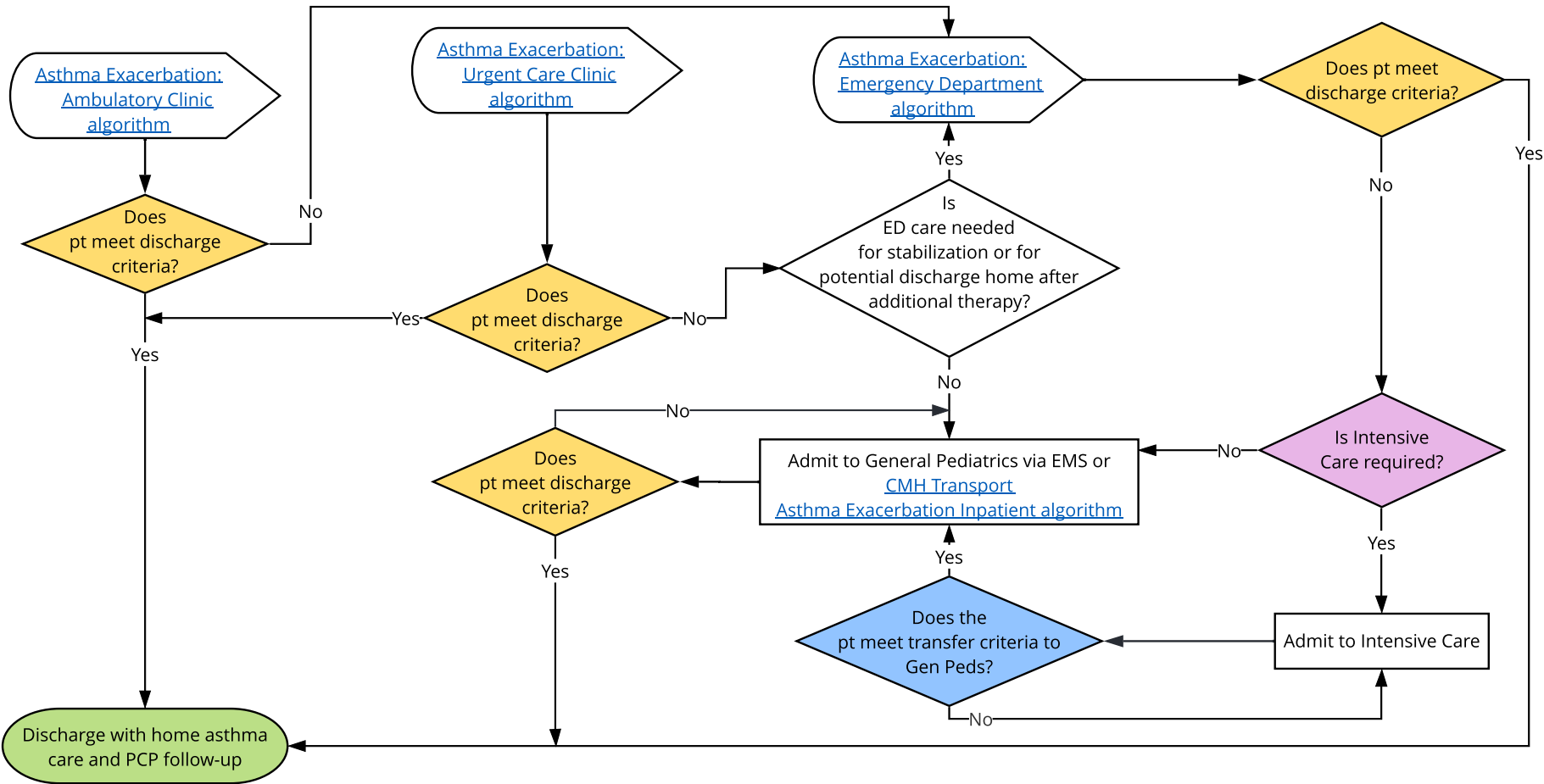




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**Discharge Criteria**

**All of the following:**

- Resolution of respiratory distress
- Resolution of hypoxemia (SpO<sub>2</sub> ≥ 90% on room air)
- Does not require albuterol more frequently than q4 hours
- Ability of caregiver to provide q4h albuterol at home

**Discharge Checklist**

- **Continue** yellow zone therapies on discharge
- **Consider** "stepping up" green zone therapies
- **Provide** Asthma Action Plan and [asthma education](#)
- **Arrange** appropriate follow-up with either PCP or Asthma Provider
- **Confirm** pt has access to prescribed medications within 2-3 hours after discharge

**Other Resources**

- [Asthma Reference Guide](#)
- [Caregiver Smoking Cessation](#)

**Intensive Care Indications**

**Any of the following:**

- Prolonged continuous albuterol for > 4 hrs with worsening symptoms
- Inadequate ventilation with hypercapnea (PCO<sub>2</sub> on capillary blood gas > 45)
- Need for high flow nasal cannula (> 0.25 L/kg/min or > 10 L/min or > 40% FiO<sub>2</sub>) or non-invasive ventilation
- Persistent hypoxemia (SpO<sub>2</sub> < 90%) despite supplemental O<sub>2</sub> (≥ 3 L/min or > 40% FiO<sub>2</sub> with non-rebreather)
- Altered level of consciousness (drowsiness)

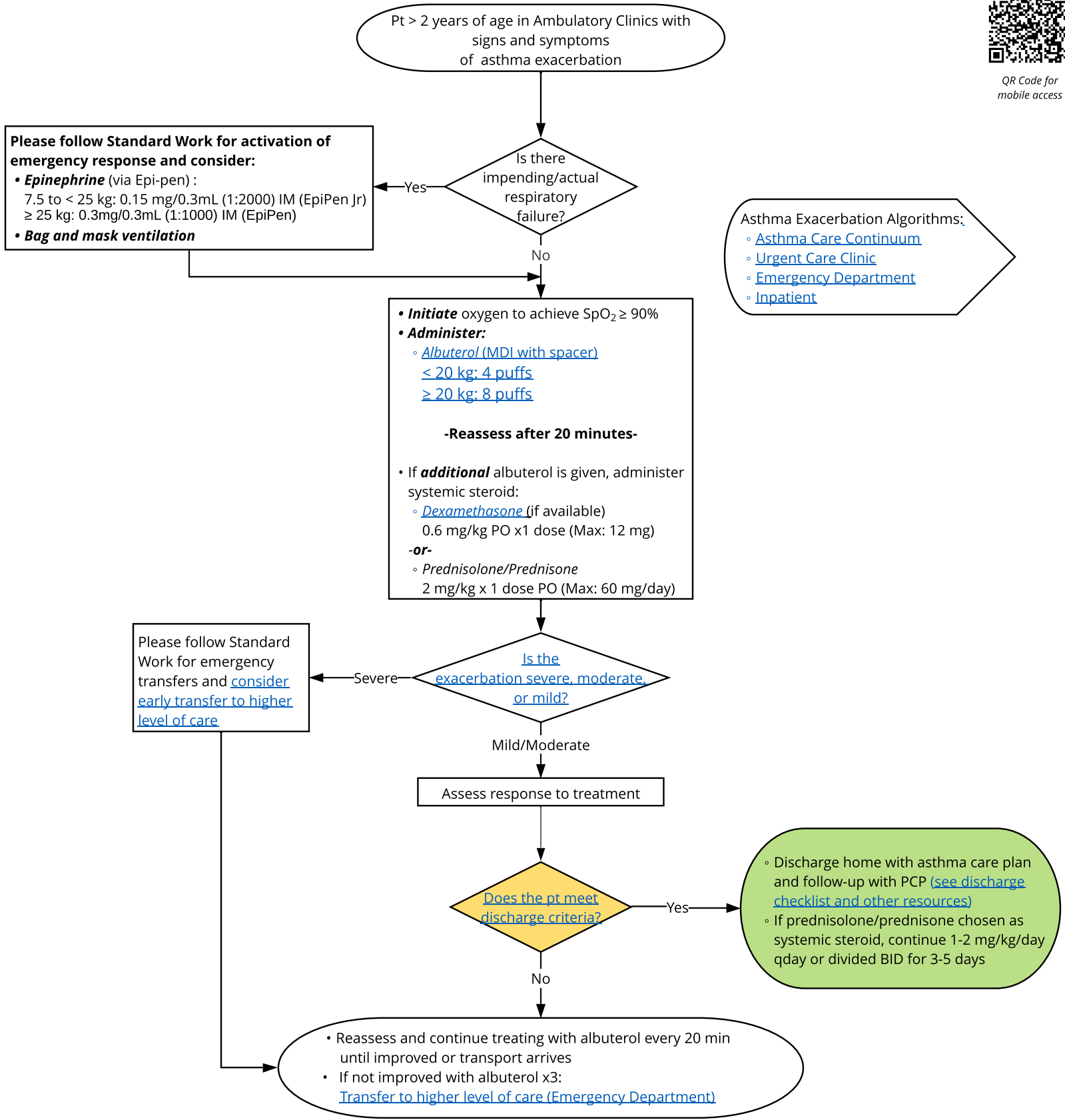
**Criteria for Transfer Out of ICU**

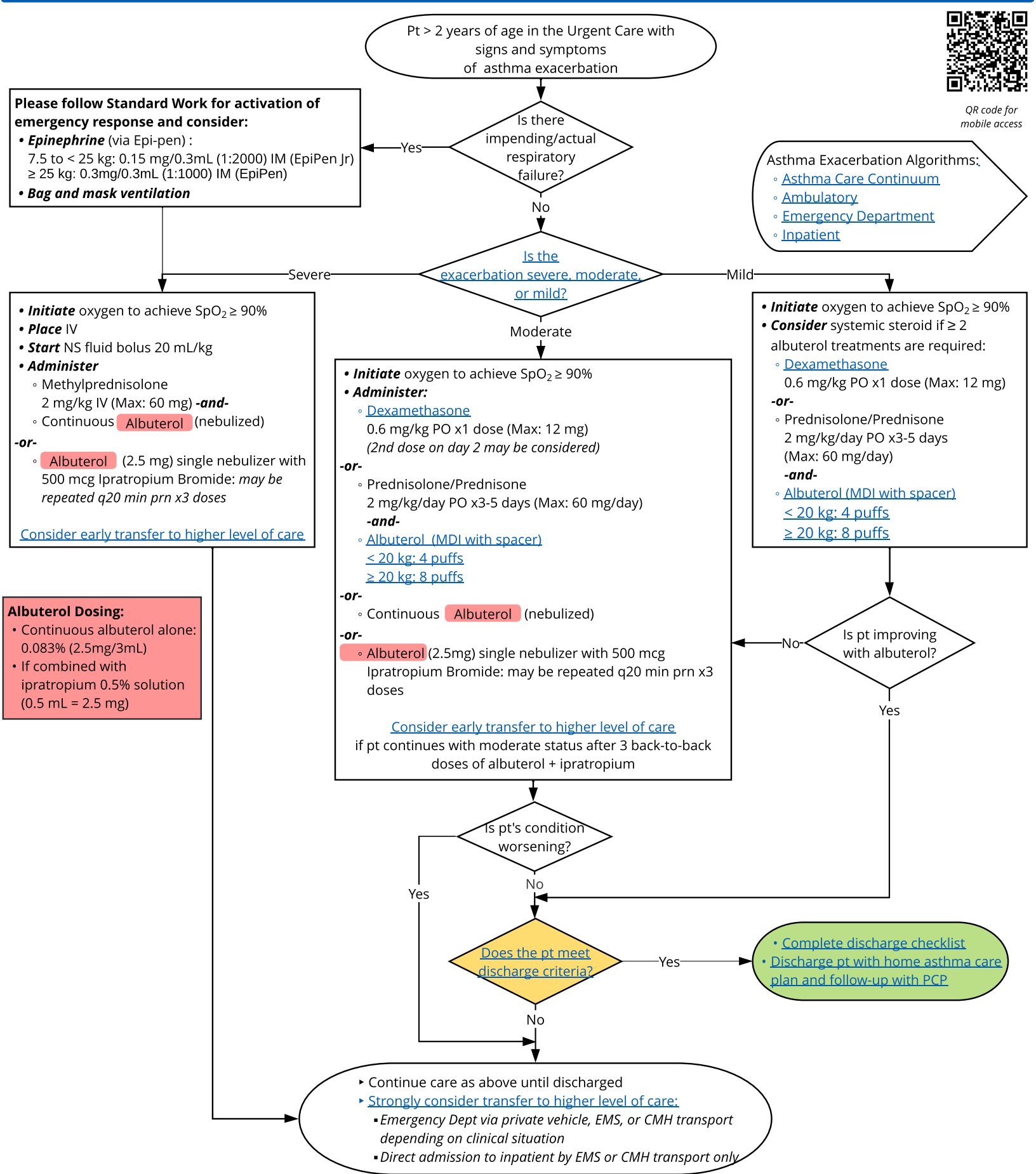
- Does not meet any of the above "Intensive Care Criteria", **-and-**
- Spaced to intermittent albuterol (q2 hrs or less frequent)

**Abbreviations**

MDI = Metered Dose Inhaler  
PeP = Positive Expiratory Pressure

RT = Respiratory Therapy  
SpO<sub>2</sub> = Saturation of Peripheral Oxygen







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**In addition to severe therapies below, consider:**

- **Epinephrine:**
  - For Adele Hall ED  
1 mg/mL solution, 0.01 mg/kg IM
  - For CM Kansas ED  
7.5 to < 25 kg: 0.15 mg/0.3mL (1:2000) IM (EpiPen Jr)  
≥ 25 kg: 0.3mg/0.3mL (1:1000) IM (EpiPen)
- **Continuous** positive airway pressure
- **Non-invasive** positive airway pressure **-or-** endotracheal intubation

Pt > 2 years of age in the Emergency Department with signs and symptoms of asthma exacerbation

Is there impending/actual respiratory failure?

Asthma Exacerbation Algorithms:

- [Asthma Care Continuum](#)
- [Ambulatory](#)
- [Urgent Care](#)
- [Inpatient](#)

Is the exacerbation severe, moderate, or mild?

Severe

Mild

Moderate

- **Initiate** oxygen to achieve SpO<sub>2</sub> ≥ 90%
- **Place** IV
- **Start** NS fluid bolus 20 mL/kg
- **Administer**
  - Methylprednisolone  
2 mg/kg IV q24 hrs **-or-** divided q12 hrs (Max: 60 mg/day) **-and-**
  - Continuous **Albuterol** (nebulized)  
< 20 kg: 10mg/hr  
≥ 20 kg: 15 mg/hr
- with-**
  - Ipratropium bromide (nebulized)  
1500 mcg x1 (**-with-** continuous **Albuterol**)
- **Provide** (If not already administered):
  - Magnesium sulfate  
50 mg/kg IV (Max dose: 2 grams)

[Review indications for transfer to intensive care](#)

- **Initiate** oxygen to achieve SpO<sub>2</sub> ≥ 90%
- **Administer:**
  - [Dexamethasone](#)  
0.6 mg/kg PO x1 dose (Max: 12 mg)  
(2nd dose on day 2 may be considered)
- or-**
  - Prednisolone/Prednisone  
2 mg/kg/day PO x3-5 days (Max: 60 mg/day)
- and-**
  - [Albuterol \(MDI with spacer\)](#)  
< 20 kg: 4 puffs  
≥ 20 kg: 8 puffs
- or-**
  - Continuous **Albuterol** (nebulized)  
< 20 kg: 10 mg/hr  
≥ 20 kg: 15 mg/hr
- **Consider** (if not already administered)
  - Magnesium sulfate  
50 mg/kg IV (Max dose: 2 grams)
  - Ipratropium bromide (nebulized)  
1500 mcg x1 **-with-** continuous **Albuterol**

- **Initiate** oxygen to achieve SpO<sub>2</sub> ≥ 90%
- **Consider** systemic steroid if ≥ 2 albuterol treatments are required:
  - [Dexamethasone](#)  
0.6 mg/kg PO x1 dose (Max: 12 mg)
- or-**
  - Prednisolone/Prednisone  
2 mg/kg/day PO x3-5 days (Max: 60 mg/day)
- and-**
  - [Albuterol \(MDI with spacer\)](#)  
< 20 kg: 4 puffs  
≥ 20 kg: 8 puffs

**Albuterol Dosing:**

- Continuous albuterol alone:  
0.083% (2.5mg/3mL)
- If combined with ipratropium 0.5% solution (0.5 mL = 2.5 mg)

Admit to intensive care

Yes

Is intensive care required?

No

[Inpatient algorithm](#)

- **Admit** to Gen Peds or PICU
- **Continue** ED care and reassessments until transfer  
Greater than 4 hrs continuous albuterol should prompt discussion with Gen Peds team and/or PICU about appropriate unit of admission

[Review indications for transfer to intensive care](#)

Assess response to treatment

Does the pt meet discharge criteria?

Yes

[Discharge with home asthma care and PCP follow-up](#)

No

- **Continue** care as above
- **Recommend** (if not already administered):
  - Corticosteroid (oral, IV, or IM)
  - Ipratropium bromide (nebulized)
  - Magnesium sulfate IV

Reassess response to treatment

Does the pt meet discharge criteria?

Yes

No



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access

**Albuterol Dosing:**

- Continuous albuterol alone:  
0.083% (2.5mg/3mL)
- If combined with ipratropium  
0.5% solution (0.5 mL = 2.5 mg)

Patient > 2 yrs of age admitted to the General  
Pediatric service for asthma exacerbation

Is the  
exacerbation severe, moderate,  
or mild?

Severe

Mild

Moderate

- **Oxygen** to achieve SpO<sub>2</sub> ≥ 90%
- **Methylprednisolone IV**  
2 mg/kg/day q24 OR divided q12  
Max: 60 mg/day
- Continuous **Albuterol** (nebulized)  
< 20 kg: 10 mg/hr  
≥ 20 kg: 15 mg/hr

If not already administered:

- **Magnesium sulfate IV**  
50 mg/kg (Max: 2 grams)
- **Ipratropium bromide** (nebulized)  
1500 mcg x1 with continuous **Albuterol**

[Review indications for transfer to intensive care](#)

- **Initiate** oxygen to achieve SpO<sub>2</sub> ≥ 90%
- **Administer:**
  - [Dexamethasone](#)  
0.6 mg/kg PO x1 dose (Max: 12 mg)  
(2nd dose on day 2 may be considered)
- or-
- Prednisolone/Prednisone  
2 mg/kg/day PO x3-5 days (Max: 60 mg/day)
- and-
- [Albuterol \(MDI with spacer\)](#)  
< 20 kg: 4 puffs  
≥ 20 kg: 8 puffs
- or-
- Continuous **Albuterol** (nebulized)  
< 20 kg: 10 mg/hr  
≥ 20 kg: 15 mg/hr

- **Consider** (if not already administered)
  - Magnesium sulfate  
50 mg/kg IV (Max dose: 2 grams)

- **Initiate** oxygen to achieve SpO<sub>2</sub> ≥ 90%
- **Consider** systemic steroid if ≥ 2 albuterol treatments are required:
  - [Dexamethasone](#)  
0.6 mg/kg PO x1 dose (Max: 12 mg)
- or-
- Prednisolone/Prednisone  
2 mg/kg/day PO x3-5 days (Max: 60 mg/day)
- and-
- [Albuterol \(MDI with spacer\)](#)  
< 20 kg: 4 puffs  
≥ 20 kg: 8 puffs

- Providers, nurses, and RT will continue to evaluate and communicate with one another to:
  - Discuss patient care goals -and-
  - Any deviations from the expected course of illness.
- In general, RT will space albuterol according to Respiratory Care Plan.

If patient is unable to tolerate nebulized medications via face mask due to behavioral discomfort with interface, albuterol may be nebulized through high flow nasal cannula at flows ≤ 0.25 L/kg/min with max of 10L/min.

Severe

Moderate

Mild

Patient's severity/phase will change throughout their hospitalization

**Albuterol frequency: Continuous**

- Albuterol dose: See above
- RT assessment: every 30 min for the first hr and q1 hr after

**Albuterol frequency: q2 - 3 hr**

- [Albuterol dose:](#) < 20 kg: 4 puffs  
≥ 20 kg: 8 puffs
- **Consider:** Incentive Spirometry, PeP  
RT assessment: every other treatment

**Albuterol frequency: q4 hr**

- [Albuterol dose:](#) < 20 kg: 4 puffs  
≥ 20 kg: 8 puffs
- **Consider:** Incentive Spirometry, PeP  
RT assessment: every other treatment

Create/Adjust Asthma Action Plan  
[Asthma Education](#)  
[Consider additional consultations](#)

[Discharge with home asthma care plan and follow-up with PCP](#)

Does  
the patient meet  
discharge  
criteria?

Yes

No

Asthma Exacerbation Algorithms:

- [Asthma Care Continuum](#)
- [Ambulatory](#)
- [Urgent Care](#)
- [Emergency Department](#)