


Name of Policy: <u>Use of Metered Dose Inhaler in Mechanically Ventilated Patients</u> Policy Number: 3364-133-108 Department: Pharmacy Approving Officer: Chief Pharmacy Officer Responsible Agent: Director of Pharmacy Scope: University of Toledo Medical Center Pharmacy	 Effective Date: 5/24/2021 Initial Effective Date: 10/1/2015
<input type="checkbox"/> New policy proposal <input type="checkbox"/> Major revision of existing policy	<input type="checkbox"/> Minor/technical revision of existing policy <input checked="" type="checkbox"/> Reaffirmation of existing policy

PURPOSE:

To auto-substitute nebulizer bronchodilator therapy to metered dose inhaler (MDI) for mechanically ventilated patients.

BACKGROUND:

The use of metered dose inhalers provide the same degree of efficacy as nebulizers in mechanically ventilated patients and is safe, convenient, and cost effective. In addition, therapy with MDIs is less time consuming and has a lower risk of contamination.

POLICY:

1. All patients with an order for nebulized medications that have an artificial airway in place will be considered candidates for conversion to MDI.
2. The patient will be switched to MDI administration if the ordered drug is available in MDI form.
3. The respiratory therapist will write a therapeutic substitution order from an ordered nebulizer bronchodilator to a metered dose inhaler based on interchange table below.

Drug	Nebulizer Dose	MDI Dose – Artificial airway	MDI dose – No artificial airway	Name Brand
Albuterol	2.5mg	6 puffs	2 puffs	ProAir, Ventolin
Ipratropium	0.5mg	6 puffs	2 puffs	Atrovent
Albuterol/Ipratropium	2.5mg/0.5mg	6 puffs	2 puffs	Combivent

4. Ordered dosage intervals and/or as needed indications will remain the same as ordered via nebulizer.
5. A patient with a “do not substitute” order from a physician will be excluded from this therapeutic conversion.

6. All orders for a MDI that no longer have an artificial airway in place must meet the following to continue MDI administration.
 - a. Alert and able to follow commands
 - b. Respiratory rate < 30
 - c. Able to perform a slow deep breath and hold for 5 seconds
7. The respiratory care practitioner will instruct the patient in the proper use of a MDI with/without spacer and document education provided
8. All patients with an order for a MDI that no longer have an artificial airway in place will be considered as candidates to conversion to nebulized bronchodilator therapy if they do not meet criteria to continue to use MDIs.

PROCEDURE FOR BRONCHODILATOR DELIVERY BY METERED DOSE INHALER IN VENTILATED PATIENTS:

1. Check order, identify patient, and need for bronchodilators
2. Suction endotracheal tube and airway secretions
3. Shake MDI vigorously
4. Place MDI in space chamber adapter in ventilator circuit.
5. Do not disconnect humidifier.
6. Do not change the ventilator setting
7. Coordinate MDI actuation with beginning of inspiration.
8. Wait at least 15 seconds between actuations; administer total dose.
9. Monitor for adverse response

<p>Approved by:</p> <p><u>/s/</u> Lindsey Eitniew PharmD, BCPS, AAHIVP Director of Pharmacy</p> <p><u>05/24/2021</u> Date</p> <p><u>/s/</u> Michael Taylor Director, Respiratory Care and Neurodiagnostics</p> <p><u>05/28/2021</u> Date</p>	<p>Review/Revision Date</p> <p>4/1/2018 5/1/2021</p>
	<p>Next Review Date</p> <p>5/1/2024</p>
<p><u>/s/</u> Russell Smith, PharmD, MBA, BCPS Chief Pharmacy Officer</p> <p><u>05/24/2021</u> Date</p> <p><i>Review/Revision Completed By: Pharmacy</i></p>	
<p>Policies Superseded by This Policy:</p>	