If RESPIRATORY ARREST IMMINENT-
Triage and Initiate care in resuscitation room

**Exclusion Criteria:**
bronchiolitis, cystic fibrosis,
tracheostomy patients, neuromuscular diseases, immunodeficiency &
cardiac patients (unless ordered), and other chronic lung disease (unless ordered)

**Induction Criteria:**
Patients 2-18 years of age with acute asthma exacerbation

- Supplemental Oxygen should be administered to maintain SaO2 >90%
- Initial PAS score done at triage and on room placement

**1st HOUR**

**PAS 1-2**
- Albuterol 5 mg Neb
- Repeat per clinician discretion
- Consider Steroids in some cases- consult with physician

**PAS 3-5**
- Albuterol Neb over 1 hour
  - Albuterol Neb over 1 hour
    - 20 mg: Albuterol 10 mg/ 20 mg: Albuterol 15 mg
    - Ipratropium 1 mg via neb
    - In conjunction with Albuterol
    - Dexamethasone 0.6 mg/kg (max 16 mg) PO/ IM or
    - Methylprednisolone 2mg/kg (max 60mg) IV for PO intolerant

**PAS 6-10**
- Albuterol Neb over 1 hour
  - Albuterol Neb over 1 hour
    - 20 mg: Albuterol 10 mg/ 20 mg: Albuterol 15 mg
    - Ipratropium 1 mg via neb
    - In conjunction with Albuterol
    - Dexamethasone 0.6 mg/kg (max 16 mg) PO/ IM or
    - Methylprednisolone 2mg/kg (max 60mg) IV for PO intolerant

**2nd HOUR**

**PAS 0-2**
Discharge to HOME
- Asthma Action Plan
- Asthma Education to include Smoking
- Cessation referral if indicated
- Re-label Albuterol
- Script for Controller Meds, if applicable
- Script for Dexamethasone Dose 2-0.6mg/kg (max 16mg) PO x 1 to be given
- 24 hours after 1st dose, if applicable

**PAS 3-5**
Admit to FLOOR
- Albuterol Neb over 1 hour
  - 20 mg: Albuterol 10 mg/ 20 mg: Albuterol 15 mg

**PAS 6-7**
Admit to Pulmonary Unit
(see Addendum 5 for Pulmonary Unit exclusion criteria)
- Albuterol Neb over 1 hour
  - 20 mg: Albuterol 10 mg/ 20 mg: Albuterol 15 mg
  - **Consider adjunctive therapy**

**PAS 8-10**
POOR RESPONDER
- Contact PICU for Admission if Terbutaline
- Continuous

**3rd HOUR**

**PAS 0-2**
Discharge to HOME
- See above recommendations

**PAS 3-5**
Admit to FLOOR
- Albuterol Neb over 1 hour
  - 20 mg: Albuterol 10 mg/ 20 mg: Albuterol 15 mg

**PAS 6-7**
Admit to Pulmonary Unit
(see Addendum 5 for Pulmonary Unit exclusion criteria)
- Albuterol Neb over 1 hour
  - 20 mg: Albuterol 10 mg/ 20 mg: Albuterol 15 mg
  - **Consider adjunctive therapy**

**PAS 8-10**
POOR RESPONDER
- Contact PICU for Admission if Terbutaline
- Continuous

**Adjunctive Therapy Options**

**IV NS bolus** (20ml/kg, max 1L)

**Magnesium Sulfate** 50 mg/kg IV (max 2 g) over 20-30 min. x1

**Terbutaline** 10mg/kg SQ (Max 250mcg/0.25ml) X1 for child in 

**EOF** (can be given Q20 minutes x 3 doses until IV established)

**If considering IV/ Terbutaline**
- **Must be ordered in concert with STAT PICU consult**
- Recommended starting dose:
  - 10 mcg/kg (max 250 mcg) IV load over 15 minutes,
    followed by: Terbutaline continuous IV drip 0.4 mg/kg/min
  - STAT call to Pharmacy for IV drip Terbutaline

**Assessment**

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<td>speaks partial sentences, short cry</td>
<td>speaks short phrases, single words, grunting</td>
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**NOTE:** CXR and Blood Gas are not recommended for Routine Asthma Exacerbation
Inpatient Asthma Pathway Guidelines

- Reassess PAS score with every treatment
- Supplemental O2 to maintain SaO2 >90%
- Smoking cessation counseling when indicated

STAGE 1
PAS Score 1-2
Acute Care
Mild

- Albuterol Q4 hours 8 puffs w/inhaler
- Order Steroids per Addendum 1
- Day team to classify patient: if symptoms qualify, order controller (see addendum 2&3)

Clinical Readiness for Discharge
- Albuterol Q4 hours 8 puffs or 5 mg Q4 times 1 dose
- Oxygen Saturation >90 for more than 2 hours
- Items Required for Discharge Home (see addendum 4)

STAGE 2
PAS Score 3-5
Acute Care
Moderate

- Albuterol Q3 hours <20 kg: 5 mg Neb ≥20 kg: 7.5 mg Neb
- Order Steroids per Addendum 1
- Day team to classify patient: if symptoms qualify, order controller (see addendum 2&3)

STAGE 3
WEANING Guidelines: From PU or PICU to moderate score treatments

- PAS SCORE ≤ 5 at Q2 RT Assessment (RT will suspend continuous neb, rescore the pt in 2 hours, and begin Q2 hour dosing)

STAGE 4
PAS Score 6-7
Pulmonary Unit
Moderate to Severe

- Albuterol Continuous <20 kg: 10 mg Neb ≥20 kg: 15 mg Neb (with Q2hr PAS scores at minimum)
- Order Steroids per Addendum 1
- Day team to classify patient: if symptoms qualify, order controller (see addendum 2&3)

- Magnesium Sulfate: 50 mg/kg IV (max: 2 grams) may be given over 20-30 minutes x1 if not given in ED Max: 2 dose per 24 hour period

See Pediatric Intensive Care Asthma Pathway Guidelines

STAGE 5
PAS Score 8-10
PICU
Severe

- Albuterol Continuous <20 kg: 15 mg Neb ≥20 kg: 20 mg Neb (with Q2hr PAS scores at minimum)

For questions concerning this pathway, Click Here

Last Updated March 20, 2019
Inclusion criteria:

- Patients 2-18 years of age with acute asthma exacerbation
- Poor responders to treatment
- Patients in Extremis
- Patients Scoring 8 or higher on the PAS
- Patients not showing improvement within 6 hours of admission to the Pulmonary High Acuity Unit

Standards of Care (care every patient will receive)

- **Albuterol Continuous Nebulizer:**
  - PAS 8-10: <20kg= 15 mg/hr or >20kg= 20 mg/hr
  - PAS 6-7: <20kg= 10 mg/hr or >20kg= 15 mg/hr once patient is weaned from terbutaline & magnesium sulfate drip

  Respiratory Therapy will score the patient, at a minimum, every two hours

  Respiratory Therapy will contact the Physician/ Mid-level/ Resident for weaning orders

  *Please see the Inpatient Asthma Pathway Guidelines for dosing once patient is deemed ready to be off continuous nebs*

- **Methylprednisolone:** 1 mg/kg IV Q6 hours x 24 hours (max: 60mg per dose)
  (see Addendum 1 for methylprednisolone management and weaning guidelines)

- **Pepcid PO or IV per protocol**
  (Pepcid should be administered PO when the patient is tolerating feeds/diet, discontinue upon transfer to floor)

- **Ipratropium:** <20kg- 0.25 mg or >20kg- 0.5 mg inhaled Q6 hours x 24 hours

- **Magnesium Sulfate:** 50 mg/kg IV (2 grams max) over 20-30 minutes (if not given in ED or Pulmonary High Acuity Unit)

Medications for Refractory Treatment

- **Ipratropium:** <20kg- 0.25 mg or >20kg- 0.5 mg inhaled Q6 hours, may continue per physician discretion if necessary

- **Terbutaline 1mg/ml:** Loading dose 10mcg/kg (max: 250mcg) over 15 minutes followed by continuous IV drip 0.4 mcg/kg/minute

  *Terbutaline drip should be weaned completely before weaning continuous Albuterol*

- **Magnesium Sulfate 50mg/ml:** <30kg- 25 mg/kg/hr or >30kg- 20 mg/kg/hr continuous IV drip (max: 2g per hour)

  Check serum magnesium 2 hours after the drip is started then Q8 hours (serum magnesium target = 3-5 mg/dL)

  *Titrates by 5mg/kg/hr based on serum levels*

- **Ketamine 2mg/ml:** 5 mcg/kg/minute continuous IV drip

  *Titrates per protocol to meet sedation needs*

Recommendations for Discharge or Transfer out of the Pediatric Intensive Care Unit

- **DISCHARGE HOME**
  - PAS 1-2 (ready for discharge home)- See addendum 4 for Discharge Readiness Criteria and Requirements

- **ADMIT TO FLOOR**
  - PAS 1-2 (NOT ready for discharge home)
  - PAS 3-5

- **ADMIT TO PULMONARY UNIT**
  - PAS 6-7 (for patients exhibiting steady improvement)

- **ADMIT TO IMC**
  - PAS 6-7 (not exhibiting steady improvement, but no longer requiring PICU care)