**Rapid Recognition of Anaphylaxis**

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

<table>
<thead>
<tr>
<th>Skin/Mucosal</th>
<th>Respiratory</th>
<th>Cardiovascular</th>
<th>Gastrointestinal</th>
<th>CNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hives</td>
<td>• Stridor</td>
<td>• Hypotension</td>
<td>• Nausea</td>
<td>• Headache</td>
</tr>
<tr>
<td>• Flushing</td>
<td>• Cough</td>
<td>• Hoarseness</td>
<td>• Abdominal pain</td>
<td>• Dizziness</td>
</tr>
<tr>
<td>• Rash</td>
<td>• Wheeze</td>
<td>• Congestion</td>
<td>• Vomiting</td>
<td>• Confusion</td>
</tr>
<tr>
<td>• Itching</td>
<td>• Dyspnea</td>
<td>• Sneezing</td>
<td>• Diarrhea</td>
<td>• Seizures</td>
</tr>
<tr>
<td>• Tearing or red eyes</td>
<td>• Chest tightness</td>
<td></td>
<td>• Swallowing problem</td>
<td>• Altered mental status</td>
</tr>
<tr>
<td>• Swelling (e.g., lips/tongue/eyes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Immediatly 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

**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

**Administer IM EPINEPHrine**

Immediately into the anterolateral thigh

*Injectable Epinephrine available in code cart, as override in omnicell, or medication room Concentration 1mg/mL*

**Quick Dose epi IM:**

- Concentration 1mg/mL
- <10kg: 0.1mg = 0.1mL IM
- 10-30kg: 0.15mg = 0.15mL IM
- >30kg: 0.3mg = 0.3mL IM
### Rapid Recognition of Anaphylaxis

**Definition of anaphylaxis:**
- 1) Severe respiratory symptoms OR
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#### Skin/Mucosal
- Hives
- Rash
- Tearing or red eyes
- Swelling (e.g. lips/tongue/eyes)

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

#### Cardiovascular
- Hypoxia
- Hoarseness
- Congestion
- Sneezing

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

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

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

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

### Additional Medication/Interventions

**If upper airway obstruction/stridor**
- Consider racemic EPINEPHrine

**H1-Blocker Recommended**
- Liquid concentration preferred for all PO doses to increase absorption
- Choose from ONE of the following:
  - DiphenhydRAMINE PO/IV/IM
  - Cetirizine PO
  - HydrOXYzine IM/PO
  - Loratadine PO

**Steroid Treatment (optional):**
- PrednisLONE PO
- MethylPREDNISolone IV/IM

### Discharge Planning

**Prior to Discharge**
- Consider consulting allergy for inpatients who experience a biphasic reaction or are high-risk asthmatics
- 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 3)
3. Follow up with Allergist in 3-4 weeks
4. Epinephrine autoinjector video
5. Food and Allergy Action Plan

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**CLINICAL PRACTICE GUIDELINE FOR MANAGEMENT OF ANAPHYLAXIS**

**EMERGENCY DEPARTMENT, URGENT CARE, INPATIENT, AMBULATORY**

**Page 2 of 3**

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---

**CRITICAL RESCUE MEDICATIONS**

**Injectable epinephrine available in code cart, override in omnicell, or medication room**

**Concentration:** 1mg/mL

**Quick Dose epi IM:**
- <10kg: 0.1mg= 0.1mL IM
- 10-30kg: 0.15mg= 0.15mL IM
- >30kg: 0.3mg= 0.3mL IM

**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 3)

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

---

**Additional Medication/Interventions**

**See page 3 for dosing**

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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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### Medication Recommendations

<table>
<thead>
<tr>
<th>Medication</th>
<th>Standard mg/kg Dose</th>
<th>Recommended Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antihistamines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>1mg/kg/dose PO/IV/IM Max dose 50mg</td>
<td>Q6H PRN</td>
</tr>
<tr>
<td>Cetirizine (Zyrtec)</td>
<td>6-23 months old: 2.5mg PO 24 months-5 years old: 2.5-5mg PO &gt;6 years old: 5-10mg PO</td>
<td>Once daily PRN</td>
</tr>
<tr>
<td>Hydroxyzine (Vistaril)</td>
<td>&lt;40kg: 0.5mg/kg/dose PO &gt;40kg: 25-50mg PO</td>
<td>&lt;40kg: QID PRN &gt;40kg: Once daily PRN</td>
</tr>
<tr>
<td>Loratadine (Claritin)</td>
<td>2-6 years old: 5mg PO &gt;6 years old: 10mg PO</td>
<td>Once daily PRN</td>
</tr>
<tr>
<td><strong>Additional Medications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albuterol</td>
<td>&lt;15kg: Intermittent 2.5mg Continuous 7.5mg/hr &gt;15kg: Intermittent 5mg Continuous 15mg/hr</td>
<td>•Q4-6H for 24 hours; then, •Q4-6H PRN for cough/wheezing/difficulty in breathing</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>1mg/kg/dose PO Max dose: 60mg</td>
<td>If clinically indicated: •Weight-based PO daily •2-5 day course</td>
</tr>
<tr>
<td>Methylprednisolone</td>
<td>2mg/kg/dose IV/IM Max dose: 125mg</td>
<td>N/A</td>
</tr>
<tr>
<td>Famotidine* (Pepcid) (per provider discretion)</td>
<td>*IV 0.25mg/kg x1 (max dose of 20mg) *Tablet 0.5mg/kg (max dose of 40mg) *Suspension 0.5mg/kg (max dose 40mg)</td>
<td>*No clear evidence of benefit from H2 blockers in immediate treatment of anaphylaxis or biphasic reactions</td>
</tr>
</tbody>
</table>