Pediatric Asthma

Clinical Practice Guidelines

Monroe Carell Jr. Children's Hospital at Vanderbilt

Inclusion/Exclusion Criteria

- This clinical pathway is designed for children 2 years of age or older with a known diagnosis of asthma, 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

- An initial Asthma Action Plan is completed by the admitting team and posted in the patient's room, 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

- Epinephrine SQ 0.01mg/kg (max 0.3mg)
- Heliox
- Ketamine: Bolus of 2-3 mg/kg, then infusion of 1-2 mg/kg/hr
- Magnesium: 1-time 75 mg/kg (max 2 gm)
- Terbutaline: Bolus of 0.01 mg/kg (max 0.4 mg), then infusion of 0.1-10 mcg/kg/min

NOT routinely recommended

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

*CXR should only be performed if:

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

AAIRS Acute Asthma Severity Score

Component	Component Values			
	0	1	2	3
Retractions[a]				
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)	≥95%	92 – 94%	<92%	
Expiratory phase[b]	Normal; 1:1	Prolonged; 1:2	Severely prolonged; ≤1:3	
Add component values	___	+___	+___	+___
Total Score on scale of 0 to 16				___

Abbreviations: AAIRS, Acute asthma intensity research score; SCM, sternocleidomastoid; SpO_2, 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

Consider Pulmonary Consult:

- For a life-threatening asthma exacerbation
- 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.

Created April 2014

V3.0 : last mod – 7/27/20

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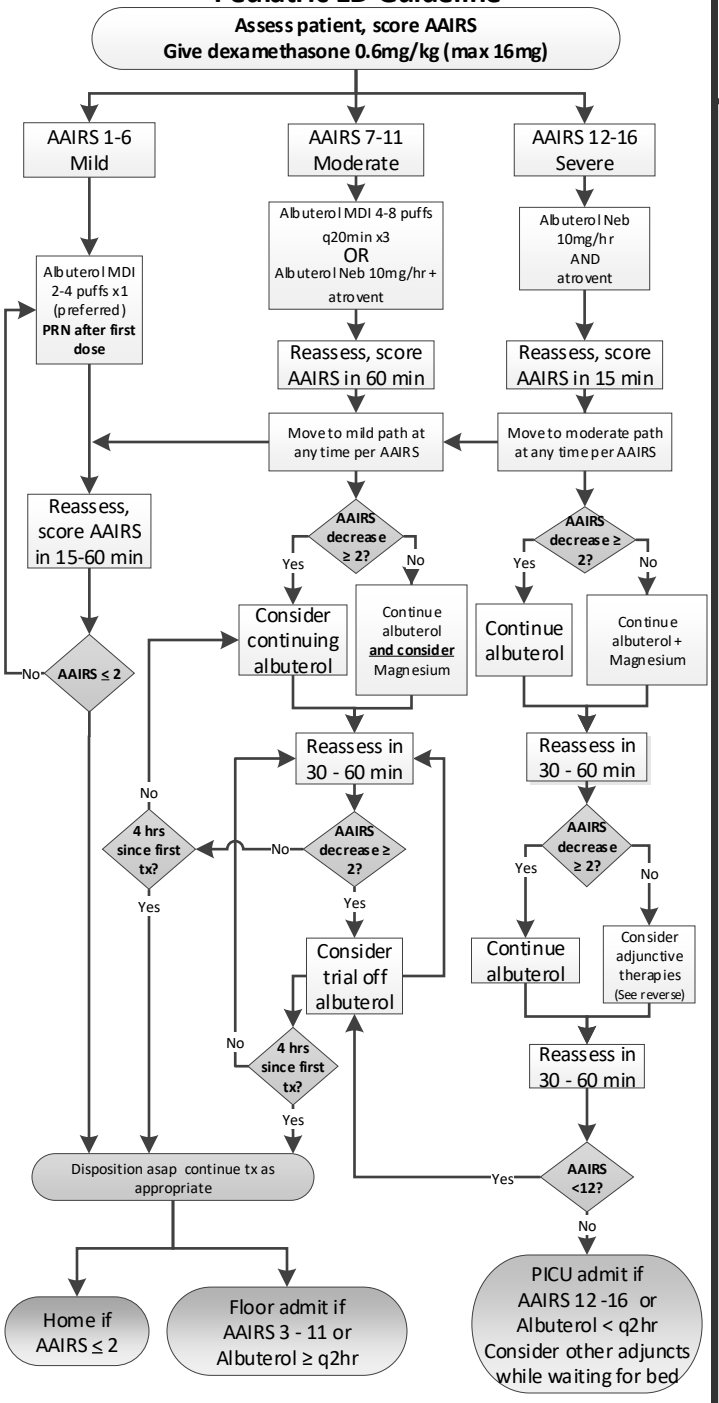
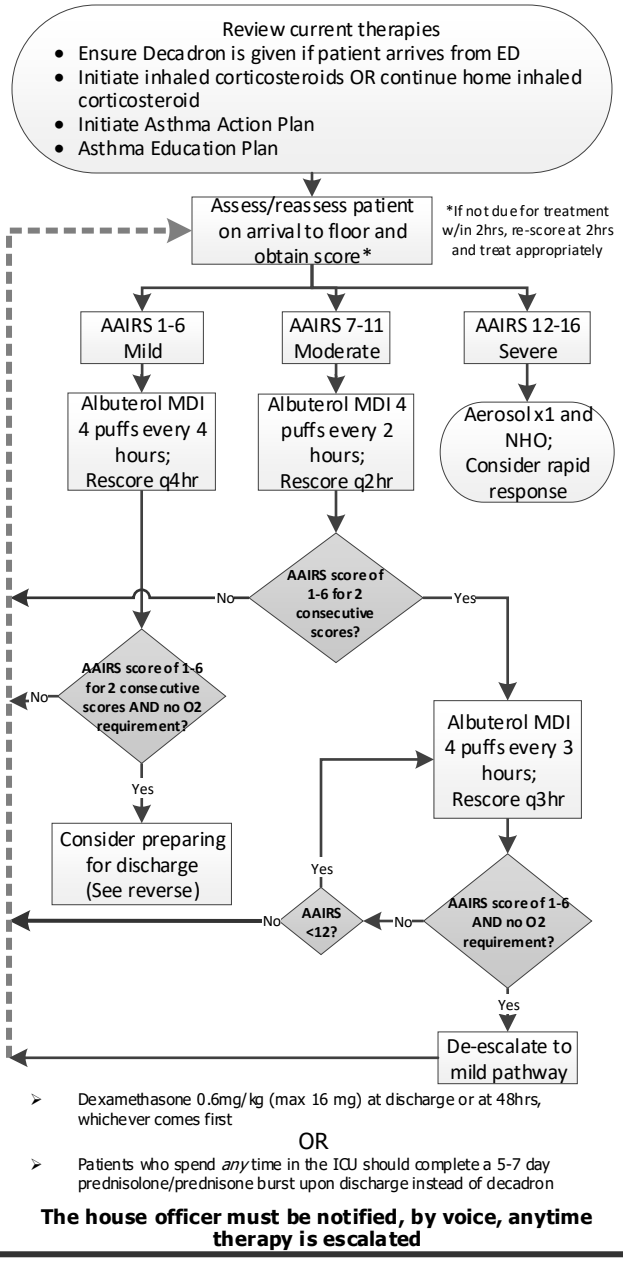
AAIRS Scoring for Asthma
Pediatric ED Guideline



Goal: Disposition Decision within 4 hours

AAIRS Scoring for Asthma
Pediatric Acute Care Guideline



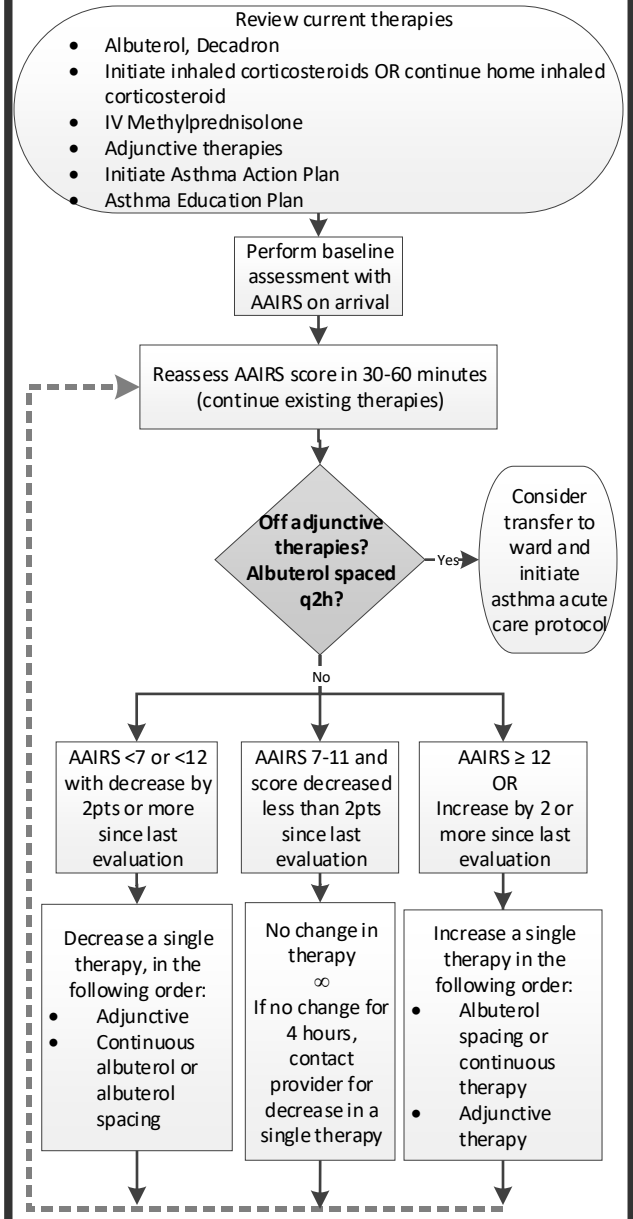
- Dexamethasone 0.6mg/kg (max 16 mg) at discharge or at 48hrs, whichever comes first

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

AAIRS Scoring for Asthma
Pediatric ICU Guideline



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