

# Pharmacy Communication

## WHAT:

- Albuterol MDIs for confirmed COVID-19 or Patient Under Investigation (PUI) for COVID-19 only

## WHY:

- There is a discrepancy between WHO and CDC classifications of COVID-19 droplet vs airborne risk. Based on this, MHS is proceeding with caution using SVN treatments in suspected and confirmed COVID-19 patients. MDIs are allowed for appropriate patients only in order to preserve PPE for care givers and for patients needing to be treated in open areas such as in the emergency department. The supply of hand held inhalers is extremely limited so it is important to reserve for those that meet the criteria.

## ■ HOW:

- **Epic Ordering**

- LMA in Epic has been modified to include criteria for when an albuterol MDI allowed

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- **Epic Ordering**
  - LMA in Epic has been modified to include criteria for when an albuterol MDI allowed

The screenshot shows the 'Alternative Selection' window in Epic. It features a 'Recommended' section with a 'You selected' dropdown showing 'albuterol (PROVENTIL HFA, VENTOLIN HFA) 90 mcg/act inhaler 2 Puff: 2 Puff, Inhalation, Oral, Q4H RESP Include Now Until Discontinued'. Below this is a 'Details' section containing text from the Pharmacy and Therapeutics Committee, inclusion criteria for ordering MDI (Confirmed COVID-19 or Patient Under Investigation for COVID-19 patients only), and exclusion criteria (severe respiratory disease, uncooperative patients, or poor response to MDI with spacer). An 'Alternatives' table lists four options for albuterol (PROVENTIL) inh solution with varying frequencies (Q8H, Q6H, Q4H, Q4-6H) and start dates (3/12/20). At the bottom, there are buttons for 'Accept Alternative' and 'Remove Order'.

**Alternative Recommended**

You selected:  
albuterol (PROVENTIL HFA, VENTOLIN HFA) 90 mcg/act inhaler 2 Puff: 2 Puff, Inhalation, Oral, Q4H RESP Include Now Until Discontinued

**Details**

Per MultiCare Health System Pharmacy and Therapeutics Committee: Albuterol MDI is non-formulary and in critically short supply.  
Inclusion criteria for ordering MDI: **Confirmed COVID-19 or Patient Under Investigation for COVID-19 patients only.**  
Exclusion criteria (use nebulizer treatment instead):

- Severe, life-threatening respiratory disease (e.g., those with severe or impending respiratory arrest, those with hypoventilation or ventilation compromise, continuous nebulization, end-stage COPD, cystic fibrosis);
- OR
- Patients who are uncooperative or are unable to follow the directions required for a metered-dose inhaler (MDI) with spacer use;
- OR
- Patients with a history of poor response to MDI with spacer.

For patients that meet above exclusion criteria and non-COVID-19 patients, interchange to albuterol SVN as follows:

**Alternatives**

Alternative	Details
<input type="radio"/> albuterol (PROVENTIL) inh solution	2.5 mg, Inhalation, Neb, Q8H PRN, wheezing, Starting 3/12/20
<input type="radio"/> albuterol (PROVENTIL) inh solution	2.5 mg, Inhalation, Neb, Q6H PRN, wheezing, Starting 3/12/20
<input type="radio"/> albuterol (PROVENTIL) inh solution	2.5 mg, Inhalation, Neb, Q4H PRN, wheezing, Starting 3/12/20
<input type="radio"/> albuterol (PROVENTIL) inh solution	2.5 mg, Inhalation, Neb, Q4-6H PRN, wheezing, Starting 3/12/20

Continue with:  
 albuterol (PROVENTIL HFA, VENTOLIN HFA) 90 mcg/act inhaler 2 Puff: 2 Puff, Inhalation, Oral, Q4H RESP Include Now Until Discontinued

✓ Accept Alternative      ✗ Remove Order

- Once a provider proceeds they must provide the indication; if they choose “other” a new line opens where they will be required to enter information

## How: ordering continued

- Questions in the actual albuterol MDI order:

The screenshot shows a software interface for ordering albuterol (PROVENTIL HFA, VENTOLIN HFA) 90 mcg/act inhaler 2 Puff. The interface includes a title bar with 'Accept' and 'Cancel' buttons. Below the title bar, there is a section for 'Indication for Albuterol MDI' with a red box around it, containing two options: 'COVID-19 Confirmed by Lab Results' (selected) and 'Other Indication'. The 'Dose' section has a dropdown menu set to '2 Puff', with other options being '1-2 Puff', '4 Puff', and '8 Puff'. Below this, 'Administer Dose' and 'Administer Amount' are both set to '2 Puff'. The 'Route' section has a dropdown menu set to 'Inhalation, Oral', with 'Inhalation, c' also visible. The 'Frequency' section has a dropdown menu set to 'Q4H RESP', with other options being 'q4h Resp', 'q6h Resp', 'q4h PRN', and 'q6h PRN'. The 'For' section has a dropdown menu set to 'Doses', with 'Hours' and 'Days' also visible. The 'Starting' section has a date field set to '3/11/2020', with 'Today' and 'Tomorrow' also visible. The 'First Dose' section has a dropdown menu set to 'Include Now', with 'As Scheduled' also visible. At the bottom, it says 'First Dose: Today 1430 Until Discontinued'.

- BPA (COVID results will show within BPA); repeat LMA language**
- Verification – pharmacist will confirm reviewing against criteria
- COVID positive - nurses to validate patient can effectively use MDI
- COVID negative - pharmacist interchanges to SVN per P&T protocol

# How: Order Verification

- Pharmacist verification view:

Verify Orders - Order Details

Order ID: 381013239

albuterol (PROVENTIL HFA, VENTOLIN HFA) 90 mcg/act inhaler 2 Puff

Ordered by: Chris M Beuning, PHARM D Today 1213

Order dose: 2 Puff Route: Inhalation, Oral Frequency: Q4H RESP

Admin dose: 2 Puff For: Until discontinued

# of doses: 1st dose: Today 1215 Include Now

Last dose: Scheduled times (adjusted):

3/12/2020	1215, 1600, 2000
3/13/2020	0000, 0400, 0800, 1200, 1600, 2000

Order questions: **Indication for Albuterol MDI COVID-19 Confirmed by Lab Results**

Admin instructions: (none)

Products to dispense	Order dose	Admin dose	Dispense	Package
ALBUTEROL SULFATE HFA 108 (90 BASE) MCG/ACT IN AERS	2 Puff	2 Puff	18 g	18 g Inhaler x1

Dispensing Information

Dispense from: TG MAIN CAROUSEL

First doses: TG MAIN CAROUSEL

Dispense code: Bulk

Dispense only once: Yes

Label comments: (none)

Prep instructions: (none)

# How: Order Verification

- BPA that appears for pharmacist at verification:

BestPractice Advisory - BCBT, Annatest

**⚠ Pharmacists:**

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For patients that meet above exclusion criteria and non-COVID-19 patients, interchange to albuterol SVN as follows:

Albuterol MDI	Interchange to Albuterol SVN
1-2 puffs Q8H prn	2.5 mg Q8H prn
1-2 puffs Q6H prn	2.5 mg Q6H prn
1-2 puffs Q4H prn	2.5 mg Q4H prn
1 puff Q4-6H prn	2.5 mg Q4H prn
2 puffs Q4-6H prn	2.5 mg Q4H prn

3/11/20

✓ Accept    Cancel

## How: Storage and Disposal

- **Storage of used MDI's between treatments:**

- Will follow current process for medications in isolation room per *Multidose Container Medication Management Policy*, isolation patients: [360 Link](#)
  - Place an opened clean zip-locked bag on the cart directly outside the patient's room to return the multiple dose medication to after each use. Remove personal protective equipment and perform hand hygiene. Put on new gloves and immediately carry medication to place in the clean bag marked as a biohazard on the cart. Remove gloves and perform hand hygiene.
  - MDI will be stored in the patient specific bins in Pyxis or med room

- **Disposal**

- All MDIs will be disposed of after use; do not send home with the patient
  - Spacers should be disposed of as a biohazard
- MDIs must be returned to pharmacy for disposal
- Place in Return to Pharmacy bin in bag marked as biohazard for pickup by a pharmacy technician
- MDIs and bag will be placed in the container for combustibles

## How: MDI Education

- **Patient and Nursing Instructions:**
  - Link below has education on proper use of MDIs
    - <https://www.ventolin.com/about-ventolin-hfa/how-to-use.html>
  - Contact RT for a spacer; it is recommended to use a spacer for all MDIs
  - Contact RT for specific questions