

Respiratory Care Services

John Dempsey Hospital

Policy and Procedure Manual

Subject: Metered Dose Inhaler (MDI)

Rationale: Pharmacologic agents from antibiotics to sympathomimetics are delivered to patients via metered dose inhalers. MDI's may deliver medication using propellants which disperse a "metered dose" per puff (dosage in micrograms). MDI's can take the place of or be added as an additional respiratory medication when treating the chronic respiratory patient.

Equipment: Stethoscope
Metered Dose Inhaler(s)
Spacing device (e.g. Aerochamber spacer)

Note: Spacing devices should be utilized with all geriatric patients to improve technique. A spacer is recommended whenever a Respiratory Therapist is involved in the ordering of the MDI.

Indications:

1. Bronchospasm - constriction
2. Airway Inflammation

Contraindications: Same as with respiratory aerosolized medications

Procedure:

1. Read the patient's order sheet for the physician's specific instructions. Check the physician order for medication, medication dosage, and frequency. Verify the patient's name, DOB, and bed location.
2. Obtain the ordered MDI and spacer from the patient's medication drawer on the nursing unit. Proceed to the patient's bed, introduce yourself, and explain what you are about to do and that it has been ordered by the patient's doctor. Check the patient's name and DOB verbally and by the patient's wristband. Be reassuring.
3. Wash your hands.
4. The order of use when taking several inhalers:
 - Proventil or Ventolin (Sympathomimetics)
 - Atrovent (Anticholinergics)
 - Azmacort, Aerobid, Beclovent, Vanceril (Steroids)
 - Anti-infective agents

5. *Procedure without spacer:*

- a. Remove the cap from the MDI mouthpiece
- b. Shake the MDI vigorously 3-5 times
- c. Place the MDI mouthpiece at the lips – *not the mouth* – with mouth open
- d. Patient should begin to inhale through his/her mouth then depress the inhaler to release the medication and simultaneously finish with breathing as deeply as possible
- e. Hold breath for 5- 10 seconds for greater deposition of medication

- f. It is best to wait a minute between prescribed puffs for optimal results
- g. Replace the cap on the MDI mouthpiece

Note: Always have patient rinse mouth after using a steroid inhaler (as thrush may occur if not done). Examples of steroid inhalers include Azmacort, Aerobid, Beclovent, Vanceril.

6. *Procedure with spacer device:*

The spacer provides a means to facilitate the use of the inhaler so the patient receives the most beneficial effects of the medication without the need to coordinate breathing and the actuation (spraying) of the medication.

- a. Remove the caps from the MDI spacer mouthpiece and inhaler
- b. Insert the inhaler mouthpiece into the wider, rubber-sealed end of the spacer
- c. Shake the unit vigorously 3-5 times
- d. Have the patient place the spacer mouthpiece in his/her mouth and close his/her lips around it
- e. Spray **ONE** puff from the inhaler into the spacer
- f. Breathe in slowly and deeply and hold breath 5-10 seconds
- g. Repeat steps 5c – 5f for each prescribed puff

The advantages of the Spacing Device for MDI delivery are:

- ✓ Less chance of wasted medication since the aerochamber traps the medication in its holding chamber until the patient is ready to breathe
- ✓ Minimizes irritation, sore throat and hoarseness due to less particles depositing on the back of the throat and mouth
- ✓ Helps prevent unpleasant taste from the medication
- ✓ Reduces chance of fungal infection from steroidal MDI's
- ✓ One way valve at the mouthpiece keeps the medication in the holding chamber until the patient is ready to inhale

6. Assess the patient before and after Rx
 - Heart Rate
 - Respiratory Rate
 - Breath Sounds
7. Document therapy and response to therapy on the Respiratory Care Treatment Sheet
8. Cleaning of the Spacer
 - Wash the spacer once a week with warm tap water then allow to air dry

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