

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 ≥ 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 SpO₂. 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
Respiratory Rate			
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
SpO₂ Requirement	> 95 % on room air	90-95 % on room air	< 90 % on room air or requiring oxygen
Retractions	None or intercostal	Intercostal and substernal	Intercostal, substernal, and supraclavicular
Work of Breathing (Count to 10)	Speaks in sentences, coos and babbles	Speaks in partial sentences, short cry	Speaks in single words/short phrases, grunting
Auscultation	Normal breath sounds to end-expiratory wheezes only	Expiratory wheezing	Inspiratory and expiratory wheezing to diminished breath sounds
Total PAS	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	
MDI <input type="checkbox"/> < 20 kg 2 puffs <input type="checkbox"/> > 20 kg 4 puffs Nebulized (Unable to tolerate MDI or MD preference) <input type="checkbox"/> < 20 kg Albuterol 2.5 mg <input type="checkbox"/> ≥ 20 kg Albuterol 5 mg	MDI <input type="checkbox"/> < 20 kg 4 puffs <input type="checkbox"/> 20-30 kg 6 puffs <input type="checkbox"/> > 30 kg 8 puffs Nebulized <input type="checkbox"/> < 20 kg Albuterol 2.5 mg <input type="checkbox"/> ≥ 20 kg Albuterol 5 mg	MDI <input type="checkbox"/> < 20 kg 6 puffs <input type="checkbox"/> 20 – 30 kg 8 puffs <input type="checkbox"/> > 30 kg 10 puffs Nebulized <input type="checkbox"/> < 20 kg Albuterol 2.5 mg <input type="checkbox"/> ≥ 20 kg Albuterol 5 mg Floor intensification- 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
- SpO₂ ≥ 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.