

RN Protocol: Asthma/Bronchospasm

I. POLICY

- A. Function: To facilitate and guide the Registered Nurse (RN) in the assessment and treatment of patients with acute asthma exacerbation.

- B. Circumstances under which the RN may perform:
 - 1. Setting: Outpatient clinic and Triage and Treatment Area.
 - 2. Supervision: None required.

II. PROTOCOL

A. Definition: This protocol covers the assessment and treatment of patients presenting with signs of acute asthma exacerbation. Asthma is defined as a chronic lung disease characterized by reversible airway obstruction, airway inflammation, and increased airway responsiveness to a variety of stimuli. A combination of bronchospasm, inflammation, and excess mucous secretion narrows the airway and obstructs airflow, producing wheezing, shortness of breath, and chest tightness. The severity of asthma exacerbations may be classified as mild, moderate, or severe, based on the symptoms, signs, and diagnostic tests. See attached table for symptoms and signs of mild, moderate, and severe asthma exacerbation.

B. Subjective:

- 1. Chief complaint (document in the patient's own words).
- 2. Date and time of onset.
- 3. The patient describes any of the following symptoms: shortness of breath, cough (describe sputum if present), wheezing, air hunger, dyspnea, chest tightness, sleep disruption and activity restrictions due to recent onset of symptoms.
- 4. History of asthma.
- 5. History of sensitivity to dust, pollen, mold, animal dander, grass, insecticides, etc.
- 6. History of recent respiratory infection.
- 7. Smoker.
- 8. Allergies.
- 9. Current medications (including metered dose inhalers (MDIs), frequency of use and last dose taken).
- 10. What the patient has already done to treat the exacerbation and the patient's response to the treatment.
- 11. What the patient thinks triggered the exacerbation.

C. Objective:

- 1. Vital signs
- 2. Assess level of consciousness
- 3. Observe the patient for the following:
 - a. Dyspnea.
 - b. Restlessness.

- c. Retractions.
 - d. Nasal flaring.
 - e. Use of accessory muscles.
 - f. Too breathless to speak in sentences.
 - g. Diaphoresis.
 - h. Cyanosis.
4. Assess breath sounds bilaterally (clear, wheezes, crackles, diminished, absent).
 5. Obtain peak expiratory flow (PEF) rate.
 6. Obtain pulse oximetry reading (required).

D. Assessment:

- Ineffective breathing pattern related to/evidenced by:
- Impaired gas exchange related to/evidenced by:
- Ineffective airway clearance related to/evidenced by:

E. Plan:

MILD TO MODERATE BRONCHOSPASM (see attached table for signs and symptoms associated with mild to moderate asthma exacerbation):

1. Maintain patent airway.
 2. Place on pulse oximeter and administer supplemental oxygen at 2-6L/minute via nasal cannula to maintain oxygen saturation above 92%.
 3. Administer Levalbuterol Inhaler 45mcg/puff, 2-6 puffs by MDI every 20 minutes x 3 doses and administer Prednisone 40-60mg PO x 1 dose.
Note: Data demonstrates that use of an MDI with a spacer is more effective than nebulizer treatments.
 4. Reassess response every 20 minutes for the first hour.
 5. If incomplete response, defined as: PEF 50-79%, do one of the following:
 - a. Levalbuterol Inhaler 45mcg/puff, 2-6 puffs by MDI every 20 minutes x 3 doses. Reassess response in 20-60 minutes. If no improvement proceed to “Severe Bronchospasm” protocol below.
- OR**
- b. Premixed albuterol 2.5mg/ipratropium 0.5 mg nebulizer solution via nebulizer every 20 minutes x 3 doses. Reassess response in 20-60 minutes. If no improvement proceed to “Severe Bronchospasm” protocol below.

SEVERE BRONCHOSPASM- UNABLE TO PERFORM PEF OR PEF < 50%, SaO₂ < 92% OR IF IN SEVERE RESPIRATORY DISTRESS. (See attached table for additional signs and symptoms associated with severe asthma exacerbation):

1. Transport to Emergency Treatment Area and notify physician **STAT**.
2. Place on pulse oximeter and administer supplemental oxygen at 2-6L/minute via nasal cannula or 15L/minute by mask to maintain oxygen saturation above 92%.
3. Monitor cardiac rate and rhythm with EKG machine or cardiac monitor.
4. Administer Prednisone 40-60mg PO x 1 immediately.

5. Administer premixed albuterol 2.5mg/ipratropium 0.5 mg nebulizer solution via nebulizer every 20 minutes.
6. Insert intravenous line and infuse Sodium Chloride Intravenous Solution 0.9%. Adjust infusion rate to keep systolic blood pressure >90mm Hg.
7. Monitor and record vital signs, breath sounds, oxygen saturation, obtain PEF readings as tolerated and level of consciousness at least every 20 minutes for the first hour.
8. Prepare to transfer the patient to an outside facility or admit to a facility capable of providing a higher level of care.
9. Fax a copy of the relevant progress notes, physician orders, and emergency care flow sheet to receiving facility.

F. Patient Education:

1. Assess the patient's potential for understanding the health information to be provided.
2. Provide patient education consistent with the assessment of the condition.
3. Document the education provided and the patient's level of understanding in the health record.
4. Refer the patient to other resources as needed. Document all referrals in the health record.
5. Advise the patient to utilize the urgent/emergent process to access medical care or resubmit a CDC 7362, Health Care Services Request Form, if symptoms reoccur or condition deteriorates.

G. Documentation:

All information related to the patient's complaint shall be documented on the emergency care flow sheet, nursing protocol encounter form, or progress note and filed in the patient's health record.

III. REQUIREMENTS FOR THE REGISTERED NURSE

- A. Education/Training: The RN shall attend an in-service on acute asthma exacerbation, and achieve a minimum score of 80% on the written posttest examination.
- B. Experience: None.
- C. Certification: None.
- D. Initial Evaluation: Initial competence will be validated onsite using simulated exercises, mock scenarios, return demonstration, and written tests. The RN must satisfactorily demonstrate all critical behaviors identified on the Competence Validation Tool to be considered competent to perform standardized procedure functions.

A written performance appraisal shall be performed by the Supervising RN or designee six months after initial competence has been validated. Methods to evaluate performance shall include, but not be limited to direct observation, feedback from colleagues and physicians, and chart review.

- E. Ongoing Evaluation: Ongoing competence will be validated annually using case study analysis.

IV. REGISTERED NURSES AUTHORIZED TO PERFORM THIS PROCEDURE

A current list of all RNs authorized to perform this procedure shall be maintained on file in the Office of the Director of Nursing.

V. DEVELOPMENT AND APPROVAL OF THE STANDARDIZED PROCEDURE

This standardized procedure was developed and approved by authorized representatives of administration, medicine, and nursing. The procedure will be reviewed annually.

REVIEW DATE: _____

REVISION DATE: _____

THE PROTOCOL WAS APPROVED BY:

Chief Nurse Executive/Director of Nursing

Chief Medical Executive

DATE: _____

DATE: _____

SEVERITY OF ASTHMA EXACERBATION BY CLASSIFICATION

	Mild	Moderate	Severe	Respiratory Arrest Imminent
Symptoms				
Breathlessness	While walking Can lie down	While talking Prefers sitting	While at rest Sits upright	
Talks in	Sentences	Phrases	Words	
Alertness	May be agitated	Usually agitated	Usually agitated	Drowsy or confused
Signs				
Respiratory rate	Increased	> 25/min	Often > 30/min	
Use of accessory muscles; suprasternal retractions	Usually not	Commonly	Usually	Paradoxical thoracoabdominal movement
Wheeze	Moderate, often only end expiratory	Loud; throughout exhalation	Usually loud; throughout inhalation and exhalation	Absence of wheeze
Pulse/minute	< 100	< 110	> 120	Bradycardia
Functional Assessment				
PEF % predicted or % personal best	> 80%	Approx. 50-79 % or response lasts < 2 hours	< 50% predicted or personal best	
PaO ₂ (on room air) and/or	Normal (test not usually necessary)	> 60 mm Hg (test not usually necessary)	< 60 mm Hg; possible cyanosis	
PCO ₂	< 42 mm Hg (test not usually necessary)	< 42 mm Hg (test not usually necessary)	> 42 mm Hg; possible respiratory failure	
SaO ₂ % (on room air) at sea level	> 95%	92-95%	< 92%	

Note:

- The presence of several parameters, but not necessarily all, indicates the general classification of the exacerbation.
- These parameters serve only as general guidelines.

Adapted from the National Institutes of Health 2007 Guidelines for the Diagnosis and Management of Asthma. Expert Panel Report 3.