Management of ANAPHYLAXIS in the School Setting

Updated September 2010
What is an Allergy?

• Allergies occur when the immune system becomes unusually sensitive and over reacts to common substance that are normally harmless.

• An allergy should be diagnosed by an physician (often by an allergist, a doctor who specializes in problems of the immune system).
Most Common Causes of Allergies

• **Foods:** peanuts, tree nuts, eggs, milk, fish, seafood, grains (sesame, soy and wheat), fruit

• **Food additives** and preservatives

• **Medications** (antibiotics, Aspirin, vaccines)

• **Insect stings** & bites (bees, wasps, fire ants)

• **Latex** (gloves, condoms, medical devices)
What is Anaphylaxis

• Occurs when a person is **exposed** to an allergen causing severe, **life-threatening** allergic response

• Reactions can occur within seconds of exposure to an allergen, or be delayed for 2-3 hours

• Approximately 1-2% of Canadians live with the risk of an anaphylactic reaction

• More than 50% of Canadians know someone who is at risk
Why is this Life-Threatening?

- Causes airway obstruction and lack of oxygen to the brain
- Increases the risk of SHOCK, which leads to widespread tissue damage, organ failure and eventually death
Prevention = Having a Plan

• Familiarize yourself with the students in your school/class who have medical conditions and allergies
• Note all students who require a single dose auto-injector and know where is stored for each student. Auto-injectors should be immediately available
• Review emergency care plans for individual students
• Recognize allergy sources and triggers
• Know when and how to give an auto-injector
What are the symptoms?

Symptoms of a severe allergic reaction, or anaphylaxis, can vary and include any of the following:

- **Skin**: hives, swelling (including throat, tongue, lips or eyes), itching, warmth, redness, rash, pale skin or blue colour;
- **Breathing**: wheezing, trouble breathing, cough, change of voice, throat tightness or chest tightness;
- **Stomach**: vomiting, nausea, abdominal pain or diarrhea;
- **Other**: weak pulse, passing out, feeling faint, trouble swallowing, runny nose and itchy watery eyes, sneezing, anxiety or headache.

Symptoms can occur within minutes of eating or being exposed to the allergen, but they can occur up to two hours later. It is less common for symptoms to occur many hours later.

BC HealthFile #100, May 2007
Mild or Early Anaphylaxis

- Flushing of the skin
- Hives (anywhere on the body)
- A feeling that something terrible is happening
- Itching of the lips or mouth
- Nasal congestion
- Sneezing
- Tearing
- Coughing
Mild or Early Anaphylaxis

Hives and Swelling of the Face

Before giving Epinephrine

After giving Epinephrine
Moderate or Severe Anaphylaxis

- Swelling in the throat or mouth
- Difficulty in swallowing or speaking
  - e.g., voice changes
- Tightness of the chest
- Wheezing
- Stomach pain, nausea and vomiting
- Sudden feeling of weakness (drop in blood pressure)
- Dizziness
- Loss of consciousness
Moderate or Severe Anaphylaxis

Swollen lips and face; hives present

www.sovereign-publications.com/.../ANAPHYL.jpg
Moderate or Severe Anaphylaxis

Normal appearance

Severe allergic reaction (anaphylaxis)

Photo credit: Carita Övelius
Anaphylaxis: What should I do?

- Inject single-dose auto-injector into the muscle of the outer thigh
- Call 911 – tell the operator that the person is having an anaphylactic reaction
- Notify the parent/Guardian
- Have the person lie down, unless they are throwing up or having trouble breathing
- Do not leave the person alone

The person should always be taken to the hospital by an ambulance following a severe allergic reaction
The most important step in the management of anaphylaxis is the administration of epinephrine (aka adrenalin)
Epinephrine/Adrenalin

- **First-line** treatment for anaphylaxis
- Temporarily stops the allergic reaction so that the person can get to the hospital
- It can save a person’s life
- Must be available at all times
- Must be given as soon as possible after the symptoms start
Auto-injectors

There are two types of auto-injectors:

• EpiPen®

• Twinject®
What is an EpiPen®?

Old style may still see in schools

Labeled orange lid cover contrast with blue safety release for orientation

Single dose epinephrine

Source: www.epipen.ca
Using the EpiPen® Auto-Injector (Old Style)

1. Remove the device from the plastic protective container
2. Remove the GREY cap from the device
3. Press the BLACK tip to thigh until a loud “click” is heard
4. Hold in place for 10-15 seconds
Using the EpiPen® Auto-Injector (old Style)

4. Remove the pen from the thigh
5. The needle can now be seen, place the auto-injector back in protective case
6. Apply pressure to injection site with a tissue or bandage if there is bleeding
7. Follow standard precautions for your safety (wearing gloves, being careful when handling exposed auto-injector needle)
How to use EpiPen® and EpiPen® Jr Auto-injectors.

Remove EpiPen® Auto-injector from carrier tube

1. Hold firmly with orange tip pointing downward
2. Remove blue safety release

2. Swing and push orange tip firmly into mid-outer thigh until you hear a ‘click’
3. Hold on thigh for several seconds

Built-in needle protection

- When the EpiPen® Auto-injector is removed, the orange needle cover automatically extends to cover the injection needle

After administration, patients should seek medical attention immediately or go to the emergency room. For the next 48 hours, patients must stay within close proximity to a healthcare facility or where they can call 911.

For more information go to www.EpiPen.ca

Vancouver Coastal Health
Promoting wellness. Ensuring care.

King Pharmaceuticals
Emergency response at hand.

EpiPen.ca
What is a Twinject®?

• Contains two doses of epinephrine in a single device
• The first dose of epinephrine is given the same way as EpiPen®
Using the Twinject® Auto-Injector

1. Pull off GREEN end cap labeled “1”
2. Pull off RED end cap labeled “2”
3. Press GREY cap into outer thigh until unit activates
Using the Twinject® Auto-Injector

4. Hold the Twinject® in place for 10 seconds

5. Apply pressure to injection site with a tissue or bandage if there is bleeding

6. Follow standard precautions for your safety (wearing gloves, being careful when handling exposed auto-injector needle)
Using the Twinject® Auto-Injector

• If a second dose of epinephrine is medically required, VCH recommends that it is provided by using a new auto-injector device (either Twinject® dose 1 or an EpiPen®)

• For your safety, it is NOT recommended that staff give dose 2 of Twinject®
When is a Second Dose Auto-Injector Needed?

- 20% of children with severe anaphylactic reactions will require a second dose of epinephrine.
- Some children might have a note from their physician to have a second dose of epinephrine because of the severity of the allergic response. When this happens, the parent needs to give 2 auto injectors to the school or facility.
- A second dose of epinephrine can be given 5-15 minutes after the first dose, or as advised by the physician (using a single dose auto injector).
- Give the second dose in the outer thigh of the other leg, using a new auto injector.
After Giving a Single Dose Auto-Injector

- Give epinephrine (epipen or twinject)
  - after it clicks, hold in place for several seconds (count to 15)
- Call 911
- Call the Parent/Guardian
- Have the student lie still on his or her back with feet higher than the head
- Loosen tight clothing and cover the student with a blanket
- Don't give anything to drink
- If there's vomiting, turn the child on his or her side to prevent choking
After Giving a Single Dose Auto-Injector

Send the EpiPen® or Twinject® auto-injector to the hospital with the child.
Conclusion: Follow the Three A’s

• Awareness:
  – Know the triggers
  – Know the emergency plan and how to administer medication
  – Children should wear Medical Alert bracelet

• Avoidance:
  – Avoid contact with allergens, make classrooms safe

• Action:
  – Give single dose auto-injector and call 911
Prevention and Caution

- Awareness and avoidance of allergic triggers
- Encourage child to tell the teacher or a grown-up if they feel unwell
- Medicalert bracelet
- Epinephrine immediately available at all times
Resources

- Refer to: Emergency Medical Management Guidelines. Standards and Guidelines “Roles and Responsibilities” for Parents, Student, Principal, Teacher/Staff, other Students and the Public Health Nurse (Available with SD 44 and 45 and Public Health)
Resources

• VCH pamphlet: “Sharing the Responsibility for the Student with Severe Allergies and Anaphylaxis in Schools”

• Public Health School Nurse, North Shore: 604-983-6700
Resources

• www.anaphylaxis.org
• http://www.bcchealthguide.org/kbase/topic/symptom/allre/overview.htm
• http://www.bcchealthguide.org/healthfiles
References

• AAIA Anaphylaxis Reference Kit (2007); Allergy and Asthma Information Association, Health Canada

• Anaphylaxis in Schools and Other Settings (2005); Canadian Society of Allergy and Clinical Immunology