

INCLUSION CRITERIA

Children ≥ 2 years old with a history of asthma or wheezing necessitating albuterol use who present with symptoms of asthma exacerbation or wheezing

EXCLUSION CRITERIA

- Anaphylaxis
- Pneumonia
- Cardiac disease requiring chronic medications
- Cystic fibrosis
- Immunodeficiency
- Suppurative lung disease
- Tracheostomy
- Sickle cell disease
- Medically complex
- Impending respiratory failure

MEASURES

- Time from ED arrival to albuterol administration
- Time from ED arrival to steroid administration
- Hospital LOS
- 48-hour ED returns
- 30-day hospital readmission

¹ALBUTEROL ADMINISTRATION

- MDI with spacer preferred for intermittent dosing

DIFFERENTIAL DIAGNOSES

- Foreign body aspiration
- Pneumonia
- Croup
- Heart failure
- Anaphylaxis

NOT ROUTINELY RECOMMENDED

- Antibiotics

INITIAL ASSESSMENT

- Perform physical examination to assess exacerbation severity, complicating factors, and differential diagnoses of acute breathlessness
- Obtain history including current reliever and maintenance medications
- Determine if patient has an asthma plan and if they have utilized their plan

Determine Modified Respiratory Score

Mild Modified Respiratory Score 1-3

Do they have an asthma plan?

No

Yes

Utilized asthma plan?

Yes

No

Initial Treatment

- Recommend albuterol¹ MDI or nebulized every Q4 hrs. for cough
- Prescribe dexamethasone/ prednisone if patient has used albuterol every 4 hrs. for the last 24 hrs.

Discharge Medication

- Continue albuterol¹ MDI/ neb Q4 hrs. until PCP follow up in 24 hrs.

Moderate or Severe Modified Respiratory Score ≥ 4

Emergency Care

- Send to ED or call 911 if indicated
- Start albuterol¹ MDI or nebulized every 15 minutes up to 3 doses in route

Initial Treatment

- Recommend initiation of asthma plan

Discharge Medication

- Prescribe any medications recommended by asthma plan if not currently available at home

Follow Up

- Provide related educational resources
- Review asthma plan with family
- PCP follow up within 24 hrs.
- Seek urgent care or ED if symptoms worsening

Telehealth Modified Respiratory Score				
Variable	0 Points	1 Point	2 Points	3 Points
Respiratory Rate				
2-3 yo		≤ 34	35-39	> 40
4-5 yo		≤ 30	31-35	> 36
6-12 yo		≤ 26	27-30	> 31
> 12 yo		≤ 23	24-27	> 28
Retractions				
	None	Mild retractions: subcostal or intercostal	Moderate retractions in 2 of the following: subcostal, intercostal, substernal OR nasal flaring	Severe retractions in 3 of the following: subcostal, intercostal, substernal, supraclavicular, OR nasal flaring/ head bobbing
Dyspnea				
* Automatic score of 1 for enteric feeding device or NPO				
2-4 yo (or >4 yo and nonverbal at baseline)	Normal feeding, vocalizations and play	1 of the following: decreased appetite, increased coughing after play, hyperactivity	2 of the following: decreased appetite, increased coughing after play, hyperactivity	Stops eating or drinking, stops playing, OR drowsy and confused
> 4 yo	Counts to ≥ 10 in one breath	Counts to 7-9 in one breath	Counts to 4-6 in one breath	Counts to ≤ 3 in one breath
Total Points:				
1-3: Mild Modified Respiratory Score				
≥ 4: Moderate/Severe Modified Respiratory Score				

Albuterol Discharge (Low Dose)		
Weight	Dose	
	Albuterol MDI	Albuterol Nebulized
< 10 kg	2 inhalations	2.5 mg
10-20 kg	4 inhalations	
> 20 kg		

Clinical Pathway Abbreviations	
Abbreviation	Definition
ACT	Asthma Control Test
CBC with diff	Complete Blood Count with Differential
CXR	Chest-Xray
FEV1	Forced Expiratory Volume in 1 second
GERD	Gastroesophageal Reflux Disease
ICS	Inhaled Corticosteroid
IgE	Immunoglobulin E
LABA	Long-Acting Beta-Agonist
LAMA	Long-Acting Muscarinic Antagonist
LTRA	Leukotriene Receptor Antagonist
OCS	Oral Corticosteroid
PRN	As Needed
RAST	Radioallergosorbent Test
SABA	Short-Acting Beta-Agonist
SMART	Single Maintenance And Reliever Therapy

Disclaimer: The clinical pathways are based upon publicly available medical evidence and/or a consensus of medical practitioners at Nemours Children's Health ("Nemours") and are current at the time of publication. These clinical pathways are intended to be a guide for practitioners and may need to be adapted for each specific patient based on the practitioner's professional judgment, consideration of any unique circumstances, the needs of each patient and their family, and/or the availability of various resources at the health care institution where the patient is located.

VERSION MANAGEMENT

- Version 1.0 (3/31/2025): Go Live.

Questions about this pathway should be directed to **clinicalpathways@nemours.org**.

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