**Rapid Recognition of Anaphylaxis**

**Definition of anaphylaxis:**
1) Severe respiratory symptoms **OR** 2) Severe cardiovascular symptoms **OR** 3) ≥1 symptom in ≥2 organ systems that occur suddenly post allergen exposure

Excludes Suspected Blood Transfusion Reactions. Refer to Clinical Policy 7-00 Action for Suspected Transfusion Reaction

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### Skin/Mucosal
- Hives
- Rash
- Tearing or red eyes
- Swelling (e.g. lips/tongue/eyes)

### Respiratory
- Stridor
- Cough
- Wheeze
- Dyspnea
- Chest tightness

### Cardiovascular
- Hypotension
- Arrhythmia
- Tachy/bradycardia
- Syncope

### Gastrointestinal
- Nausea
- Abdominal pain
- Vomiting
- Diarrhea
- Swallowing problem

### CNS
- Headache
- Dizziness
- Seizures
- Confusion
- Altered mental status

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### ABCs

Immediately stop exposure to suspected medication or agent

- Manage airway, breathing, and circulation
- Apply O2 via non-rebreather and keep sats ≥94%
- Place patient in supine position, unless patient in respiratory distress

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### Call for Assistance

**In hospital:**
- Notify Provider
- Emergent: CODE BLUE 5-6161
- Urgent: RAPID RESPONSE TEAM 5-TEAM (5-8326)

**Outpatient/Urgent Care:**
- Alert on-call Provider if not present
- Emergent: 9-911
- Urgent; or, cannot observe for 4+ hours: Transfer Center

**ED:**
- Triage acuity blue (emergent) or red (urgent)

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### Rescue Medications-Injectable epi available in code cart, override in omnicell, or medication room

#### Failure to respond to first dose of epi:
- Administer another dose of IM epi (can be administered every 5-15 minutes for rapid progression of symptoms OR failure to respond)
- Obtain IV/IO access
- If hypotensive administer isotonic IV fluid, 20mL/kg, rapidly, over 5-10 minutes
- If wheezing: Albuterol (see page 2)

#### PALS criteria for hypotension based on Systolic Blood Pressure (SBP):

<table>
<thead>
<tr>
<th>AGE</th>
<th>SBP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonates</td>
<td>&lt;60</td>
</tr>
<tr>
<td>(0-28 days)</td>
<td></td>
</tr>
<tr>
<td>Infants</td>
<td>&lt;70</td>
</tr>
<tr>
<td>(1-12 months)</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>&lt;70 + [Age in yrs x2]</td>
</tr>
<tr>
<td>(1-10 years)</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>&lt;90</td>
</tr>
<tr>
<td>(&gt;10 years)</td>
<td></td>
</tr>
</tbody>
</table>

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### Additional Medication/Interventions

**See page 2 for dosing**

If upper airway obstruction/stridor:
- Consider racemic EPINEPHrine

**H1 blocker** recommended for cutaneous symptoms such as urticaria and pruritus. If using, liquid formulation preferred to optimize absorption:

Give any one of the following:
- Cetirizine (Zyrtec) PO preferred over DiphenhydrAMINE (Benadryl) if readily available, otherwise Benadryl PO
- DiphenhydrAMINE (Benadryl) PO/IV/IM (IV only if unable to take PO)
- HydroXYzine IM/PO
- Loratidine PO

**H2 Blockers** are not routinely indicated – may consider if GI symptoms

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### Observation/Admission Criteria

#### Observation Period
- If NO hypotension, observe for a minimum of 4 hours prior to discharge
- Patients with resolved respiratory compromise and/or hypotension, observe 6-8 hours prior to discharge

**Admission Criteria**
- Required more than 1 dose of epi
- Required a fluid bolus
- Persistent symptoms >4 hours
- Worsening symptoms
- History of severe biphasic reaction
- History of severe asthma

**Consider PICU Admission**
- Hemodynamic instability
- Respiratory failure
- Continued/recurrent airway compromise
- Requiring any of the following:
  - >40mL/kg volume
  - 2 doses of IM epi
  - >1 continuous nebulizer

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### Discharge Planning

**Prior to Discharge**
- Consult allergy in inpatients who have difficult to treat reactions (such as biphasic or prolonged reactions) or high risk asthma
- Consider Case Management consult to assist with filling prescription for epinephrine autoinjectors

**Education and Prescriptions**

1. Prescribe epinephrine autoinjector
2. Prescribe other meds as indicated (see page 2)
3. Follow up with Allergist in 3-4 weeks
4. Epinephrine autoinjector video

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**Developed through the efforts of Children’s Healthcare of Atlanta and physicians on Children’s medical staff in the interest of advancing pediatric healthcare. This is a general guideline and does not represent a professional care standard governing providers’ obligation to patients. Ultimately the patient’s physician must determine the most appropriate care.**

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# Clinical Practice Guideline for Management of Anaphylaxis

**Emergency Department, Urgent Care, Inpatient, Ambulatory**

## Anaphylaxis Management

<table>
<thead>
<tr>
<th>Medication</th>
<th>Standard mg/kg Dose</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antihistamines (H1 Blockers)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cetirizine (Zyrtec)</td>
<td>6-23 months old: 2.5mg PO</td>
<td>Q24H PRN cutaneous symptoms (urticaria, pruritis)</td>
</tr>
<tr>
<td></td>
<td>24 months-5 years old: 2.5-5mg PO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 years old: 5-10mg PO</td>
<td></td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>1mg/kg/dose PO/IV/IM Max dose 50mg</td>
<td>Q6H PRN cutaneous symptoms (urticaria, pruritis)</td>
</tr>
<tr>
<td>Hydroxyzine (Vistaril)</td>
<td>&lt;40kg: 0.5mg/kg/dose PO &gt;40kg: 25-50mg PO</td>
<td>Q6H PRN cutaneous symptoms (urticaria, pruritis)</td>
</tr>
<tr>
<td>Loratadine (Claritin)</td>
<td>2-6 years old: 5mg PO 6 years old: 10mg PO</td>
<td>Q24H PRN cutaneous symptoms (urticaria, pruritis)</td>
</tr>
</tbody>
</table>

**Additional Medications**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Standard mg/kg Dose</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albuterol</td>
<td>&lt;15kg: intermittent 2.5mg 15mg/hr 15kg: intermittent 5mg 15mg/hr</td>
<td>•Q4-6H for 24 hours; then, •Q4-6H PRN for cough/wheeze/difficulty in breathing</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>1mg/kg/dose PO Max dose: 60mg</td>
<td>If clinically indicated: •2-5 day course</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>0.6 mg/kg PO (Max dose 16 mg)</td>
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<tr>
<td></td>
<td>12 kg: 4 mg 15 kg: 8 mg 18 kg: 12 mg 21 kg: 16 mg</td>
<td></td>
</tr>
<tr>
<td>Methylprednisolone</td>
<td>2mg/kg/dose IV/IM Max dose: 125mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If IV, infuse over 10 minutes</td>
<td></td>
</tr>
<tr>
<td>Famotidine* (Pepto)</td>
<td>*IV 0.25mg/kg (max dose of 20mg)</td>
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<tr>
<td></td>
<td>*Tablet 0.5mg/kg (max dose of 40mg)</td>
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<tr>
<td></td>
<td>*Suspension 0.5mg/kg (max dose 40mg)</td>
<td></td>
</tr>
</tbody>
</table>

*No clear evidence of benefit from H2 blockers in immediate treatment of anaphylaxis or biphasic reactions.*  
*May use if GI symptoms*

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*DEVELOPED THROUGH THE EFFORTS OF CHILDREN’S HEALTHCARE OF ATLANTA AND PHYSICIANS ON CHILDREN’S MEDICAL STAFF IN THE INTEREST OF ADVANCING PEDIATRIC HEALTHCARE. THIS IS A GENERAL GUIDELINE AND DOES NOT REPRESENT A PROFESSIONAL CARE STANDARD GOVERNING PROVIDERS’ OBLIGATION TO PATIENTS. ULTIMATELY THE PATIENT’S PHYSICIAN MUST DETERMINE THE MOST APPROPRIATE CARE.*

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