

Asthma Exacerbation Algorithms:
 • [Asthma Care Continuum](#)
 • [Ambulatory](#)
 • [Urgent Care](#)
 • [Inpatient](#)

Pt > 2 years of age in the Emergency Department with signs and symptoms of asthma exacerbation

Is there impending/actual respiratory failure?

In addition to severe therapies below, consider:
 • **Epinephrine:**
For Adele Hall ED-
 1 mg/mL solution, 0.01 mg/kg IM
For CM Kansas ED-
 7.5 to < 25 kg: 0.15 mg/0.3mL (1:2000) IM (EpiPen Jr)
 ≥ 25 kg: 0.3mg/0.3mL (1:1000) IM (EpiPen)
 • **Continuous Positive Airway Pressure**
 • **Non-invasive positive airway pressure or endotracheal intubation**

Is the exacerbation severe, moderate, or mild?

Severe

- **Oxygen** to achieve SpO₂ ≥ 90%
- **Place IV**
- **Start NS fluid bolus 20 mL/kg**
- **Methylprednisolone IV**
2 mg/kg/day q24 OR divided q12
Max: 60 mg/day
- Continuous **albuterol**** (nebulized)
< 20 kg: 10 mg/hr
≥ 20 kg: 15 mg/hr

with

- **Ipratropium bromide** (nebulized)
1500 mcg x1 with continuous **albuterol****

If not already administered:

- **Magnesium sulfate IV**
50 mg/kg (Max: 2 grams)

[Review indications for transfer to intensive care](#)

Moderate

- **Oxygen** to achieve SpO₂ ≥ 90%
- **Dexamethasone**
0.6 mg/kg PO x1 dose (Max: 12 mg)
(2nd dose on day 2 may be considered)
- OR
- **Prednisolone/Prednisone PO**
2 mg/kg/day x3-5 days (Max: 60 mg/day)
- **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

If not already administered, consider:

- **Magnesium sulfate IV**
50 mg/kg (Max: 2 grams)
- **Ipratropium bromide** (nebulized)
1500 mcg x1 with continuous **albuterol****

Mild

- **Oxygen** to achieve SpO₂ ≥ 90%
- **Systemic steroid if ≥ 2 albuterol treatments are required:**
Dexamethasone
0.6 mg/kg PO x1 dose (Max: 12 mg)
- OR
- **Prednisolone/Prednisone PO**
2 mg/kg/day x3-5 days (Max: 60 mg/day)
- **Albuterol (MDI with spacer)**
< 20 kg: 4 puffs
≥ 20 kg: 8 puffs

Albuterol Dosing:**

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

Assess response to treatment

Does the pt meet discharge criteria?

Discharge with home asthma care and PCP follow-up

Admit to intensive care

Is intensive care required?

[Inpatient algorithm](#)

Continue care as above;
 If not already administered, recommend:
 • Corticosteroid (oral, IV, or IM)
 • Ipratropium bromide (nebulized)
 • Magnesium sulfate IV

Reassess response to treatment

Does the pt meet discharge criteria?

• Admit to Gen Peds or PICU
 • Continue ED care and reassessments until transfer
 • > 4 hrs continuous albuterol should prompt discussion with Gen Peds team and/or PICU about appropriate unit of admission
 • [Review indications for transfer to intensive care](#)