

Ambulatory Treatment Guidance for COVID-19

We understand that there is a great deal of information being published at a rapid pace which is difficult to keep up with. The following is aimed as an introduction regarding clinical features and treatment related to 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 cohort studies and guidelines from leading national societies. For additional information on COVID-19 please also refer to the [CDC - COVID-19 Website](#).

Clinical features of COVID-19 (SARS -CoV2)

The clinical spectrum of COVID-19 ranges from mild disease with non-specific symptoms of acute respiratory illness to respiratory failure and septic shock. Asymptomatic infection with COVID-19 is common although the incidence is not known given the current limited availability of testing.

The incubation period following exposure is typically 4-5 days but may be as long as 14 days. In patients that progress to more severe disease, hospital admission typically occurs around day 7.

Frequent signs and symptoms of infection:

Symptom	Reported Incidence
Fever	77-98%
Cough	48-82%
Myalgia or fatigue	11-52%
Shortness of breath	3-31%

Fever and fatigue are the most common presenting symptoms often followed by dry cough and dyspnea. Other non-specific symptoms such as myalgias are common. GI symptoms have been reported but almost always accompanied or followed by respiratory symptoms. Anosmia and loss of taste have been suggested in case reports and if occurring in the absence of other known causes such as allergic rhinitis or sinusitis should prompt consideration of COVID-19 infection.

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- Mild illness incidence around 80%
- Severe disease, associated with dyspnea, hypoxemia and/or significant lung infiltration, incidence around 15%
- Critical illness, associated with respiratory failure, ARDS, and/or shock incidence around 5%
- Cutaneous Involvement In 12.5% of patients with spontaneous resolution in 10 days
 - "COVID toes (acro-Ischemia)" - pernio-like lesions

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. 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

Refer to the [CDC - COVID-19 Website](#) for up to date information regarding testing. Test results may take up to 5 days to come back.

Risk of Disease based on Age and Co-morbidities

Adults from 30-80 years of age account for 65-80% of confirmed cases with 80% of deaths occurring in persons aged 65 years or older. Only 2-5% of cases have been noted in patients less than 20 years of age and generally illness has been mild 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 hypertension, cardiovascular disease, and cardiomyopathy

- People with diabetes
 - People who are on immunosuppressive therapy
 - People who are immunocompromised including cancer treatment
 - People with HIV
 - Obesity (BMI ≥ 30)
 - Sickle cell disease
 - Transplant patients
 - Children who are medically complex
- People who are pregnant should be monitored since they are known to be at risk with severe viral illness, however, to date data on COVID-19 has not shown increased risk

Specific Treatment Considerations for COVID-19 patients in the Ambulatory setting

- Treatment is supportive for non-hospitalized patients with COVID-19
- There are no recommended pharmacological treatments for COVID-19 patients in the ambulatory setting at this time. Discussion of treatment for hospitalized patients is below.
- Azithromycin and hydroxychloroquine are no longer being recommend for treatment.
- **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.
- **Post-exposure prophylaxis** is currently NOT recommended. However, the University of Minnesota is conducting a post-exposure prophylaxis study for all healthcare providers or those sharing a home with a patient who is COVID-19 positive. To enroll email: covid19@umn.edu. Drug would be supplied through study.

➤ **Self-issued prophylaxis** – Physicians should not be writing medications (including hydroxychloroquine or azithromycin) for self or family prophylaxis.

➤ **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) consideration**

- **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 and despite published opinion pieces or news articles 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. How to address these medications in the setting of an actual infection is addressed below.
- Patients chronically on agents to control their cardiovascular disease such as aspirin and ACEi/ARB should be continued on these agents unless their clinical status dictates otherwise.
 - **ACE inhibitors/ARBs:**
 - Hypothetical harm: COVID-19 binds to target cells through angiotensin – converting enzyme 2 (ACE2) which is expressed in the epithelial cells of lung,

intestine, kidney and blood vessels. An increase in expression or upregulation of ACE2 would be anticipated in patients being treated with an ACEi or ARB for the management of diabetes or hypertension. It has been hypothesized that patients with diabetes or hypertension being treated with an ACEi or ARB could be at increased risk of developing a more severe or fatal COVID-19 infection.

- Hypothetical benefit: ACEi/ARB may have protective effect against lung damage or paradoxical effect on virus binding.
- American Heart Association (AHA), American College of Cardiology (ACC), Heart Failure Society of America (HFSA), European Society of Cardiology (ESC) recommend against stopping ACEi/ARB therapy in those who are currently prescribed for other indications and/or mortality benefit.

○ **Statins:**

- Limited evidence supports for or against statin use in patients with viral pneumonia. There are no large-scale observational or randomized studies specific to COVID-19 evaluating the role of statin therapy. It is important to note there is no harm in continuing a statin, unless the patient is experiencing rhabdomyolysis.
- The American College of Cardiology encourages the continuation of a statin if patient is currently receiving for clinical atherosclerotic cardiovascular disease, diabetes or those at high risk for ASCVD.

➤ 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 diagnosis 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.

- **Oseltamivir:** Oseltamivir is not effective for COVID-19.
- **Acetaminophen vs. NSAIDs:** Acetaminophen should be used for fever control. There is a hypothetical link between NSAID use and aggravation of COVID-19 symptoms, but this is not supported by the FDA as of March 19, 2020.
- **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 even if the medication is expired.*
 - For 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. Aerosol droplets may remain in circulation for 2-3 hours.
 - 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, separate from other family members.

Items in news – without strong evidence

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➤ **Blood Type (NIH Director's Blog)**

- Blood type A – 50 percent greater risk of needing oxygen support or a ventilator should they become infected with the novel coronavirus
- Blood type O – 50 percent reduced risk of severe COVID-19
- No specific testing recommend, personal blood donation will reveal individual's blood type

➤ **MMR vaccination**

- Vaccination appears to serve as a preventative measure to dampen the inflammatory response seen in a COVID infection
- No recommendation for repeat vaccination or booster
 - Follow routine vaccination schedule

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