

Pediatric Asthma

Clinical Practice Guidelines



Inclusion/Exclusion Criteria

- This clinical pathway is designed for children 2 years of age or older who present to the ED with an asthma exacerbation.
- In patients with initial episode of wheezing, consider foreign body or upper airway obstruction, or other underlying pulmonary disease.
- Patients with other chronic, comorbid conditions that may alter the treatment recommendations on this guideline should be excluded from the pathway.

Educational Process

- The admitting team completes an asthma action plan, which includes identification of environmental control and control of other triggers, method and timing of rescue actions, use of controllers, and use of relievers.
- The respiratory therapist ensures that key elements of asthma education occur during the patient's hospitalization.

Adjunctive Therapies

Medications in order of escalation

- Terbutaline 10 mcg/kg (max 250 mcg/dose) SQ Q 20 minutes x3, then infusion of 0.1 - 10 mcg/kg/min
- Epinephrine 0.01 mg/kg (max 0.3 mg) IM x1
- Magnesium 75 mg/kg (max 2 gm) IV
- Ketamine: Bolus 2-3 mg/kg, then infusion 1-2 mg/kg/hr
- Heliox 80:20

Respiratory support for respiratory failure

- HFNC
- BiPAP (severe episode approaching respiratory failure with fatigue or significant uncorrected hypoxemia)

*CXR should only be performed if:

- Persistent severe respiratory distress (including O2 Sat \leq 90%) OR focal findings (including localized rales, crackles, decreased breath sounds +/- documented fever \geq 38.4C) **not improving on \geq 12hrs of therapy**
- Concern for pneumomediastinum/pneumothorax during ED treatment

NOT Routinely Recommended

- CXR*
- Viral testing except for influenza
- Blood work
- Antibiotics

Consider Pulmonary Consult:

- Asthma exacerbation requiring PICU care
- If not meeting goals of asthma therapy, such as admission to the hospital 2 or more times in a 12 month period
- When there is uncertainty whether the patient has asthma
- When there are other conditions that complicate asthma management
- When enhanced education may improve outpatient management

Other consults to consider, as needed:

- Social Work, when issues related to housing, transportation, or finances affect care
- Pharmacy, when enhanced education about medication regimen is needed
- Case management, when a visit by a home nurse may improve management

Discharge Process

- Arrange follow up appointment with PCP (required) and with specialist (as needed)
- Discharge instructions must include appointment and name/phone number of PCP
- In combination with the discharge instruction, the Asthma Action Plan constitutes the Asthma Home Management Plan of Care. The patient and/or caregiver is given a copy of this plan at discharge
- Follow up that RT has completed asthma education
- Follow up on SW, Pharmacy, and Case Management recommendations

REFERENCES

1. NHLBI. Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. NAEPP, 2007.
2. Keeney GE, Gray MP, Morrison AK, Levas MN, Kessler EA, Hill GD, et al. Dexamethasone for Acute Asthma Exacerbations in Children: A Meta-analysis. Pediatrics 2014; 133:493-9.
3. Arnold DH, Saville BR, Wang W, Hartert TV. Performance of the Acute Asthma Intensity Research Score (AAIRS) for acute asthma research protocols. Ann Allergy Asthma Immunol 2012; 109:78-9.

AAIRS ACUTE ASTHMA SEVERITY SCORE

Component	Component Values			
	0	1	2	3
Retractions ^a			Yes	
SCM	No		Yes	
Intercostal	No		Yes	
Subcostal	No		Yes	
Air Entry	Normal	Decreased at bases	Widespread decrease	Absent or minimal
Wheezing	Absent	Expiratory	Inspiratory & Expiratory	Audible w/out stethoscope or silent chest
SpO ₂ (on room air)	\geq 95%	92 - 94%	<92%	
Expiratory phase ^b	Normal; 1:1	Prolonged; 1:2	Severely prolonged; \leq 1:3	
Add component values	___	+___	+___	+___
Total Score on scale of 0 to 16				___

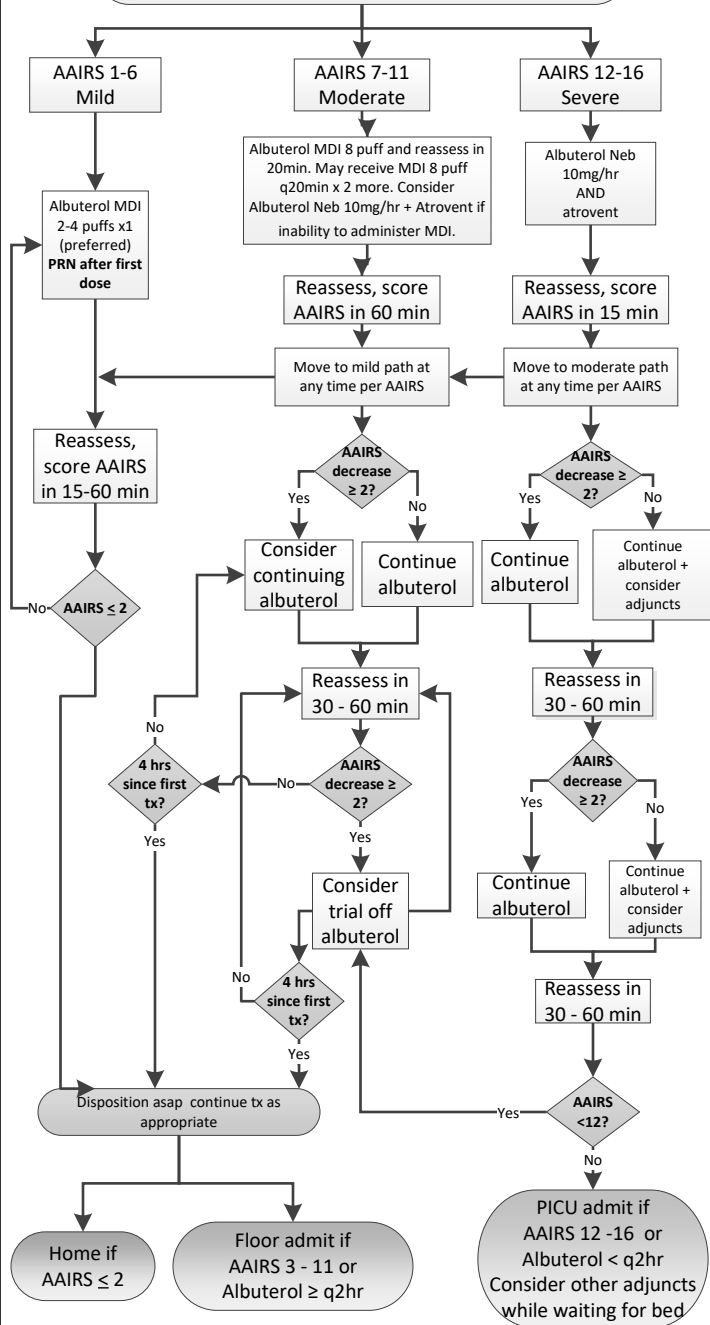
Abbreviations: AAIRS, Acute asthma intensity research score; SCM, sternocleidomastoid; SpO₂, oxygen saturation by pulse oximetry on room air
^a Any visible use of accessory muscle group (Yes/No); ^b Inspiratory to expiratory ratio
 Severity levels: Mild 1 – 6; Moderate 7-11; Severe 12 - 16

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This guideline does not take into account individual patient situations, and does not substitute for clinical judgement

AAIRS Scoring for Asthma Pediatric ED Guideline

Assess patient, score AAIRS
Give dexamethasone 0.6mg/kg (max 16mg)



Goal: Disposition Decision within 4 hours

Pediatric Asthma

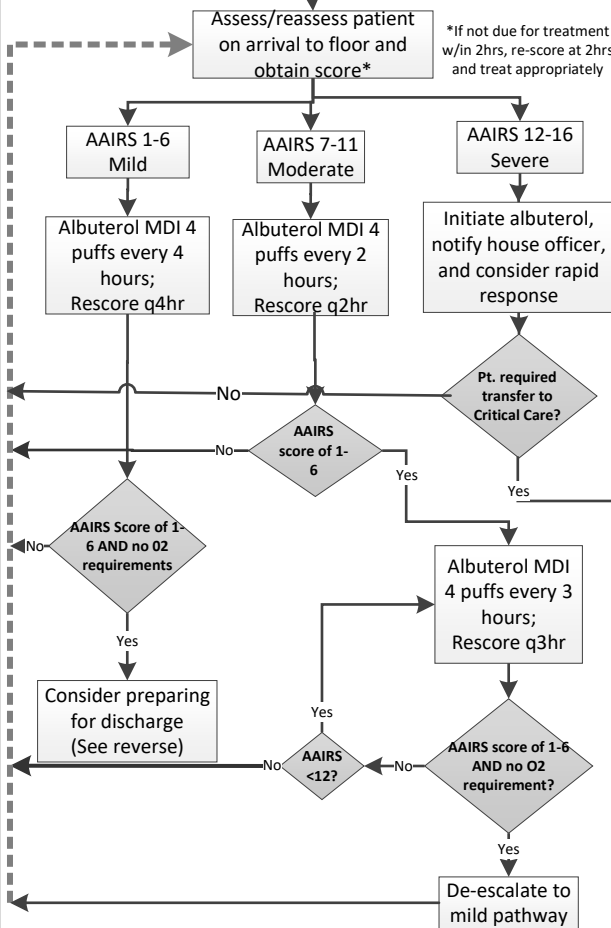
Clinical Practice Guidelines



AAIRS Scoring for Asthma Pediatric Acute Care Guideline

Review current therapies

- Ensure Decadron has been administered
- Initiate inhaled corticosteroids OR continue home inhaled corticosteroid
- Initiate Asthma Action Plan
- Asthma Education Plan



- > Dexamethasone 0.6mg/kg (max 16 mg) at discharge if at least 12 hours from initial dose or at 48 hours, whichever comes first
- OR
- > Patients who spend any time in the ICU should complete a 5-7 day prednisolone/prednisone burst upon discharge instead of decadron

The house officer must be notified, by voice, anytime therapy is escalated

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AAIRS Scoring for Asthma Pediatric ICU Guideline

Review current therapies

- Albuterol, Decadron
- Initiate inhaled corticosteroids OR continue home inhaled corticosteroid
- IV Methylprednisolone
- Adjunctive therapies
- Initiate Asthma Action Plan
- Asthma Education Plan

