



## CANYONS SCHOOL DISTRICT NURSING SERVICES

### Protocol for Epinephrine Auto-injector for Undiagnosed Anaphylaxis

#### Training Standards for the Administration of Epinephrine Auto-injectors

All school personnel responsible for the storage and emergency use of epinephrine auto-injectors must be trained annually by a Canyons School District Nurse. This training will include information on:

- Techniques for recognizing symptoms of anaphylaxis
- Standards and procedures for the storage of the epinephrine auto-injector
- Emergency use of epinephrine auto-injectors and emergency follow-up procedures, including calling 911 and contacting student's parent.

The training process will include:

- Viewing Canyons School District Nursing Services Epinephrine Auto-Injector PowerPoint.
- Completing a quiz.
- Demonstration of epinephrine auto-injector use to a district nurse

#### A. Techniques for recognizing symptoms of anaphylaxis

The signs and symptoms of anaphylaxis usually appear rapidly, within seconds or minutes, after an exposure to an allergen, although, in some cases the reaction can be delayed for up to one to three hours depending on the substance causing the reactions. The Utah Health Code definition of **ANAPHYLAXIS IS "POTENTIALLY LIFE-THREATENING HYPERSENSITIVITY TO A SUBSTANCE."** Common symptoms, according to the American Academy of Allergy, Asthma and Immunology's (AAAAI) Position Statement 34, include:

Hives	Coughing
Itching (of any body parts)	Wheezing
Swelling (of any body parts)	Throat tightness or closing
Red, watery eyes	Difficulty swallowing
Runny nose	Difficulty breathing
Vomiting	Sense of doom
Diarrhea	Dizziness
Stomach cramps	Fainting or loss of consciousness
Change in voice	Change in color

Some individuals have an anaphylactic reaction and the symptoms go away only to return a few hours later. This is called a bi-phasic reaction. Often the symptoms of the bi-phasic reaction occur in the respiratory system and take the individual by surprise. Therefore, according to the AAAAI, after a serious reaction "observation in a hospital setting is necessary for at least four hours after initial symptoms subside because delayed or prolonged reactions may occur even after proper initial treatment."

Once anaphylaxis has begun, the treatment of choice is an immediate intramuscular injection of epinephrine, which is effective for 10 to 15 minutes (according to the manufacturer of epinephrine auto-injectors, Dey Labs), followed by emergency medical attention.

Common causes of anaphylaxis include:

- **Food**
- **Insect stings**
- **Medication (e.g. antibiotics, aspirin, and non-steroidal anti-inflammatory drugs)**

- **Latex**

Less common causes of anaphylaxis include:

- Food-dependent exercise induced anaphylaxis (rare--- occurs when an individual eats a specific food and exercises within three to four hours after eating)
- Idiopathic anaphylaxis (unknown cause)

Severe allergic reactions may be at times unavoidable because foods may contain unknown or unreported allergy producing ingredients, there is a wide range of insects, latex can be found almost anywhere, and some individuals do not know that they are severely allergic to one or more allergens.

## **B. Standards and procedures for the storage and emergency use of epinephrine auto-injectors.**

An epinephrine auto-injector is a disposable drug delivery system that contains the proper dose of epinephrine and is used to treat anaphylaxis. It is supplied as a spring-loaded syringe that can be easily transported. The disposable system is designed to treat a single anaphylactic episode and must be sent to the emergency room with the EMT. The following information on the emergency use of an epinephrine auto-injector is based on the manufacturer's instructions.

### **Steps in the Emergency Use of an Epinephrine auto-injector (EpiPen):**

1. Determine if anaphylaxis is suspected. Anaphylaxis usually, but not always occurs right after exposure to an allergen. Frequently anaphylaxis occurs in individuals who have a history of a previous reaction. **If there is uncertainty about the diagnosis, but there is a reasonable probability that it is anaphylaxis, then treat as anaphylaxis.**
2. **If anaphylaxis symptoms occur, administer EpiPen and have an assistant call 911 or activate the emergency medical system (EMS). Stay with the student.** Have others notify the parent, school administrator, and district nurse immediately.
3. For students in second grade or below, or if less than 66 lbs., use the **Green label** EpiPen (0.15 mg).
4. For adults and students in third grade or above, or if more than 66 lbs., use **Yellow label** EpiPen (0.3 mg). The EpiPen acts immediately; however the effects last only 10 -15 minutes. *Make sure someone has called 911.*
5. EpiPen Administration Procedure
  - a. **Pull the blue safety release cap**
  - b. **Swing and firmly push the orange tip against the OUTER THIGH so it 'clicks.' HOLD on the thigh for approximately 10 seconds to deliver the drug.**
    - i. Please note: As soon as you release pressure from the thigh, the protective cover will extend.
    - ii. Each EpiPen Auto-injector contains a single dose of medicine called epinephrine, which you inject into the outer thigh. **ONLY INJECT INTO THE THIGH.**
6. Monitor student's airway and breathing. Begin CPR immediately if the student stops breathing.
7. Student must be transported to the emergency room since a delayed reaction may occur up to 6 hours after the initial anaphylaxis.
8. Document the incident on the Canyons School District *Epinephrine Auto-injector Administration Report* and the *Utah Department of Health Student Injury Report*. Include in the documentation the date and time EpiPen was administered, the student's response, and additional pertinent information. Send a copy of the Canyons School District *Epinephrine Auto-injector Administration Report* to the student's district nurse.

## **Storage:**

According to the manufacturer, epinephrine auto-injectors should be **stored at room temperature** until the marked expiration date, at which time the unit must be replaced. Auto-injectors should not be refrigerated as this could cause the device to malfunction. Auto-injectors should not be exposed to extreme heat, such as in the glove compartment or trunk of a car during the summer and they should not be exposed to direct sunlight. Heat and light shorten the life of the product and can cause the epinephrine to degrade. To be effective, the solution in the auto-injector should be clear and colorless. If the solution is brown, replace the unit immediately.

## **C. Emergency follow-up procedures, including calling the emergency 911 phone number and contacting, if possible the student's parent.**

When it is determined, based on the symptoms, that an anaphylactic reaction is occurring, it is important to act quickly. Administer epinephrine via an epinephrine auto-injector and have an assistant call 911 and request emergency response. Then contact the student's parents, school administrator, and your assigned district nurse and inform them of the actions taken. Stay with the student until the paramedics arrive.

Even after epinephrine has been administered, emergency medical care should be obtained immediately because severely allergic individuals who have experienced anaphylaxis may require emergency respiratory or cardiac care, or even to be resuscitated if they stop breathing altogether. At the very least, these individuals will need professional care to determine whether additional epinephrine, steroids, antihistamines, or other treatment is required. Follow-up diagnosis and care by medical professionals after the administration of epinephrine is important for recovery. A delayed or secondary reaction may occur. Therefore the individual needs to remain under medical supervision for at least four hours after an episode of anaphylaxis.

**\*\*\*This protocol is NOT intended to replace epinephrine auto-injectors provided by parents for those students who are already diagnosed with anaphylaxis. Those parents should still provide an EpiPen for their child.**

**\*\*\*This protocol will remain in place as long as Canyons School District participates in a program that makes free EpiPens available to each school.**