Anaphylaxis/Allergic Reaction Administrative Guideline

History	Signs and Symptoms	Differential
• Onset and location • Insect sting or bite • Food or med allergy/exposure • Past history of reactions	• Dyspnea/hypoxia • Wheezing • Stridor • Difficulty swallowing • Oropharyngeal/tongue swelling • Shock/decreased perfusion • Urticaria • Abdominal pain/vomiting	• Urticaria (rash only) • Anaphylaxis (systemic) • Infection/sepsis • Angioedema • Airway obstruction • Asthma/COPD • CHF

Suspected allergic reaction or anaphylaxis

Anaphylaxis, multisystem reaction, or shock

B	Administer **epinephrine by autoinjector** or **by prepared kit** (if available) For children <30kg (8 years or younger) **administer 0.15 mg (1 mg/mL concentration)** IM or **EpiPen Jr.** For adults and children >30kg (9 years or older) **administer 0.3 mg (1 mg/mL concentration)** IM or **EpiPen** Administration should be upper lateral thigh May **repeat epinephrine** dose every 5-15 minutes
P	Administer **epinephrine 0.01 mg/kg (1 mg/mL concentration)** IM **(max dose 0.3 mg)** Administration should be upper lateral thigh May **repeat epinephrine** dose every 5-15 minutes

B	Administer **albuterol 2.5 mg** SVN for wheezing May repeat **albuterol** to max of 3 doses Consider administration of **ipratropium (Atrovent) 0.5 mg** nebulized with **albuterol** x 1 Administer **20 mL/kg NS/LR bolus** for hypotension
P	IV/IO access Cardiac Monitor, $EtCO_2$ if available Consider appropriate airway management adjuncts Assess for signs of shock (poor perfusion, decreased mental status)
P	Administer **20 mL/kg NS/LR bolus** for hypotension Administer **diphenhydramine 1 mg/kg** IV/IM **(max dose 50 mg)** Administer **methylprednisolone 2 mg/kg** IV/IM (**max dose 125 mg)**

After third dose of epinephrine, consider Shock/Hypotension and Crashing Patient AG

Localized allergic reaction

P	Administer **diphenhydramine 1 mg/kg** IV/IM/PO **(max dose 50 mg)**

Education/Pearls

An allergic reaction is a systemic response to an allergen, which may be food, drugs, or other substance. The response varies from mild (one organ system, such as skin) to severe, when the condition may become life-threatening. The presence of shock or airway compromise always indicates a severe response and can lead to cardiac arrest and airway compromise.

Anaphylaxis is defined as:

- Severe, acute onset AND one of the following:
  - Respiratory compromise (dyspnea, wheeze, stridor, hypoxemia)
  - Decreased BP (SBP<90)

OR

- A combination of 2 of the following:
  - Urticaria
  - Swollen tongue or lips
  - Nausea/Vomiting
  - Abdominal pain
  - Syncope
  - Incontinence

A non-anaphylactic allergic reaction is defined as ONE of the following:

- Localized symptoms
- Localized angioedema without airway or GI symptoms
- Urticaria alone

Medication administration:

- Epinephrine:
  - Increases heart rate and blood pressure and decreases airway edema/swelling and histamine release
  - Should be the first drug administered in acute anaphylaxis in moderate and severe symptoms, and its administration intramuscularly should not be delayed for IV or IO access.
  - Is most effective as an **intramuscular** injection in the thigh, which results in the fastest rise of blood concentration. Intramuscular or subcutaneous injections in the upper arm (deltoid) result in a much slower absorption and should not be used as a first choice
  - Is **less effective** when given as push-dose epinephrine dosing. Push-dose epinephrine is **not recommended** for the treatment of anaphylaxis.
  - Can be repeated every 5-15 minutes fore persisting signs of anaphylaxis.
- Fluids and pressors may be started to treat shock additionally.
- Diphenhydramine and steroids have no proven utility in moderate or severe anaphylaxis and may be given only after epinephrine. Diphenhydramine and steroids should NOT delay repeated epinephrine administration if needed.
- In moderate and severe anaphylaxis, diphenhydramine may decrease mental status. Caution with rate of administration.
- If a patient exhibits respiratory distress with wheezing, administer nebulized albuterol and consider administration of ipratroprium (Atrovent).

Any patient with concern for anaphylaxis or who has received epinephrine IM should be transported to the ED, even if symptoms have resolved.