ED Asthma Exacerbation Management (ages 1-17 yo)

PRAM score | Adjunct Therapies | Disclaimers

Mild PRAM
(0 – 3)
- Albuterol MDI with spacer 8 puffs OR
- Albuterol single dose nebulizer 5 mg
- Strongly consider steroids: dexamethasone 0.6 mg/kg PO (maximum dose = 16 mg

Moderate PRAM
(4 – 7)
- Albuterol hour long nebulizer
  - < 20 kg: 7.5 mg
  - ≥ 20 kg: 15 mg
- Ipratropium hour long nebulizer
  - 1.5 mg
- Dexamethasone 0.6 mg/kg PO (maximum dose 16 mg)

Severe PRAM
(8 – 12)
- Albuterol hour long nebulizer
  - < 20 kg: 7.5 mg
  - ≥ 20 kg: 15 mg
- Ipratropium hour long nebulizer
  - 1.5 mg
- Steroids
  - Dexamethasone 0.6 mg/kg PO (maximum dose 16 mg) OR
  - Methylprednisolone 2 mg/kg IV (maximum dose = 125 mg)
- Magnesium sulfate bolus 70 mg/kg (maximum 2,000 mg) IV over 20 minutes
- NS or LR bolus 20 mL/kg (maximum dose 1,000 mL) over 20 – 60 min)
- Consider Epinephrine IM 0.01 mg/kg (maximum dose 0.5 mg) IM q20 min x 3 doses

Reassess 1 hr (or sooner) after initial evaluation and recalculate PRAM score

Mild PRAM
(0 – 3)
- Consider observation period for recurrence of symptoms and if improved, discharge home

Moderate PRAM
(4 – 7)
- Continuous albuterol nebulizer
  - ≤ 20 kg: 10 mg/hr
  - 20-60 kg: 15 mg/hr
  - > 60 kg: 20 mg/hr

Severe PRAM
(8 – 12)
- Magnesium sulfate infusion 25 mg/kg hr (maximum dose 2,000 mg/hr)
- Consider adjunct therapies
- Contact JPICU for admission

Note: This algorithm is intended to guide initial management of children presenting with signs/symptoms concerning for RAD/asthma exacerbation but does not take into consideration treatments provided by pre-hospital providers or caregivers. Additional therapies may be clinically indicated and are left to the provider's discretion (see next page).

ED Asthma Exacerbation Management (ages 1-17 yo)

Algorithm | Disclaimers

Pediatric Respiratory Assessment Measure (PRAM)

Signs	Score			
	0	**1**	**2**	**3**
Suprasternal muscle contractions	Absent		Present	
Scalene muscle contractions	Absent		Present	
Air entry*	Normal	Decreased at base	Decreased at base and apex	Absent/minimal
Wheezing*	Absent	Expiratory only	Inspiratory and expiratory	Audible without stethoscope / silent chest with minimal air entry
O_2 saturation	≥ 95 %	92–94 %	< 92 %	

*if asymmetric findings between the right and the left lungs, the most severe side is rated

Mild PRAM (0 – 3)

Moderate PRAM (4– 7)

Severe PRAM (8– 12)

ADJUNCT THERAPIES TO CONSIDER FOR SEVERE PATIENTS UNRESPONSIVE TO INITIAL THERAPIES:

- Epinephrine (**1 mg/mL** concentration)
  - 0.01 mg/kg (0.01 mL/kg, max 0.5 mg) IM q20min x 3 doses
- Terbutaline
  - Bolus 10 mcg/kg (max 500 mcg) IV over 1–2 minutes
  - Maintenance 1–2 mcg/kg/min IV (max dosing weight 50kg)
    - Increase by 1 mcg/kg/min IV q 30 min (max 4 mcg/kg/min)
- Non-invasive positive pressure ventilation: BIPAP
- Heliox therapy
  - Note: should not be used for patients with hypoxemia requiring > 40% FiO2 supplemental oxygen to maintain adequate saturations

Note: This algorithm is intended to guide initial management of children presenting with signs/symptoms concerning for RAD/asthma exacerbation but does not take into consideration treatments provided by pre-hospital providers or caregivers. Additional therapies may be clinically indicated and are left to the provider's discretion (see next page).

ED Asthma Exacerbation Management (ages 1-17 yo)

Algorithm | PRAM score | Adjunct Therapies

The policies set forth in this policy library do not establish a standard to be followed in every case. It is impossible to anticipate all possible solutions that may exist and to prepare policies for each. These policies should be considered guidelines with the understanding that departures from them may be required at times. Accordingly, it is recognized that those individuals employed in providing healthcare are expected to use their own judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. If a policy contains references to clinical literature or other resources, such as Lippincott, Ovid, and/or Elsevier, these resources are only intended to support the reasoning for adoption of certain guidelines contained herein. It is not an endorsement of any article or text as authoritative. Norton Healthcare specifically recognizes there may be articles or texts containing other opinions on point that may be helpful and valid which would support other care or actions, given a particular set or circumstances. No literature is ever intended to replace the education, training and experience or exercise of judgment of the healthcare providers.

Last update: 12/2024

Contact: adam.isacoff@nortonhealthcare.org

Additional Information
- Back to Algorithm
- Back to Clinical Pearls