress requiring •Invasive or non-invasive ventilation •SIRS/sepsis/multisystem organ failure •Escalation in baseline •Invasive or non-invasive ventilation requiring PICU admission •Rapidly deteriorating clinical condition that does not yet meet these criteria

Treatment Recommendations for Non hospitalized Children: [NIH Guidelines](#)

Risk of Severe COVID-19	Panel's Recommendations	
	Aged 12–17 years	Aged <12 years
Symptomatic, Regardless of Risk Factors	<ul style="list-style-type: none"> • Provide supportive care (AIII). 	<ul style="list-style-type: none"> • Provide supportive care (AIII).
High Risk^{a,b}	<ul style="list-style-type: none"> • Use 1 of the following options (listed in order of preference):^c <ul style="list-style-type: none"> ○ Ritonavir-boosted nirmatrelvir (Paxlovid) within 5 days of symptom onset (BIII) ○ Remdesivir within 7 days of symptom onset (CIII) 	<ul style="list-style-type: none"> • Ritonavir-boosted nirmatrelvir is not authorized by the FDA for use in children aged <12 years. • There is insufficient evidence to recommend either for or against the routine use of remdesivir. Consider treatment based on age and other risk factors.
Intermediate Risk^{b,d}	<ul style="list-style-type: none"> • There is insufficient evidence to recommend either for or against the use of any antiviral therapy. Consider treatment based on age and other risk factors. 	<ul style="list-style-type: none"> • There is insufficient evidence to recommend either for or against the routine use of remdesivir.
Low Risk^{b,e}	<ul style="list-style-type: none"> • Manage with supportive care alone (BIII). 	<ul style="list-style-type: none"> • Manage with supportive care alone (BIII).

Each recommendation in the Guidelines receives a rating for the strength of the recommendation (A, B, or C) and a rating for the evidence that supports it (I, IIa, IIb, or III). See [Guidelines Development](#) for more information.

Outpatient Treatments:

- Outpatient therapies currently available
 - Nirmatrelvir-ritonavir (Paxlovid™)
 - Background
 - Nirmatrelvir-ritonavir (Paxlovid) is an oral antiviral drug combination with activity against SARS-CoV-2. Nirmatrelvir is a protease inhibitor, which acts to inhibit viral replication by cleaving viral polyproteins involved in replication. Ritonavir is co-administered, and “boosts” the activity of nirmatrelvir by inhibiting metabolism of nirmatrelvir via CYP3A4, thus increasing the concentration of nirmatrelvir to levels required for therapeutic effect. Paxlovid has similar antiviral activity against the alpha, beta, gamma, and lambda variants; data are limited evaluating its activity against omicron, but early in vitro data suggest it is active against omicron
 - Inclusion:
 - Age ≥ 12 years AND ≥ 40 kg (not available and not recommended for younger children) AND
 - Positive SARS-CoV-2 PCR or antigen test AND
 - Outpatient with mild-moderate symptoms AND
 - Within 5 days of symptom onset (but as soon as possible after symptom onset) AND
 - Able to swallow pills (tabs cannot be crushed) AND
 - High risk for progression to severe disease AND
 - No significant drug-drug interactions listed as contraindications ([review the healthcare provider fact sheet](#))

Category	Dose/Duration	Dose Adjustment
Adults ≥ 12 years and ≥ 40 kg	<ul style="list-style-type: none"> •Nirmatrelvir 300 mg (2 x 150 mg tablets) and ritonavir 100 mg (1 x 100 mg tablet), with all three tablets taken together twice daily x 5 days. • •Note that nirmatrelvir or ritonavir tablets cannot be crushed. • •Both drugs must be taken together, for all of the doses, and for the full 5 days. • •If a dose is missed and it is within 8 hours of the time the dose is due, take the dose as soon as possible and resume the usual dosing schedule. If the dose is missed by more than 8 hours, skip the missed dose and resume at the next scheduled time. 	<ul style="list-style-type: none"> •Renal failure: <ul style="list-style-type: none"> •GFR ≥ 60 - < 90: no adjustment •GFR ≥ 30 - < 60: nirmatrelvir 150 mg (1 x 150 mg tablet) and 100 mg ritonavir (1 x 100 mg tablet) together twice daily x 5 days •GFR < 30: not recommended • •Hepatic failure: <ul style="list-style-type: none"> •Not recommended for patients with severe hepatic impairment (Child-Pugh Class C); use with caution in mild or moderate (Child-Pugh Class A or B) hepatic impairm

Management of Hospitalized Patients: [NIH Guidelines](#)

Disease Severity	Panel's Recommendations
Hospitalized for COVID-19	For children aged ≥ 12 years admitted for COVID-19, use prophylactic anticoagulation unless contraindicated (BIII) . ^a
Does Not Require Supplemental Oxygen	<p>For children admitted for COVID-19 who are at the highest risk of progression to severe COVID-19,^b consider using remdesivir^c for children aged 12–17 years (CIII). There is insufficient evidence for using remdesivir in children aged 28 days to <12 years.</p> <p>For children admitted for reasons other than COVID-19 who have mild to moderate COVID-19 and are at the highest risk of progression,^b refer to Therapeutic Management of Nonhospitalized Children With COVID-19.</p>
Requires Conventional Oxygen ^d	<ul style="list-style-type: none"> •Use 1 of the following options:Remdesivir^c (BIII) •Dexamethasone plus remdesivir^c for children with increasing oxygen needs, particularly adolescents (BIII)
Requires Oxygen Through High-Flow Device or NIV ^e	<ul style="list-style-type: none"> •Use 1 of the following options:Dexamethasone (BIII) •Dexamethasone plus remdesivir^c (BIII) <p>For children who do not have rapid (e.g., within 24 hours) improvement in oxygenation after initiation of dexamethasone, baricitinib^f or tocilizumab can be considered for children aged 12–17 years (BIII) and for children aged 2–11 years (CIII).</p>
Requires MV or ECMO ^g	<p>Dexamethasone^g (AIII)</p> <p>For children who do not have rapid (e.g., within 24 hours) improvement in oxygenation after initiation of dexamethasone, baricitinib^f or tocilizumab may be considered for children aged 12–17 years (BIII) and for children aged 2–11 years (CIII)</p>

Additional Principles

- Weighing the risk factors for thrombosis and bleeding, some Panel members would use prophylactic anticoagulation for children aged <12 years who are hospitalized for COVID-19.
- For children hospitalized for other reasons: children who are severely immunocompromised regardless of COVID-19 vaccination status and those who are unvaccinated and have additional risk factors for progression (see Therapeutic Management of Nonhospitalized Children With COVID-19).
- The clinical benefit of remdesivir is greatest if it is initiated within 10 days of symptom onset. Remdesivir should be given for 5 days or until hospital discharge, whichever comes first.
- Conventional oxygen refers to oxygen supplementation that is not high-flow oxygen, NIV, MV, or ECMO.
- Patients who are receiving NIV or MV at baseline and require a substantial increase in baseline support should be treated per the recommendations for patients requiring new NIV or MV.
- Tofacitinib is an alternative if baricitinib is not available .
- For children who started receiving remdesivir before admission to the ICU, the remdesivir should be continued to complete the treatment course.

Treatment Principles continued

- A. Anticoagulant prophylaxis is suggested for any patient with cardiac dysfunction and/or who had a markedly [elevated](#) D-dimer (> 2.5) or have a known hypercoagulable state.
- 1) Mechanical thromboprophylaxis with SCDs if possible
 - 2) Indications for low dose anticoagulation per scoring: Additional factors to consider
 - 1) Hospitalized with severe/critical COVID-19 AND one or more of the following risk factors:
 - 1) D-dimer >2.5 mcg/mL
 - 2) Age >12 years or post-pubertal
 - 3) Obesity (>95th %ile)
 - 4) Concomitant estrogen-containing oral contraceptive use
 - 5) First degree family history of unprovoked VTE
 - 6) History of thrombosis or acquired or inherited thrombophilia
 - 7) Central venous catheter
 - 8) Any rhythm abnormalities: heart block, etc.
 - 9) Inotropic infusion requirement
 - 10) Sedated and muscle-relaxed or complete immobility
 - 11) Active malignancy, nephrotic syndrome, flare of underlying inflammatory disease state, sickle cell VOC
 - 12) Congenital or acquired heart disease with venous stasis or impaired venous return
- B. For all patients, assure [VTE risk assessment per ETCH tool is](#) performed, and treatment initiated per scoring recommendations.

High Risk Conditions:

Criteria for Identifying High Risk Individuals

Conditions	Risk Level by Vaccination Status ^a		Up to Date
	Unvaccinated	Primary Series	
Strong or Consistent Association With Progression to Severe COVID-19			
<ul style="list-style-type: none"> •Moderately or severely immunocompromised (see Special Considerations in People Who Are Immunocompromised) 	High		
<ul style="list-style-type: none"> •Obesity (BMI ≥95th percentile for age), especially severe obesity (BMI ≥120% of 95th percentile for age)^b •Medical complexity with dependence on respiratory technology^c •Severe neurologic, genetic, metabolic, or other disability that results in impaired airway clearance or limitations in self-care or activities of daily living •Severe asthma or other severe chronic lung disease requiring ≥2 inhaled or ≥1 systemic medications daily •Severe congenital or acquired cardiac disease •Multiple moderate to severe chronic diseases 	High	Intermediate	
Moderate or Inconsistent Association With Progression to Severe COVID-19			
<ul style="list-style-type: none"> •Aged <1 year •Prematurity in children aged ≤2 years •Sickle cell disease •Diabetes mellitus (poorly controlled) •Nonsevere cardiac, neurologic, or metabolic disease^d 	Intermediate		
Weak or Unknown Association With Progression to Severe COVID-19			
<ul style="list-style-type: none"> •Mild asthma •Overweight •Diabetes mellitus (well controlled) 	Low		

Return to play: CHOP Guideline

- **General Principals(Click on link for specifics)**
 - **For ALL patients who are cleared for return to sports/exercise**
 - Whenever resuming activity (competitive sports, physical education class, recreational activities), patients should [slowly advance activity and monitor for further symptoms](#) .
 - Any concern for clinical deterioration or cardiac symptoms should warrant further cardiac evaluation and discontinuation of sports/exercise until further notice.
 - **Multisystem Inflammatory Syndrome in Children (MIS-C)**
 - MIS-C is a severe inflammatory response that occurs in a subset of patients approximately 2-6 weeks after SARS-CoV-2 infection. **Patients with MIS-C (regardless of severity) should be followed by pediatric cardiology outpatient with return to sports dictated by pediatric cardiology and often by a multidisciplinary team.**

General Discharge Instructions

- [] tested positive for COVID today which is causing their symptoms. They will likely be sick for about 1 week, possibly longer. There is no specific treatment for their COVID at this time, however if they worsen with difficulty breathing or significant abdominal pain, vomiting, or diarrhea, they may need specific treatment in the hospital at that time.
 - Push fluids, and encourage rest. Ok to give both ibuprofen and Tylenol.
 - Give Motrin (ibuprofen) [] mls every 6 hours or Tylenol (acetaminophen) [] mls every 4 hours as needed for fever.
 - Ibuprofen (100mg/5mL)
 - Acetaminophen (160mg/5mL)
 - See your child's doctor in 10 days for a recheck or in 3 days if not improving.
 - Return for worsening symptoms.
- Please be aware, they are at a very small risk for developing MIS-C from COVID. This is a condition where different body parts become inflamed either during or about 2-4 weeks after a COVID infection and can present with fever, abdominal pain, rash, swollen lymph nodes, red eyes, headache or irritability. If they have these symptoms for at least 4 days, OR seems very sick, please call your doctor for evaluation or return to the ED.

- Quarantine:
- They will need to quarantine for 5 days AND have no fever for 24 hours.

Infection Prevention

- Isolation per disease/symptom specific guidelines
- FRI precautions only necessary if an acute COVID infection is suspected or confirmed.

References/ Institutional Guidelines

- [AAP Guidance](#)
- [NIH Guidelines](#)
- [**IDSA Guidelines on the Treatment and Management of Patients with COVID-19.**](#)
[Published by IDSA on 5/27/2021. Last updated, 3/1/2023](#)
- [CDC interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease \(COVID-19\)](#)
- CHOP Clinical guideline:
[HTTPs://www.chop.edu/clinical-pathway/covid-disease-clinical-pathway](#)

Return to Page 1: [Guideline](#)

Return to Page 2: [Guideline](#)

Physician Disclaimers: Clinical Guideline

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Return to Page 1: [Guideline](#)

Return to Page 2: [Guideline](#)