



Life Threatening Allergies in the School Setting: Annual Review

created by:

Joan E. Schleeweis-Connor, RN, BSN, MS

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Objectives

Through this session, it is intended that the learner shall:

- Develop an understanding of allergies
- Know the difference between “Allergy Safe” and “Allergy Aware/Sensitive” schools
 - Develop an understanding of anaphylactic process:
 - signs and symptoms
 - treatment
 - Learn how to administer an EpiPen
 - Learn common EpiPen mistakes
- Demonstrate EpiPen administration to school nurse

Allergy Information

- One of the most dangerous times for an anaphylactic reaction is at the beginning of each school year.
- When possible, plans should be developed before child starts school.
- Many school-age children with life-threatening allergies have some experience at avoiding the allergy-causing agent but most still require supervision and help.

Allergy Info cont...

- Food allergy is a growing food safety concern in the United States and creates a challenge for our schools.
- Approximately 6 percent of school-aged children have a significant food allergy and may be at risk for anaphylaxis, a potentially life-threatening allergic reaction.
- Currently, there are no medications that cure food allergy.

Allergy Info cont...

- **Strict avoidance of the allergen is the only way to prevent allergic reactions. Deaths have occurred in schools because of delays in recognizing symptoms and not responding promptly or effectively.**
- **Plans that focus on allergy education, awareness, avoidance and immediate treatment of allergic reactions are critical to saving lives.**

Allergy Sensitive Schools

- Impossible to ensure "allergy free" schools.
 - Imposing a ban creates a false sense of security and creates serious liability issues for the facility.
- Current approach is to promote "Allergy Aware/Sensitive" settings that reduce the chance of contact with life-threatening allergens.

Mass DPH

- The Massachusetts Department of Public Health Regulations provide for the administration of Epi-Pens by non-medical personnel who have been trained in the administration and documentation of Epi-Pen delivery.

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Allergies

- While this document focuses on life-threatening food allergies, treatment of serious allergic reactions and anaphylaxis is the same whether caused by food, insect sting, latex or is exercise induced.



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Eight That Aren't Great

- *Although eight foods are responsible for most reactions, it is important to remember that ANY food can cause a serious allergic reaction.*

- Peanut
- Tree nut (walnut, cashew, pecan, hazelnut, almond)
- Milk
- Egg
- Fish
- Shellfish
- Soy
- Wheat



What Is Anaphylaxis?

- A potentially life-threatening medical condition occurring in allergic individuals after exposure to an allergen.

Anaphylactic Process

- Immune system identifies an allergen/protein.
- Immune system starts chain of inflammatory reactions in the tissues of the skin, the respiratory system, the gastrointestinal tract, and the cardiovascular system.
- When the inflammatory symptoms are widespread and systemic, the reaction is termed “anaphylaxis.”

Symptoms By System

ANAPHYLAXIS

SKIN:
Swelling
Hives
Rash
Itching

RESPIRATORY:
Runny Nose
Wheezing
Short of breath
Throat tight
Can't swallow
Voice change

GASTRO-
INTESTINAL:
Itchy Tongue
Itchy throat
Vomiting
Abdominal pain
Diarrhea

CARDIO-
VASCULAR:
Irreg. heartbeat
Flushed
Pale skin
Blue lips/mouth
Fainting
Dizzy

OTHER:
Sense of
impending
Doom
Anxiety
Itchy, watery, red
eyes

Acronym: "B.I.N.D."

- *POSSIBLE SIGNS OF A LIFE-THREATENING ALLERGIC REACTION*

- *Is the child in a B.I.N.D.?*

- **B** = breathing is difficult, throat or chest is tight.
- **I** = itchy lips, hives, swelling.
- **N** = nausea, vomiting.
- **D** = dizzy, unsteady, confused.

Recognizing Symptoms

- Anaphylaxis may occur in the absence of any skin symptoms such as itching and hives.
- Fatal anaphylaxis is more common in children who present with respiratory symptoms, or GI symptoms such as abdominal pain, nausea or vomiting.

Severity of Symptoms

- All symptoms can become life-threatening. Severity of symptoms can quickly change.

Biphasic Reaction

- In up to 30 percent of anaphylactic reactions, the initial symptoms may be followed by a second wave of symptoms two to four hours later and possibly longer.
- This combination of an early phase of symptoms followed by a late phase of symptoms is defined as *biphasic reaction*.

Key Steps in Anaphylaxis Management

- Recognize student
- Know symptoms to look for
- Administer EpiPen quickly
- Transport to emergency department **THEN** call parents.

In Their Own Words...

- Children have unique ways of describing their experiences and perceptions, including allergic reactions. Precious time is lost when adults do not immediately recognize that a reaction is occurring or don't understand what the children might be telling them.

In Their Own Words...

- In addition, know that sometimes children, especially very young ones, will put their hands in their mouths, or pull or scratch at their tongues, in response to a reaction. Children's voices may change (i.e., become hoarse or squeaky), and they may slur their words.

In Their Own Words...

- Some examples of kids words to describe their symptoms:
 - This food's too spicy.
 - My tongue is hot (or burning).
 - It feels like something's poking my tongue.
 - My tongue (or mouth) is tingling (or burning).
 - My tongue (or mouth) itches.
 - It (my tongue) feels like there is hair on it.
 - My mouth feels funny.
 - There's a frog in my throat.
 - There's something stuck in my throat.
 - My tongue feels full (or heavy).
 - My lips feel tight.
 - It feels like there are bugs in there (to describe itchy ears).
 - It [my throat] feels thick.
 - It feels like a bump is on the back of my tongue [throat].

Treatment

- Symptoms clearly indicating need for epinephrine:
 - rapidly developing hives
 - difficulty breathing or wheezing
 - swelling of the tongue or face
- Always err on the side of caution - if in doubt, give epinephrine!

Epinephrine

- An injectable medication that is the treatment of choice for anaphylactic reactions.
- Works quickly to reverse symptoms.
 - There are no contraindications to the use of epinephrine for a potentially life-threatening allergic reaction.

Epinephrine cont...

- Constricts blood vessels
- Relaxes smooth muscles in lungs to improve breathing
 - Stimulates heart beat
- Reverses hives and swelling
- Effects last 10-15 minutes

EpiPen

- Disposable drug delivery system for epinephrine.
- Spring-activated, concealed needle.
- Designed for self-administration in acute emergencies.
- Dose based on body weight.



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EpiPen cont...

- The parent provides, (EpiPen) properly labeled, to the school, for the pupil.
- The school nurse/athletic trainer may have a stock/school supplied EpiPen.

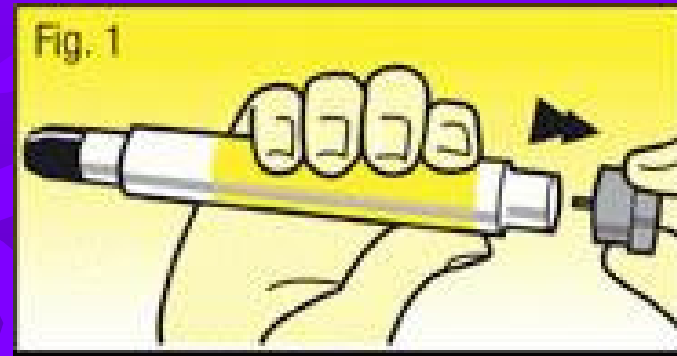
Anaphylaxis and EpiPen Training

Awareness

- Training is offered to everyone in the building
- Includes physical signs to be aware of and how to administer an EpiPen
- This is not delegation. It is not student specific.

EpiPen: Directions for Use

- Remove the *grey cap* from the fatter end of the device.
- **NB: This "arms the unit" ready for use**
- *Hold* the EpiPen, about 6" from outer thigh, in your fist with clenched fingers wrapped around it. *Black tip* pointing towards outer thigh.



Directions for Use cont...



- “Swing and jab” the *black tip* against the outer thigh until a loud “click” is heard. This means that the device has been activated.
- Hold in place for 10-15 seconds (count “1 elephant, 2 elephants, 10 elephants etc”) while the adrenaline is injected under pressure.
- **NB: GO through clothing if necessary.**

Directions cont...

- Massage the injection area for 10 seconds
- **DISPOSE** of the used EpiPen carefully into a sharps container, or hand to ambulance officers when they arrive.
- Be sure to inform the EMTs as to the time of EpiPen administration.

EpiPen Administration

- The following link takes you to the EpiPen site where you will see a short video on EpiPen administration. Please be patient while it downloads.
- <http://www.epipen.com/howtouse.aspx>

EpiPen Don'ts

- *DON'T.....*
- Use EpiPen® to practice emergency administration
- Remove grey safety cap until ready to use EpiPen®
- Place fingers over the black tip
- Attempt to inject into vein or buttocks
- Inject into extremities, as adrenaline causes local vasoconstriction
- Leave patient until paramedics arrive.

EpiPen Mistakes

- The black tip contains the needle and needs to be placed against the mid-thigh.
- *Holding the wrong end and injecting the thumb (blue line) is painful and not very effective.*

EpiPen Mistakes cont...

- Unless the grey cap is removed (blue line), the EpiPen will NOT work, no matter how hard you push ...

EpiPen Mistakes cont...

- The patient is pressing the white end very hard (blue line), assuming there is a "button" at the white end. There is not!
- *Unless pressure is exerted at the black end, the EpiPen will not work. By all means rest the thumb on the white end, but you must exert pressure on the black tip into the thigh as well.*

Self Carry/Self Administer

1. Health Care Provider Order
2. Parent Permission
3. Student Agreement
4. School Nurse Assessment

Individual Health Plan

- Required by law for all students when the parent and prescribing medical professional inform the school in writing that the student may possess the epinephrine.
- Plan must be written 'at the start of each school year, or at the time a student enrolls in school, whichever is first.'

Summary

- Students must have access to EpiPens during the instructional day.
- Staff must be trained to recognize signs and symptoms and provide care.
 - Students must have an IHP and ECP.
- Communication and information sharing between parents and care providers is critical.

In Closing...

- We can view an anaphylactic attack not just as a single dramatic event but as an avalanche in a series of allergic calamities that stretch out over time.
- It takes only 1 to 2 minutes for a mild allergic reaction to escalate to anaphylaxis.
 - **Be Aware...Be Alert!**

References

- American Academy of Allergy, Asthma and Immunology, *Anaphylaxis in Schools and Other Child-Care Settings*, available at http://www.aaaai.org/media/resources/academy_statements/position_statements/ps34.asp
- *Managing Life Threatening Food Allergies in Schools*, 2002, Massachusetts Department of Education, available at <http://www.doe.mass.edu/cnp/news02/allergy.pdf>
- *School Guidelines for Managing Students with Food Allergies*, available at <http://www.foodallergy.org/school.html>
- National Association of School Nurses (Issue Brief), *School Nurse Role in Education, School Meals Program*, available at <http://www.nasn.org/briefs/2003briefmeal.htm>