

In this COVID-19 pandemic, there has been some concern over potential shortages of MDI inhalers, including quick relief medications such as Albuterol, for the treatment of chronic lung conditions like asthma. The reason this may be happening is:

- 1) An increase demand for individuals replenishing their personal supplies in preparation, AND
- 2) A recent shift in practices in Hospitals and Emergency Departments.

In many instances, a **Metered Dose Inhaler (MDI) with spacer** is being used unless the patient has severe bronchospasm or is unable to effectively use an MDI, in which case nebulized medications are necessary. Patients who require nebulizers at home should continue to do so. Patients should not interrupt care regardless of suspected or diagnosed COVID-19. If an MDI is an option, you can consider its use.

According to CDC, based on limited available data, it is uncertain whether aerosols generating procedures (AGPs) may be infectious, such as:

- nebulizer administration
- high flow O2 delivery

The reason is that aerosols generated by nebulizers are derived from medication in the nebulizer. It is uncertain whether potential associations between performing this common procedure and increased risk of infection might be due to aerosols generated by the procedure or due to increased contact between those administering the nebulized medication and infected patients. It is important to use appropriate PPE, including procedural mask, goggles, gown and gloves. (N95 is optional, if available). Parents delivering AGP at home should consider masking, but should not delay treatment, if unavailable.

In this unprecedented time of illness, please consider the following when prescribing:

- Ensure that the pharmacy has the patient's medication in stock or available expeditiously.
- If there is a significant delay, consider alternative equivalent controller medications for short-term coverage so patient (see table A below).
- Prescribe a 90-day supply of their controller medications. **Recently, Medicaid has expanded from 30 days to 90 days. Most commercial insurance follow this as well.**
- Consider calling in a preemptive prescription for a short course of oral steroids to have on hand for patients in case of an asthma exacerbation either from infection or other trigger, with instructions to start the medication and call immediately or go to ED if worsening. Steroid treatment in known asthmatics is a core treatment for exacerbations and the benefits outweigh the risks.

Treatment possibilities

Patient with Asthma Exacerbation and no fever:

- Patient should be treated as usual for their acute exacerbation with appropriate medications. MDI may be used when available, but Albuterol nebulizer treatments are an acceptable alternative with appropriate PPE.

Patient with Asthma Exacerbation and fever:

- Patient should be treated as presumptive COVID-19 infection and providers and staff should use PPE when seeing patient. The care for the asthmatic should follow current best practice guidelines for an acute exacerbation. No change in asthma treatment has been recommended at this time.

Sample Reminders for Asthmatic Patients in Your Practice

- It is important to **continue taking your controller medications** for asthma and other lung diseases. The risk of inflamed and swollen lungs is more harmful than any side effects of the medication.
- **Do not ration your maintenance medications.** If you are running low on a prescription speak with your healthcare provider about your options so you can take your medication as prescribed.
- Speak with your doctor to determine **if switching medications helps** with better availability and/or lower costs. Consider alternative devices such as nebulizers. Dosages are different among different brands so do not switch without discussing with your healthcare provider.
- Keep your asthma under control by following **your asthma action plan.**
- For **school-aged children with asthma**, consider reaching out to their school health office to arrange for pickup of medications housed at the schools.
- If your insurance allows, **secure a 90-day supply** of prescription medications. Consider mail order pharmacy options to reduce exposure to potentially sick individuals.
- Practice **physical distancing** so that you minimize your child’s risk of contracting infection from someone. Continue good hand hygiene with 20 seconds of soap and water or hand sanitizer.
- If your child **becomes sick with a respiratory infection**, consult your healthcare provider via phone.
- If you have **trouble breathing, call 911.** Bring your child’s asthma medications with you if you need to visit your healthcare provider office or hospital.

Table A (Medications and equivalents)

Generic/Brand name	Fluticasone (Flovent)	Mometasone (Asmanex)	Ciclesonide (Alvesco)	Beclomethasone (Qvar)
Typical dosing	2 puffs twice daily	2 puffs twice daily	2 puffs twice daily	2 inhalations twice daily
Strength Equivalents	44 mcg	110 mcg	80mcg	40 mcg
	110 mcg	220 mcg	160 mcg	80 mcg
	220 mcg	--	--	--