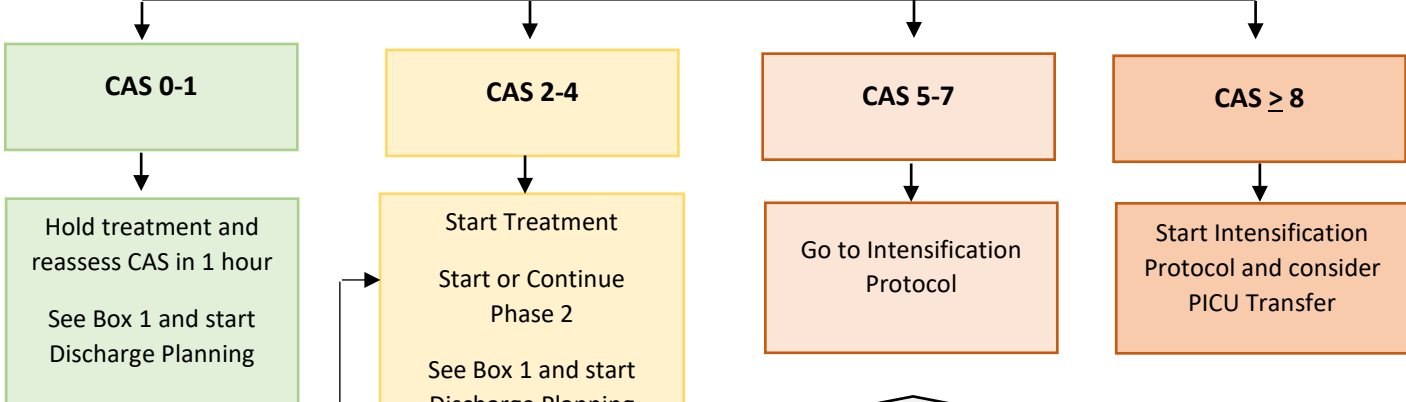


**Child Admitted for Status Asthmaticus**  
**Inclusion:** > 2 year with respiratory symptoms and h/o wheeze, albuterol use, or asthma  
**NOTE:** may be used in children > 1 year at discretion of attending physician

- Inpatient Floor Admission Criteria:** Must be able to tolerate Albuterol Q2 hour treatments
- Start the patient at Phase 2 and continue to assess using the Rainbow Clinical Asthma Score (CAS)
  - RT/RN may advance patient to Phase 3 if multiple Phase 2 treatments given while awaiting inpatient admission
  - Medical team to place orders using Asthma Inpatient Order Set and order the asthma carepath

	<b>0 – None/Mild</b>	<b>1 – Moderate</b>	<b>2 – Severe</b>
<b>Wheeze</b>	None or end expiratory wheezes	Inspiratory and/or expiratory wheezes	Breath sounds becoming inaudible
<b>Accessory Muscle Usage</b>	None	Intercostal and/or tracheosternal	Intercostal and/or tracheosternal muscles <b>PLUS</b> use of sternocleidomastoid muscles
<b>Air Exchange</b>	Equal all lobes	Decreased in some lobes	Decreased in all lobes
<b>Oxygenation</b>	SpO2 ≥94% on room air	SaO2 < 94% on room air OR SaO2 ≥ 94% on supplemental O2	SaO2 <94% on supplemental O2
<b>Respiratory Rate</b>	1-5 yrs: <30 bpm 6-14 yrs: <25 bpm ≥15 yrs: <20 bpm	1-5 yrs: 30-35 bpm 6-14 yrs: 25-30 bpm ≥15 yrs: 20-25 bpm	1-5 yrs: >35 bpm 6-14 yrs: >30 bpm ≥15 yrs: >25 bpm

Post Treatment CAS



CAS 0-1

YES

Continue Discharge Planning; see Discharge Checklist

NO

**Box 1: Discharge Checklist**

- Use Discharge Checklist to Assist with Discharge Planning**
- Social work consult completed (if ordered)
  - Order outpatient meds as soon as determined (consider Meds to Beds and prior authorization needs)
  - Arrange PCP post hospital follow up within 2 d and follow-up with asthma specialist in 6-8 w if indicated
    - Place EPIC place orders: "Referral to PCP" and "Referral to Pulmonary" or "Referral to Allergy"
    - Order is for referral even if previously established patient
  - Asthma Home Management Plan reviewed with teach-back
  - Device training and teach back performed
- If Discharged from PICU, in addition:**
- Pulmonary service has updated or reviewed Asthma Home Management Plan and approves discharge
- Medications:**
- Send multi-dose inhaler canisters home with patient that were used during admission if labeled appropriately and directions match discharge orders
  - Usual post-exacerbation bronchodilator: Albuterol MDI (90mcg/inh) 4 puffs q4h x 48 hours, then follow AHMP
  - Complete steroid regimen; administer second dose (Day #2) of Dexamethasone PO if at least 24 h since first dose OR send script to complete 5-7 days of prednisolone (if post-intensification/post-ICU)
  - Pharmacy staff delivers prescriptions via Meds to Beds if applicable and/or delivers medication counseling upon request

**Inpatient Acute Asthma Exacerbation – Treatment Phase**

Phase 2 (Q 2 hours); Phase 3 (Q 3 hours); OR Phase 4 (Q 4 Hours)

If Patient in PICU, assess for readiness to transfer to regular floor once at Phase 2 or discharge from PICU (See Box 1)

- Reassess CAS every 2, 3, or 4 hours according to Phase.
- Education is provided by RT/RN to patient, parent, or caregiver at every treatment when present or available
  - During Phase 2, 3, & 4: Review RED ZONE education with each treatment. Document in EPIC
  - During Phase 3 & 4: Review YELLOW ZONE education with each treatment. Document in EPIC
- Discharge Planning (See Box 1) is recommended to be started as soon as floor admission occurs or phase advancement to Phase 2

**Phase 2 or 3 (Q2 or Q3)**

**Phase 4 (Q4)**

**CAS 0-1**

**Advance:**  
Move to the next phase (Phase 3 or 4)  
Discharge Planning

Assess CAS in (1) hour and go to Phase

**CAS 2-4**

Give Treatment  
6 puffs Albuterol MDI  
Repeat CAS according to phase

Did the patient complete 12 hours in this phase?

Give treatment and repeat CAS based on current phase  
Prepare to Transfer to Floor (Box 3)

Give treatment and advance to the next phase (Phase 3 or 4)  
Discharge Planning

**CAS ≥ 5**

Go to Intensification Protocol (next page)

**CAS 0-4**

Give Treatment:  
6 puffs Albuterol MDI  
Discharge Planning

**CAS ≥ 5**

Go to Intensification Protocol (next page)

**Box 2: Inpatient Medications (See Asthma Order Set)**

- Albuterol MDI (90 mcg/inh) 6 puffs per treatment
- Albuterol/Ipratropium Nebulizer (2.5 mg/0.5 mg per each unit dose)
- Albuterol Continuous Nebulizer:
  - <20 kg: 7.5 mg/hour x 6 hours
  - ≥ 20 kg: 10 mg/hour x 6 hours
- Dexamethasone oral X 1 dose, give 24 hour after 1<sup>st</sup> dose (preferred steroid for patients that do not require ICU care setting)
  - 0-8 kg = 4 mg
  - 8.1-15 kg = 8 mg
  - 15.1-20 kg = 12 mg
  - > 20 kg = 16 mg
- Prednisone/Prednisolone oral (step-down therapy for ICU setting or post-intensification phase): 1mg/kg/dose daily every 24 hours (max 60 mg/day) to complete 5-7 day treatment
- Administer Supplemental oxygen to achieve SpO<sub>2</sub> ≥93%

**Box 1: Discharge Checklist**

**Use Discharge Checklist to Assist with Discharge Planning**

- Social work consult completed (if ordered)
- Order outpatient meds as soon as determined (consider Meds to Beds and prior authorization needs)
- Arrange PCP post hospital follow up within 2 d and follow-up with asthma specialist in 6-8 w if indicated
  - Place EPIC place orders: "Referral to PCP" and "Referral to Pulmonary" or "Referral to Allergy"
  - Order is for referral even if previously established patient
- Asthma Home Management Plan reviewed with teach-back
- Device training and teach back performed

**If Discharged from PICU, in addition:**

- Pulmonary service has updated or reviewed Asthma Home Management Plan and approves discharge

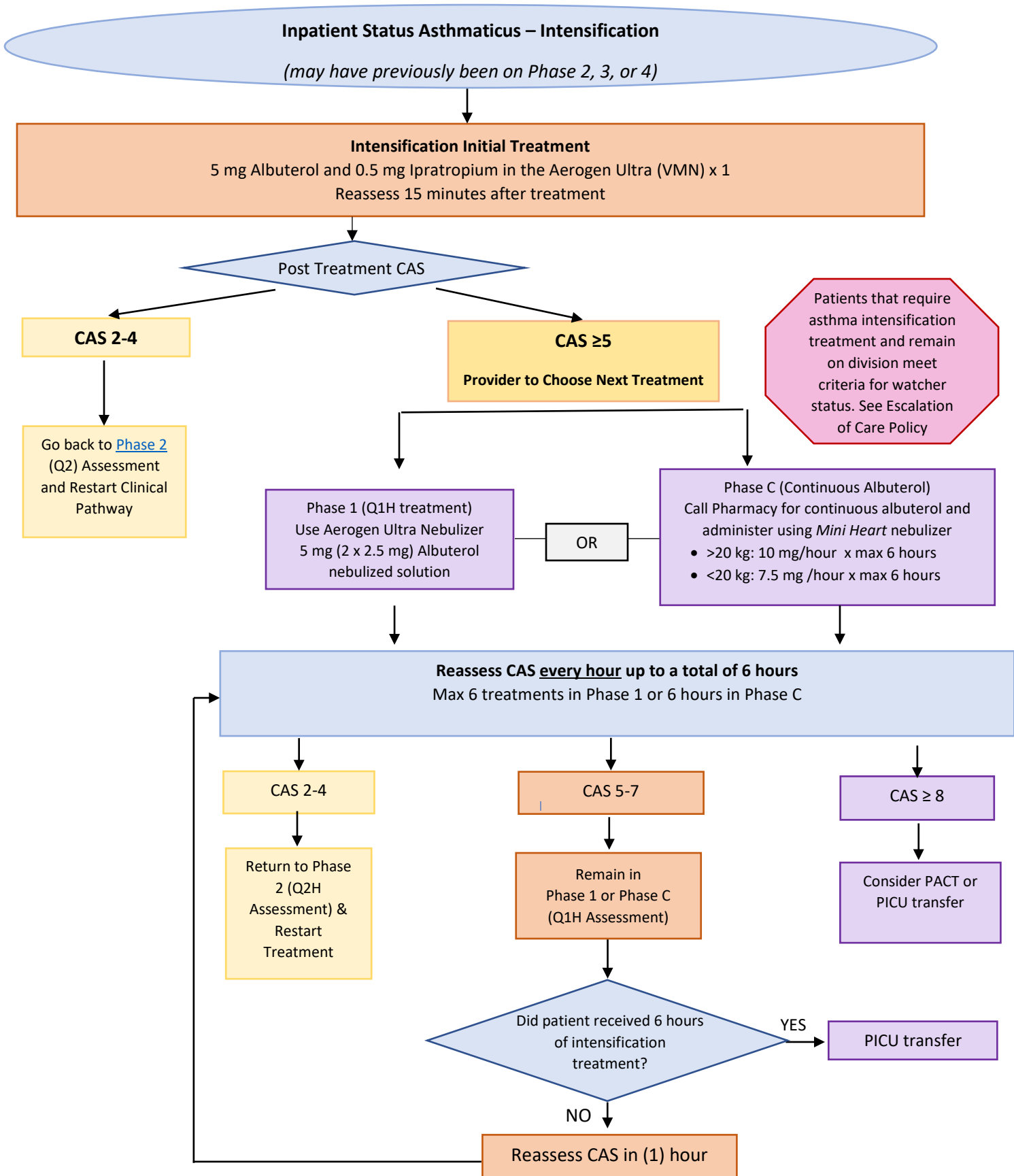
**Medications:**

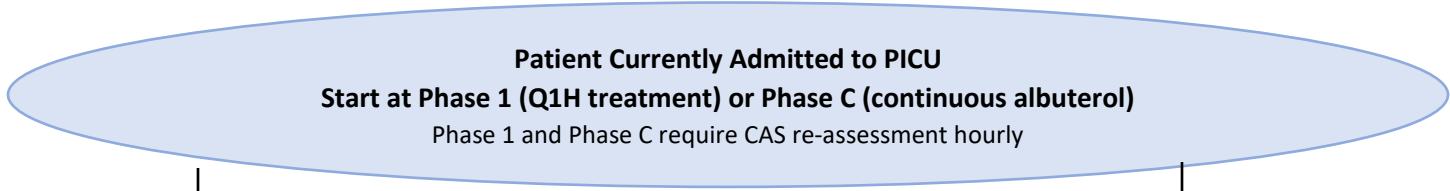
- Send multi-dose inhaler canisters home with patient that were used during admission if labeled appropriately and directions match discharge orders
- Usual post-exacerbation bronchodilator: Albuterol MDI (90mcg/inh) 4 puffs q4h x 48 hours, then follow AHMP
- Complete steroid regimen; administer second dose (Day #2) of Dexamethasone PO if at least 24 h since first dose OR send script to complete 5-7 days of prednisolone (if post-intensification/post-ICU)
- Pharmacy staff delivers prescriptions via Meds to Beds if applicable and/or delivers medication counseling upon request

**Box 3: Transfer from PICU to Floor**

- Patient has received two, q2h albuterol MDI treatments and maintaining CAS score 0-4 for 4 hours
- Patient doesn't meet any other PICU utilization criteria
- Pulmonary service has seen and examined the patient while in PICU

(NOTE: Attending to Attending discussion must occur if all criteria not met and transfer desired/needed based on bed availability)





**Start Phase 1: CAS ≤ 6**

Advance to or Remain in Phase (1)  
 2.5 mg Albuterol unit dose q1h using  
 Aerogen Ultra nebulizer

Assess CAS in (1) hour

**CAS ≤4**

Advance to  
[Phase 2](#)  
 - 6 puffs  
 Albuterol MDI

Assess CAS in (1) hour

- If CAS ≤4, cont. Phase 2;
  - Prepare to transfer patient to the floor (See Box 3)
  - Go to Inpatient Phase 2
- If CAS ≥ 5-6, restart Phase 1

**CAS 5-6**

Remain in  
 Phase 1  
 2.5 mg Albuterol unit  
 dose q1hr

Did the patient complete 12 hours in this phase?

YES

NO

Patients that require respiratory support beyond low flow oxygen are taken off the asthma carepath.  
 Resume asthma carepath once additional respiratory support is discontinued.

**Start Phase C: CAS ≥7**

**(Box 2)**  
**Start or Remain in Phase C**  
**15 mg/hour Albuterol via mini Heart nebulizer**

Assess CAS in (1) hour

**CAS ≤6**

**CAS ≥7**

Phase C:  
 Albuterol 15 mg/hour  
 via Mini Heart Nebulizer

**CAS ≥7**

**Box 3: Transfer from PICU to Floor**

- Patient has received two, q2h albuterol MDI treatments and maintaining CAS score 0-4 for 4 hours
- Patient doesn't meet any other PICU utilization criteria
- Pulmonary service has seen and examined the patient while in PICU

*(NOTE: Attending to Attending discussion must occur if all criteria not met and transfer desired/needed based on bed availability)*

**Box 4: Medications used in PICU**

- Phase C: Albuterol inhalation (0.75 mg/mL) continuous 15mg/hour (non-intubated)
- Phase 1: Albuterol 2.5mg/3mL nebulizer every 1 hour via Aerogen Ultra nebulizer
- Add CAS ≥ 5, add Ipratropium nebulizer solution - 500 mcg Q6H
- Phase 2: Albuterol MDI (90mcg/inh) 6 puffs every 2 hours PRN
- Steroid: Methylprednisolone sodium succinate IVPB 0.5 mg/kg/dose every 6 hours (maximum 30mg/dose)
- Consider Magnesium bolus
- For status asthmaticus, evidence to support improved outcomes with the use of adjunct therapies such as terbutaline and aminophylline is inconclusive and not recommended for routine use.
  - These adjuncts may be considered in patients that are not improving on standard therapies and with concern for escalation of respiratory support
  - See PICU Status Asthmaticus EPIC Order Set for dosing information
- Administer Supplemental oxygen to achieve SpO2 ≥93%