Epinephrine:

(EpiPen Ir)



QR code for mobile access

## **Albuterol Dosing:**

- · Continuous albuterol alone: 0.083% (2.5 mg / 3 mL)
- If combined with ipratropium 0.5% solution (0.5 mL = 2.5 mg)

## **Intensive Care Indications** Any of the following:

- · Prolonged continuous albuterol for > 4 hrs with worsening symptoms
- Inadequate ventilation with hypercapnea (PCO<sub>2</sub> on capillary blood gas > 45)
- Need for high flow nasal cannula or non-invasive ventilation due to concern for respiratory failure
- Persistent hypoxemia (SpO<sub>2</sub> < 90%) despite supplemental O<sub>2</sub> (≥  $3 \text{ L/min or} > 40\% \text{ FiO}_2 \text{ with}$ non-rebreather)
- Altered level of consciousness (drowsiness)

### **Discharge Criteria** All of the following:

- Resolution of respiratory distress
- Resolution of hypoxemia (SpO<sub>2</sub>) ≥ 90% on room air)
- Do not anticipate albuterol will be needed more frequently than q4 hours
- Ability of caregiver to provide q4h albuterol at home

# **Discharge Checklist**

- Continue yellow zone therapies on discharge
- Determine systemic steroid plan based on initial steroid administered and patient
- Consider "stepping up" green zone therapies if indicated
- Provide Asthma Action Plan and asthma education
- Recommend appropriate follow-up with either PCP or Asthma Provider
- Confirm pt has access to prescribed medications within 2-3 hours after discharge

## **Other Resources**

- Asthma Reference Guide
- Caregiver Smoking Cessation

Pt > 2 years of age in the emergency department with signs and symptoms of asthma exacerbation Is there

• For Adele Hall ED • For CM Kansas ED impending/actual respiratory Yesfailure? • Continuous positive airway pressure No • Non-invasive positive airway pressure -orendotracheal intubation Is the exacerbation mild, moderate, or Severe severe?

• *Initiate* oxygen to achieve SpO<sub>2</sub> ≥ 90%

#### • Administer:

• Initiate oxygen to achieve SpO<sub>2</sub>

Albuterol (MDI with spacer)

• *Consider* systemic steroid if ≥ 2

albuterol treatments are

• Dexamethasone (Link to

• Prednisolone/Prednisone

(Max: 60 mg/day)

2 mg/kg/day PO x3-5 days

0.6 mg/kg PO x1 dose (Max: 12

< 20 kg: 4 puffs

≥ 20 kg: 8 puffs

≥ 90%

• Administer:

required:

mg)

-or-

Evidence)

- Dexamethasone (Link to Evidence) 0.6 mg/kg PO x1 dose (Max: 12 mg) (2nd dose on day 2 may be considered)
  - -or-
- Prednisolone/Prednisone 2 mg/kg/day PO x3-5 days (Max: 60 mg/day)

Moderate

#### -and-

- Albuterol (MDI with spacer)
- < 20 kg: 4 puffs
- ≥ 20 kg: 8 puffs

#### -or-

- Continuous Albuterol (nebulized)
- < 20 kg: 10 mg/hr
- ≥ 20 kg: 15 mg/hr
- Consider (if not already administered)
  - Magnesium sulfate 50 mg/kg IV (Max dose: 2 grams)
- ∘ Ipratropium bromide (nebulized) 1500 mcg x1 during first hour of continuous Albuterol

Assess response to treatment

• *Initiate* oxygen to achieve SpO<sub>2</sub> ≥ 90%

#### • Place IV

• Start NS fluid bolus 20 mL/kg (Max first bolus of 1L. If more is needed, monitor lung exam closely for signs of volume overload.)

In addition to severe therapies below, consider:

■ 7.5 to < 25 kg: 0.15 mg/0.3 mL (1:2000) IM

 $\ge 25 \text{ kg: } 0.3 \text{mg/} 0.3 \text{ mL } (1:1000) \text{ IM } (\text{EpiPen})$ 

■ 1 mg/mL solution, 0.01 mg/kg IM

- Administer
  - Methylprednisolone 2 mg/kg IV q24 hrs -or- divided q12 hrs (Max:
  - 60 mg/day)

## -and-

- Continuous Albuterol (nebulized)
- < 20 kg: 10mg/hr
- ≥ 20 kg: 15 mg/hr
- -with-
- Ipratropium bromide (nebulized) 1500 mcg x1 during first hour *of* continuous Albuterol

Provide (If not already administered):

Magnesium sulfate

50 mg/kg IV (Max dose: 2 grams)

Review indications for transfer to intensive care

Discharge with home Does the asthma care and PCP pt meet discharge follow-up criteria? No • Continue care as above • Recommend (if not already administered): Corticosteroid (oral, IV, or IM) Ipratropium bromide (nebulized) Magnesium sulfate IV Disposition may depend on numerous patient-level factors, but

the need for admission should be considered if the patient requires  $\geq$  3 hours of continuous albuterol

Does the pt meet discharge criteria?

- Admit to Gen Peds or PICU Review indications for transfer to intensive care Inpatient algorithm
- Continue ED care and reassessments until transfer

**Contact:** EvidenceBasedPractice @cmh.edu

Link to: synopsis and references

Last Updated: 07/2025