

Ambulatory Adult Treatment Guidance for COVID-19

This updated guidance is intended for use in management of patients with COVID-19 in the ambulatory setting. There will be ongoing additions and modifications based on your questions and as the science evolves. These principles are based on a variety of published studies and guidelines from leading national organizations. For additional information regarding inpatient COVID management, please refer to [these treatment guidelines](#).

Admission Criteria for patients with COVID-19

Most patients with COVID-19 will not require hospitalization and can be managed with supportive care and measures in place for careful monitoring. Progression of dyspnea and/or hypoxemia are concerning signs that require further evaluation for acute management and/or hospitalization. Pulse oximetry is an important tool for monitoring patients but should not be considered a stand-alone parameter for determining need for admission. Dark skinned patients may have occult hypoxemia which is not detected by pulse oximetry. Disposition will be determined on a case-by-case basis taking into consideration underlying chronic conditions, the ability for self-care at home and their ability to engage in monitoring.

Diagnostic Testing

Use the following resources to stay up-to-date on testing:

- [ChristianaCare Diagnostic Testing Overview & FAQ](#)
- [CDC's COVID-19 Testing: What you Need to Know](#)
- [Nasopharyngeal Specimen Collection for COVID-19](#)

Risk of Disease based on Age and Co-morbidities

Adults from 30-80 years of age account for most confirmed cases with most deaths occurring in persons aged 65 years or older. During the Omicron surge, younger patients are more affected and, in general, illness has been milder in nature.

Based upon available information to date, those at high-risk for severe illness from COVID-19 include:

- People aged 60 years and older
- Smoking tobacco or vaping
- People who live in a nursing home or long-term care facility
- Other high-risk conditions could include:
 - People with chronic lung disease or moderate to severe asthma
 - People with chronic kidney disease
 - People who have cardiovascular disease, including cardiomyopathy
 - People with diabetes
 - People who are on immunosuppressive therapy

- People who are immunocompromised including cancer treatment
 - Obesity (BMI >30)
 - Transplant patients
 - Sickle cell disease
 - HIV infection
- Treatment is supportive for most non-hospitalized patients with COVID-19.
 - The vast majority of COVID cases currently are being caused by the Omicron variant of SARS-CoV-2. This variant is susceptible to several agents which are available at ChristianaCare.

The following agents have been recommended by NIH and most of these bullet points are directly from the [NIH guideline](#).

For non-hospitalized patients with mild to moderate COVID-19 who are at high risk of disease progression, the NIH Panel recommends using one of the following therapeutics (listed in order of preference):

- **Nirmatrelvir 300 mg with ritonavir 100 mg (Paxlovid)** orally twice daily for 5 days, initiated as soon as possible and within 5 days of symptom onset in those aged ≥ 12 years and weighing ≥ 40 kg (**Alla**).
 - Paxlovid requires a dose reduction for patients with moderate renal impairment (eGFR ≥ 30 to < 60 mL/min): 150 mg nirmatrelvir (one 150 mg tablet) with 100 mg ritonavir (one 100 mg tablet), with both tablets taken together twice daily for 5 days
 - Paxlovid is not recommended in patients with severe renal impairment (eGFR < 30 mL/min)
 - Paxlovid is not recommended in patients with severe hepatic impairment (Child-Pugh Class C)
 - Ritonavir-boosted nirmatrelvir (Paxlovid) has significant and complex drug-drug interactions, primarily due to the ritonavir component of the combination.
 - Before prescribing ritonavir-boosted nirmatrelvir (Paxlovid), clinicians **should carefully review the patient's concomitant medications**, including over-the-counter medications and herbal supplements, to evaluate potential drug-drug interactions. See the [Panel's statement on the drug-drug interactions for ritonavir-boosted nirmatrelvir \(Paxlovid\)](#) for details. Additionally, refer to the University of [Liverpool's COVID-19 Drug Interaction Checker](#).
- **Sotrovimab 500 mg** as a single IV infusion over 30 minutes, administered as soon as possible and within 7 days of symptom onset in those aged ≥ 12 years and weighing ≥ 40 kg who live in areas with a high prevalence of the Omicron variant of concern (VOC) (**Alla**).
 - Because Omicron has become the dominant VOC in the United States and real-time testing to identify rare, non-Omicron variants is not routinely available, the NIH **recommends against** using **bamlanivimab plus etesevimab** or **casirivimab plus imdevimab (Alll)**

- Sotrovimab should be administered in a setting where severe hypersensitivity reactions, such as anaphylaxis, can be managed. Patients should be monitored during the infusion and observed for at least 1 hour after infusion.
- **Remdesivir 200 mg IV** on Day 1, followed by **remdesivir 100 mg IV** daily on Days 2 and 3, initiated as soon as possible and within 7 days of symptom onset in those aged ≥ 12 years and weighing ≥ 40 kg (**B1a**).
 - Remdesivir is not recommended in patients with eGFR < 30 mL/min due to accumulation of the excipient sulfobutylether-beta-cyclodextrin. However, the clinical significance of this accumulation is uncertain and significant toxicity with a short duration of therapy (e.g., 3 days) is unlikely. Therefore, providers should have a risk-benefit discussion with patients with severe renal impairment, as benefits may outweigh the risks in select patients.
 - Providers should consider discontinuation of remdesivir if ALT levels increase to greater than 10 times the upper limit of normal. Discontinuation is recommended if ALT elevation is accompanied by signs or symptoms of liver inflammation.
 - Because remdesivir requires IV infusion for 3 consecutive days, there may be logistical constraints to administering remdesivir in many settings.
 - Remdesivir should be administered in a setting where severe hypersensitivity reactions, such as anaphylaxis, can be managed. Patients should be monitored during the infusion and observed for at least 1 hour after infusion.
- **Molnupiravir 800 mg** orally twice daily for 5 days, initiated as soon as possible and within 5 days of symptom onset in those aged ≥ 18 years **ONLY** when none of the above options can be used (**C1a**).
 - The FDA EUA states that **molnupiravir is not recommended for use in pregnant patients due to concerns about the instances of fetal toxicity** observed during animal studies. However, when other therapies are not available, pregnant people with COVID-19 who are at high risk of progressing to severe disease may reasonably choose molnupiravir therapy after being fully informed of the risks, particularly those who are beyond the time of embryogenesis (i.e., >10 weeks' gestation). The prescribing clinician should document that a discussion of the risks and benefits occurred, and that the patient chose this therapy.
 - There are no data on the use of molnupiravir in patients who have received COVID-19 vaccines, and the risk-to-benefit ratio is likely to be less favorable because of the lower efficacy of this drug.
- At ChristianaCare, the logistics of prescribing these agents include the following:
 - If providers wish to use ChristianaCare pharmacies for EUA ordering, they must go through the Center for Virtual Health's COVID-19 Clinic.
 - Providers are free to send their patients to other pharmacies, but it is important to know that they are taking on the responsibility of adhering to EUA guidelines for oral antivirals. Non-ChristianaCare pharmacies which have COVID antivirals can be found [here](#).
 - We do accept referrals from patients as we do not want to limit this resource only to patients who have providers referring them. Patients may

call 302-428-2121 to request an evaluation for treatment, which may include monitoring and/or medication.

- For providers wishing to use ChristianaCare pharmacies, we have updated the PowerChart PowerForm referral tool to include clinical and demographic factors that influence patients' risk for hospitalization: severe immunodeficiency diagnoses; vaccination status; BMI; age; chronic conditions, and pregnancy. Data from the past two years indicate that all of these factors have been statistically significant drivers of hospitalization for symptomatic COVID-19 patients. In addition, these medications are most effective when given within days of symptom onset for patients who are COVID-19 positive.
 - Moderate/high risk patients will be monitored and considered for treatment.
 - Low-risk patients can be given self-care information and referred to other patient-facing workstreams in production.
 - Form completion does not guarantee an immediate video visit. A video visit will occur if the patient is identified as clinically worsening by Twistle or having provider evaluation for treatment.
 - The Center for Virtual Health's COVID-19 Clinic team will communicate back to the referring provider in a timely fashion. The COVID-19 Clinic will be responsible for either ordering monoclonal antibody or oral medications based on the clinical scenario.
- **Ambulatory Continuation of VTE Prophylaxis and Treatment for discharged COVID-19 patients:**
 - VTE prophylaxis should be considered at discharge for patients with COVID-19 who are at high risk of VTE and with a low risk of bleeding.
 - VTE treatment should be considered at discharge for patients that were treated inpatient for confirmed or highly suspected VTE.
 - Recommendations can be found [here](#).
- **Investigational Over-the-Counter and Alternative Medications**
 - ChristianaCare does not endorse the use of these supplements or medications for treatment of COVID-19. For Informational use only.
 - Azithromycin, ivermectin and hydroxychloroquine are specifically not recommended for treatment.
 - Oseltamivir is not effective for COVID-19.
- **Hemodialysis (HD) considerations:**
 - **Patients and family members** – Educate on proper hand hygiene, undergo screening for respiratory illness / body temperature, use of a medical mask /surgical mask, limit accompanying persons.
 - **Healthcare Practitioner / Staff** - proper hand hygiene, screened for respiratory illness / body temperature / use of personal protective equipment (effective mask, cap, gown, goggles/face shield, gloves).
- **Peritoneal dialysis (PD) considerations:**

- **Home environment** - Air out the room in which PD is being performed twice daily for 30 minutes, to avoid convective airflow when connecting catheter to tubing, close windows and air-conditioned vents, properly clean floors and surfaces
- **Patients and family members** – proper hand hygiene, use of a medical mask /surgical mask, continue with isolation, disinfect PD effluent (500 mg/L chlorine-containing solution for 1 h and poured into the toilet).
- **Maintenance Medications:**
 - All patients should remain on their regularly prescribed medications. Optimal control of chronic disease is critical. If patient is prescribed Paxlovid for COVID-19, be aware that the ritonavir component (pharmacologic booster) has many drug interactions. Temporary interruption of certain maintenance medications may be recommended by the ChristianaCare Center for Virtual Health pharmacist. There is no evidence to support stopping inhaled or systemic steroids, immunosuppressive medications, biologic agents, or ACEi/ARB therapy to lessen the risk of developing COVID-19 infection.
 - Patients that are chronically on immunosuppressive medications, biologic agents, systemic steroids, or chemotherapeutic medications should have the continuation of these medications addressed with the prescribing physician in the setting of an infection.
- **Steroids:** Oral steroids should be avoided as a treatment option specifically for COVID-19 patients in the ambulatory setting. These may be considered for alternative diagnoses such as exacerbations of chronic lung disease. Inhaled steroids can be continued.
 - Oral and IV steroids may be used for in-patient management of select COVID-19 patients with a high inflammatory burden.
- **Acetaminophen vs. NSAIDs:** Acetaminophen and NSAIDs may be used for fever control. Early reports of NSAIDs being associated with worsening of COVID-19 have not been substantiated.
- **MDI and Nebulizer Treatment:**
 - Nebulized formulations of medications carry a higher risk of aerosolization of particles. If possible, patients should utilize MDI's for acute management of symptoms.
 - For COVID-19 patients who require nebulized formulations of medications (due to lack of efficacy or availability of MDI's) for ongoing control they should be advised to use them in an isolated section of their home, preferably a garage or patio, and minimize exposure to other family members to that location.
 - Practices can do nebulizer treatments if the patient is not a candidate for MDI with spacer, as long as the patient has known pulmonary disease (e.g. asthma, COPD), but practices should not indiscriminately use nebulizers for patients who present with new, undifferentiated respiratory conditions, which could conceivably be COVID. Nebulized formulations in a healthcare

setting should be administered only in an isolated setting with clear procedures regarding specialized PPE utilization for high risk aerosolization.

- **CPAP:** Patients on CPAP with COVID-19 infection should discuss options with you and their Sleep Medicine physician. When using CPAP, COVID patients should be separated from other family members.