**COVID-19 Respiratory Medication Considerations**

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**Overview**: As the number of patients with COVID-19 increases, shortages of important medications are starting to be seen. One of these medications is albuterol metered dose inhalers (MDIs). Clinical pharmacists, pulmonologists and respiratory therapists have collaborated on recommendations in this document. As we become aware of more information, additional updates will be provided.

**Assess COVID-19 patients’ need for short acting beta agonist (SABA) bronchodilator therapy**.

* + Routine use of SABA bronchodilator therapy (e.g., albuterol) in COVID-19 patients may not be necessary.
  + The American Association of Respiratory Care [SARS CoV-2 Guidance Document](https://www.aarc.org/wp-content/uploads/2020/03/guidance-document-SARS-COVID19.pdf) states that there is no role for inhaled bronchodilation in patients with COVID-19 unless the patient has co-morbid asthma or COPD.
  + Because of the national shortage of albuterol MDIs, prior approval may be needed to dispense MDIs. Please use local policy/procedures.

**Alternatives to Nebulized Albuterol for Suspected/Confirmed COVID-19 Patients:**

1. Please use good stewardship when ordering **albuterol MDIs**. Only order for patients with clinical signs of bronchospasm (active wheezing). Reserve **albuterol MDIs** for patients with severe respiratory distress.
2. Patients should use their home MDI, if possible. Please use local policy/procedures for home medication use.
3. In select cases, consider **PO albuterol** in patients with mild clinical signs of bronchospasm. Avoid in patients with a history of arrhythmias.
4. Steroids are not recommended as they prolong viral shedding. However, steroids may be used if needed for other comorbid conditions, such as COPD, asthma, adrenal insufficiency, refractory shock, etc.
5. Consider subcutaneous terbutaline (0.25 mg) if no other treatment options are available. Weigh the risks of arrhythmias prior to use.

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| **Drug** | **Route** | **Dose** | **Frequency** | **Onset** | **Duration** | **Adverse Reactions** |
| albuterol | Inhaled | 2 puff | q 20 min until relief, then q 4 - 6 hr PRN | 5 - 10 min | 4 - 6 hr | Use with caution in patients with cardio-vascular disease (arrhythmia or hyper-tension or HF); beta-agonists may cause elevation in blood pressure, heart rate and result in CNS stimulation/excitation. Beta2-agonists may also increase risk of arrhythmias. |
| PO (tablet or syrup) | 4 mg | TID - QID PRN | 30 min | 6 - 8 hr |
| terbutaline | Subcu-taneous | 0.25 mg  (max 0.75 mg/1 hr) | q 20 min x3 (asthma exacerbation)  q 4 - 6 hr (maintenance) | 6 - 15 min | 1.5 - 4 hr |
| PO | 5 mg  (max 15 mg/24 hr) | TID | 30 - 45 min | 4 - 8 hr |

**COVID-19 Patient Recommendations:**

* Continue use of nebulized therapies in ventilated patients (closed loop).
* If patients are not able to use MDIs, utilize nebulized therapy. Ensure staff present are utilizing proper PPE per facility policy.
* Design a process to ensure patients’ MDIs are transported with patient upon transfer.
* Work with local EMS to transport MDIs with patients from the field.
* Consider use of long acting beta agonists (LABA) MDIs in place of *scheduled* short acting beta agonists (SABA) as a means to prevent multiple SABA MDI canister use.
* If MDIs are unavailable, alternative aerosolization devices with one way valves may be considered to limit exposure. Ensure staff are utilizing proper PPE per facility policy.
  + For example: *AeroEclipse* Breath Actuated Nebulizer (BAN): requires concentrated albuterol solution (2.5mg/0.5mL)

**Non-COVID-19 Patient Care Action:**

* Use nebulized treatment for admitted non-COVID-19 patients.
  + Consider conserving metered dose inhalers (MDI) for COVID-19 patients due to the generation of aerosols during nebulization, which increases the risk that respiratory droplets will remain in the air and spread the virus.

**Risk to Healthcare Providers**

* Administration of respiratory medications may cause the patient to cough. For patients who have been trained on and capable of self-administration, consider instructing patients to wait to self-administer once all healthcare professionals have left the room.
* As prevalence of COVID-19 increases, there may be risk to healthcare providers from patients not diagnosed with COVID-19 or on PUI status (asymptomatic).

**References**

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**Version changes are highlighted**