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## Avoid Nebulizer Therapy to Reduce the Spread of COVID-19

### Why avoid nebulizer therapy in patients who may have COVID-19?

The use of nebulizer therapy at home or in the health care facility can increase the risk of transmission of the SARS-CoV-2 virus. Studies have shown that exhalations from a nebulizer may extend from the exhalation port or the side vents of the nebulizer for up to two and a half feet.<sup>1</sup> Since COVID-19 may persist in air droplets for 1-2 hours, nebulizers create an increased risk for the spread of COVID-19 disease.

### What is recommended instead of a nebulizer?

An albuterol Metered Dose Inhaler (MDI) with a valved holding chamber or spacer has been shown to be just as effective as albuterol nebulizer in most children and adults.<sup>2-5</sup> In addition to being equally effective, MDIs with holding chambers or spacers are quicker to administer and may be associated with less tachycardia and tremors.

### Recommendations to reduce the risk of SARS-CoV-2 transmission:

1. Encourage the use of an albuterol MDI and spacer for most patients in both the home and health care settings whenever possible. Note that mask-spacer devices can be used in all ages but are especially appropriate for younger children.
2. If nebulizers are used, be certain to adhere to appropriate safety precautions. Administer nebulized albuterol in a location that minimizes exposure to members of the patient's household who are not infected. Choose a location for treatment where air is not recirculated into the home – places like a porch or patio, or in a garage – areas where surfaces can be cleaned more easily or may not need cleaning.<sup>6</sup>
3. Ensure the pharmacy maintains adequate stock of albuterol MDIs and spacers; consider increasing stock to cover patients who may currently receive nebulizer therapy. Avoid stockpiling.
4. Ensure clinical staff and patients are familiar with MDIs and spacers and demonstrate appropriate technique.
5. Exercise similar precautions with other nebulized medications (i.e., ipratropium bromide, budesonide).

### References:

1. Hui DS, Chow BK, Chu LCY, et al. [Exhaled Air and Aerosolized Droplet Dispersion During Application of a Jet Nebulizer](#). Chest. 2009; 135(3):648-654.
2. Dolovich MB, Ahrens RC, Hess DR, et al. [Device selection and outcomes of aerosol therapy: Evidence-based guidelines: American College of Chest Physicians/American College of Asthma, Allergy, and Immunology](#). Chest. 2005;127(1):335–371.
3. Castro-Rodríguez JA, Rodrigo GJ. [Beta-agonists through metered-dose inhaler with valved holding chamber versus nebulizer for acute exacerbation of wheezing or asthma in children under 5 years of age: a systematic review with meta-analysis](#). J Pediatr. 2004;145(2):172-177.
4. Berry RB, Shinto RA, Wong FH, et al. [Nebulizer vs spacer for bronchodilator delivery in patients hospitalized for acute exacerbations of COPD](#). Chest. 1989; 96(6):1241-1246.
5. Delgado A, Chou KJ, Silver EJ, et al. [Nebulizers vs metered-dose inhalers with spacers for bronchodilator therapy to treat wheezing in children aged 2 to 24 months in a pediatric emergency department](#). Arch Pediatr Adolesc Med. 2003;157(1):76-80.
6. American College of Allergy, Asthma & Immunology. [A message to asthma sufferers about a shortage of albuterol metered dose inhalers](#). American College of Allergy, Asthma, and Immunology's website. ccessed March 25, 2020.