

## Asthma Assessment/Treatment Guidelines

**Purpose:** To provide asthma patients with appropriate, timely and effective care based on assessment by respiratory care practitioners using standard assessment and treatment guidelines.

### Overview:

A patient, who meets the Asthma Guidelines, may have an initial respiratory treatment started based on the guidelines prior to assessment by a physician/LIP. In addition, a chart review and physical assessment will be completed and a treatment plan developed based on these findings.

Ongoing assessments will be conducted and changes in the patient's status will be promptly communicated to the physician/LIP. Any adjustments to the treatment plan require a physician/LIP order.

Patients age  $\geq 2$  years that meet the Acute Asthma Guidelines will be classified as Mild, Moderate or Severe/Critical per NHLBI standards.

**Admission/Treatment Criteria:** Patients  $< 2$  years of age must meet **one** of the following:

- Previous diagnosis of asthma or reactive airway disease, or history of wheeze
- First time wheeze and one of the following: food allergy, allergic rhinitis, eczema, or parent with asthma

**Exclusion Criteria:** Patients with any of the following should not be assessed nor treated by these guidelines:

- BPD with oxygen requirement or diuretic therapy
- Complex congenital heart disease
- Tracheostomy
- Complicated pneumonia (empyema or necrotic pneumonia)
- Cystic fibrosis
- Chronic lung disease/interstitial
- Bronchiolitis
- Intubated

**Assessment:** The following Pediatric Asthma Score (PAS) performed before and after each treatment; includes SpO<sub>2</sub>. The floor therapists will write the score on the whiteboard in the patient's room.

**Advancement:** Two scheduled treatments will be given in the current PAS class prior to advancement along the PAS pathway.



### Pediatric Asthma Score (PAS)

Exam Component	1	2	3
<b>Respiratory Rate</b>			
1-4 years	≤ 34	35-39	≥ 40
4-6 years	≤ 30	31-35	≥ 36
6-12 years	≤ 26	27-30	≥ 31
>12 years	≤ 23	24-27	≥ 28
<b>SpO<sub>2</sub> Requirement</b>	> 95 % on room air	90-95 % on room air	< 90 % on room air <b>or</b> requiring oxygen
<b>Retractions</b>	None or intercostal	Intercostal and substernal	Intercostal, substernal, and supraclavicular
<b>Work of Breathing</b> (Count to 10)	Speaks in sentences, coos and babbles	Speaks in partial sentences, short cry	Speaks in single words/short phrases, grunting
<b>Auscultation</b>	Normal breath sounds to end-expiratory wheezes only	Expiratory wheezing	Inspiratory and expiratory wheezing to diminished breath sounds
<b>Total PAS</b>	Mild = 5-7	Moderate = 8-11	Severe/Critical ≥ 12

**Severity:** Total PAS score determines the severity and the guidelines for treatment and frequency. The patient severity determined during the pre-assessment offers guidance for pathway movement. The post-assessment score should be documented, but the treatment and frequency should not change based on post-assessment.

Inpatient Treatment Only		
Mild	Moderate	Severe/Critical
Score 5-7 Q6h Frequency	Score 8-11 Q4h Frequency	Score 12-15 Q2h Frequency
Medication	Medication	
<b>MDI</b> <input type="checkbox"/> < 20 kg 2 puffs <input type="checkbox"/> > 20 kg 4 puffs  <b>Nebulized</b> (Unable to tolerate MDI or MD preference) <input type="checkbox"/> < 20 kg Albuterol 2.5 mg <input type="checkbox"/> ≥ 20 kg Albuterol 5 mg	<b>MDI</b> <input type="checkbox"/> < 20 kg 4 puffs <input type="checkbox"/> 20-30 kg 6 puffs <input type="checkbox"/> > 30 kg 8 puffs  <b>Nebulized</b> <input type="checkbox"/> < 20 kg Albuterol 2.5 mg <input type="checkbox"/> ≥ 20 kg Albuterol 5 mg	<b>MDI</b> <input type="checkbox"/> < 20 kg 6 puffs <input type="checkbox"/> 20 – 30 kg 8 puffs <input type="checkbox"/> > 30 kg 10 puffs  <b>Nebulized</b> <input type="checkbox"/> < 20 kg Albuterol 2.5 mg <input type="checkbox"/> ≥ 20 kg Albuterol 5 mg <b>Floor intensification-</b> 5 mg Albuterol + 0.5 mg Ipratropium Q30” x 2

Emergency Department Treatment Only Mild	Moderate	Severe/Critical
Albuterol <input type="checkbox"/> ≤ 20 kg 6 puffs MDI (space/mask) <input type="checkbox"/> > 20 kg 12 puffs  Nebulization <input type="checkbox"/> ≤ 20 kg 2.5 mg / 3 mL Albuterol <input type="checkbox"/> > 20 kg 5 mg / 6 mL	Albuterol <input type="checkbox"/> ≤ 20 kg 6 puffs MDI (space/mask) <input type="checkbox"/> > 20 kg 12 puffs  Nebulization <input type="checkbox"/> ≤ 20 kg 2.5 mg / 3 mL Albuterol <input type="checkbox"/> > 20 kg 5 mg / 6 mL	Albuterol Nebulization (Intensification) <input type="checkbox"/> ≤ 20 kg 7.5 mg / 9 mL  <input type="checkbox"/> > 20 kg 15 mg / 18mL
No atrovent indicated	Atrovent Nebulization <input type="checkbox"/> 0.5 mg / 2.5 mL	Atrovent Nebulization <input type="checkbox"/> 0.5 mg/2.5 mL

**Emergency Department only:** If patient appropriate for floor admission, the inpatient medication guidelines will be followed until patient is transferred. Ancillary treatments for severe/critical patients are per ED Protocol.

**Inhaled bronchodilators:** MDI with valved holding chamber (VHC) is the preferred method of administration, however, nebulized doses are available if patient unable to tolerate MDI or physician preferred.

**Asthma Education:** Education should begin upon admission and occur during each therapy session, focusing on the individual topics identified during the learning assessment. Each patient should have an **Asthma Home Plan of Care** completed prior to discharge.

**Recommended discharge criteria:**

- PAS ≤ 7
- SpO<sub>2</sub> ≥ 92% on room air
- Minimal or no wheezing
- Completion of asthma education
- Completion of **Asthma Home Plan of Care**

---

**Respiratory Care Medical Director: Dr. D. Stokes**

**Date**

---

**Emergency Department Medical Director: Dr. B. Gilmore**

**Date**

## References

- Chipps, BE. & Murphy, KR. Assessment and treatment of acute asthma in Children. *Journal of Pediatrics* 2005; 147: 288-94.
- Kelly, CS, Anderson, CL, Pestian, JP, et al. Improved outcomes for hospitalized asthmatic children using a clinical pathway. *Annals of Allergy, Asthma, & Immunology* 2000; 84: 509-516.
- Liu, LL., Gallaher, MM, Davis, RL, et al. Use of a respiratory clinical score among different providers. *Pediatric Pulmonology* 2004; 37:243-248.
- National Asthma Education and Prevention Program (NAEPP). Expert Panel Report 3 (EPR3): Guidelines for the diagnosis and management of asthma. National Heart Lung and Blood Institute Publication No. 08-4051: 2007.