



Emergency Medical Services Agency Lessons Learned

To all Prehospital Providers

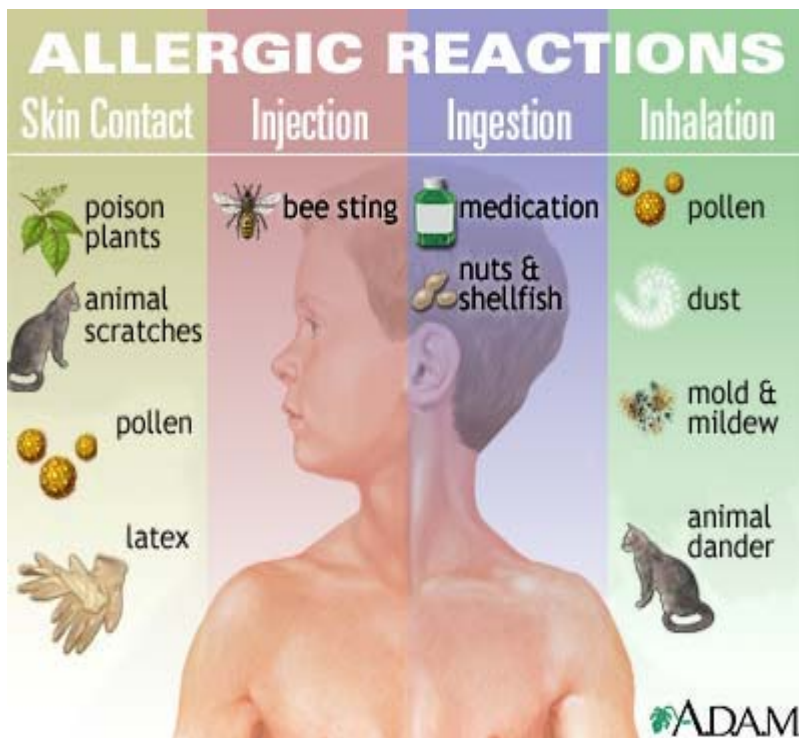
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The following information is related to EMS Agency review of Prehospital care. The lessons learned from these reviews are applicable to all paramedic providers. Please review this important information and incorporate it into your practice. **THIS INFORMATION IS TO BE INCORPORATED IN THE PARAMEDIC UPDATES PLANNED BY EACH AGENCY TO REVIEW THE PROTOCOL CHANGES FOR 2007-2008.**

Allergic Reactions and Anaphylaxis

This discussion will delineate the differences between allergic reactions and anaphylaxis. Anaphylaxis is a relatively rare occurrence and can often be confused with a severe allergic reaction. It is important to understand the differences so as to render appropriate care for the patient who is undergoing these health issues.

Allergic reactions are sensitivities to a specific substance (allergen) that are contacted through the skin, inhaled into the lungs, swallowed, or injected. While first-time exposure may only produce a mild reaction, repeated exposures may lead to more serious reactions. Once a person is sensitized (has had a previous sensitivity reaction), even a very limited exposure to a very small amount of allergen can trigger a severe reaction



Signs and symptoms of an **allergic reaction** may include:

Mild Allergic Reactions	Moderate to Severe Allergic Reactions
Rashes	Swelling of the face, eyes, or tongue
Hives (especially over the neck and face)	Difficulty swallowing
Itching	Wheezing
Nasal congestion	Fear or feeling of apprehension or anxiety
Watery, red eyes	Abdominal cramps or abdominal pain
	Nausea and vomiting
	Weakness
	Dizziness or light-headedness
	Chest discomfort or tightness
	Difficulty breathing

Anaphylaxis is a life-threatening type of allergic reaction. **Anaphylaxis** is an acute systemic (multi-system) and severe Type I Hypersensitivity allergic reaction in humans and other mammals. Anaphylaxis is a **sudden** and **severe** allergic reaction that occurs within minutes of exposure. Immediate medical attention is needed for this condition. It can get worse very, very fast and lead to death within 15 minutes if treatment is not received. An estimated 1.24% to 16.8% of the population of the United States is considered "at risk" for having an anaphylactic reaction if they are exposed to one or more allergens, especially penicillin and insect stings.

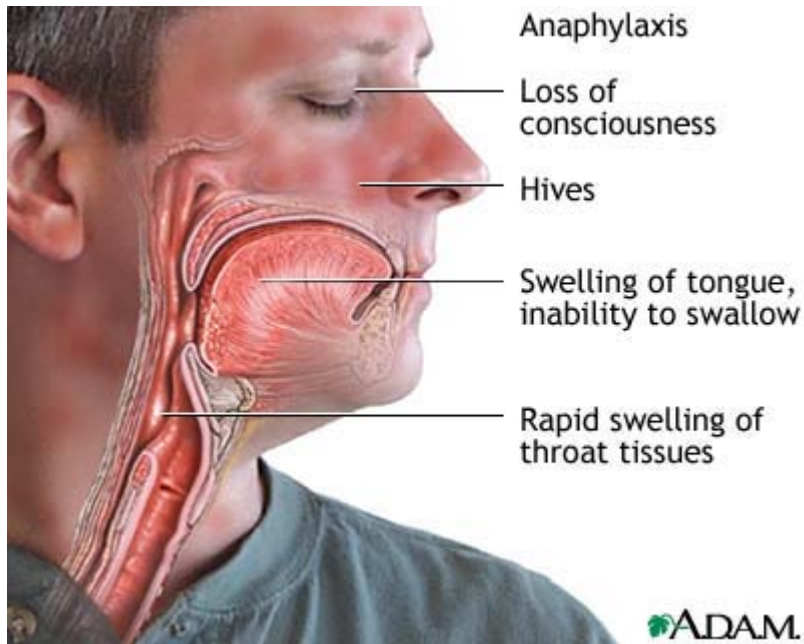
Tissues in different parts of the body release histamine and other substances. This causes constriction of the airways, resulting in wheezing, difficulty breathing, and gastrointestinal symptoms such as abdominal pain, cramps, vomiting, and diarrhea.

Histamine causes the blood vessels to dilate (which lowers blood pressure) and fluid to leak from the bloodstream into the tissues (which lowers the blood volume). These effects result in shock. Fluid can leak into the alveoli of the lungs, causing pulmonary edema.

Hives and angio-edema (hives on the lips, eyelids, throat, and/or tongue) often occur. Angio-edema may be severe enough to block the airway. Prolonged anaphylaxis can cause heart arrhythmias.

Some drugs (polymyxin, morphine, x-ray dye, and others) may cause an anaphylactoid reaction (anaphylactic-like reaction) on the first exposure. This is usually due to a toxic reaction, rather than the immune system mechanism that occurs with "true" anaphylaxis. The symptoms, risk for complications without treatment, and treatment are the same, however, for both types of reactions.

Anaphylaxis can occur in response to any allergen. Common causes include insect bites/stings, horse serum (used in some vaccines), food allergies, and drug allergies. Pollens and other inhaled allergens rarely cause anaphylaxis. Some people have an anaphylactic reaction with no identifiable cause.

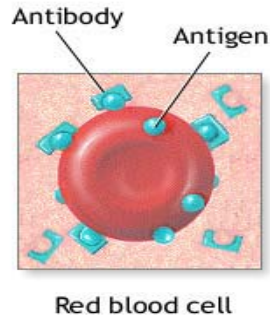


Signs and symptoms of **anaphylaxis** may include:

Hives and swelling of the eyes or face
Cyanosis
Pallor
Angio-edema (severe swelling) in the throat may be severe enough to block the airway.
Wheezing or rales
Rapid pulse
Low blood pressure
Weakness
Heart arrhythmias
Altered mental state

Causation:

Antigens are large molecules (usually proteins) on the surface of cells, viruses, fungi, bacteria, and some non-living substances such as toxins, chemicals, drugs, and foreign particles. The immune system recognizes antigens and produces antibodies that destroy substances containing antigens.



An antibody is a protein produced by the immune system in response to the presence of an antigen

ADAM.

Allergic Reaction/Anaphylaxis (A12)

BLS Treatment

- Routine Medical Care – Adult (see S04)
 - Treat for signs and symptoms of shock, if necessary (see Shock A10)

ALS Treatment

- Routine Medical Care – Adult (see S04)
- Rash and/or itching
 - **Diphenhydramine** 50 mg IVP/IM
- Dyspnea
 - **Albuterol** 2.5 – 5 mg via HHN or other FDA approved medication delivery device q 15 min or continuously prn
 - If severe distress and tidal volume decreased, administer Albuterol via in-line BVM or ET
 - Discontinue if HR > 160 bpm, chest pain, dysrhythmias, or acute onset of new symptoms
- Shock
 - Consider 250 ml **Normal Saline** bolus IV. May repeat one time.
 - **Epinephrine**: Use one injector. Use anterior lateral thigh. (For administration technique see Nerve Agent antidote administration WMD-01) may repeat one time.

Base Hospital Physician Order

- Stridor, severe shock and impending respiratory arrest
- **Epinephrine (1:10,000) 0.1 mg** very slow IVP/IO, only after direct order from the base hospital physician. Draw up the medication from the preload Epinephrine syringe.
- Using a 3 ml syringe, withdraw 1 mls of Epinephrine 1:10,000 from the preload Epinephrine Syringe.
- Additional doses may be required. Contact the base hospital.

<http://www.nlm.nih.gov/medlineplus>.