TREATMENT OF SEVERE ALLERGIC REACTION

A Protocol for Training

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Oregon Health Authority – Public Health Division

CREDITS

Astrid Newell, MD and the late Beth Epstein, MD, of the Oregon Department of Human Services, Public Health Division, for the development of the original training protocol and the Oregon Administrative Rules (OARs) regarding the use of epinephrine by the general public.

Authorized for use by the Oregon Health Authority, Public Health Division

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I. INTRODUCTION

Anaphylaxis is a severe, potentially fatal allergic reaction. It is characteristically unexpected and rapid in onset. Immediate injection of epinephrine is the single factor most likely to save a life under these circumstances. Several hundreds of deaths each year are attributed to insect stings and food allergies.

In 1981, legislation was passed by the Oregon Legislature to provide a means of authorizing certain individuals to administer lifesaving treatment to people suffering severe insect sting reactions when a physician is not immediately available. In 1989, the Legislature expanded the scope of the original statute by providing for the availability of the same assistance to people having a severe allergic response to other allergens. The statute underwent minor revisions again in 1997 and 2012.

These bills were introduced at the request of the Oregon Medical Association. These statutes are intended to address situations where medical help often is not immediately available: school settings, camps, forests, recreational areas, etc. The following protocol for training is intended as an administrative document outlining the specific applications of the law, describing the scope of the statute and people to be trained.

II. BACKGROUND

A. An explanation of the law and rules

According to Oregon law **(ORS 433.800-830)**, a person who meets the prescribed qualifications may obtain a prescription for pre-measured doses of epinephrine. The epinephrine may be administered in an emergency situation to a person suffering from a severe allergic response when a licensed health care provider is not immediately available.

The Oregon Administrative Rules supporting this law **(OAR 333-055-000 to 333-055-0035)** stipulate those who complete the training prescribed by the Oregon Health Authority, Public Health Division, receive a Statement of Completion signed by the licensed health care professional conducting the training. This Statement of Completion includes an Authorization to Obtain Epinephrine prescription to obtain an emergency supply of epinephrine auto injectors.

In order for the prescription to be filled, the authorization must be signed by the nurse practitioner or physician responsible for the oversight of the training. This prescription may be filled up to four times in a three-year period. The training and

subsequent authorization will expire three years after the date of the class as identified on the form. The individual must complete retraining in order to receive a new statement of completion and authorization.

B. Who can be trained?

In order to qualify for this training, a person must be 18 years of age or older and must "have, or reasonably expect to have, responsibility for or contact with at least one other person as a result of the eligible person's occupational or volunteer status."

Individuals who are likely to fall under the definition of the law include public or private school employees, camp counselors or camp employees, youth organization staff or volunteers, forest rangers and foremen of forest workers, public or private employers/employees with demonstrated exposure to risk.

In addition to taking the required training course described above, trainees are strongly encouraged to obtain and maintain current training in first aid, CPR and blood borne pathogens courses.

C. The training program

The training program must be conducted by either:

1. A physician licensed to practice in Oregon; or,
2. A nurse practitioner licensed to practice in Oregon; or,
3. A registered nurse, as assigned by a licensed physician or nurse practitioner; or
4. A paramedic, as delegated by an EMS medical director defined in OAR 333-265.

The training must include the following subjects:

1. Recognition of the symptoms of systemic allergic response (anaphylactic reaction) to insect stings and other allergens;
2. Familiarity with factors likely to cause systemic allergic response;
3. Proper administration of an injection of epinephrine; and,
4. Necessary follow-up treatment.

III. ALLERGY DEFINITIONS

Allergen:	A protein not normally found in the body that may cause an exaggerated allergic response by the body upon exposure**.** Examples of allergens include insect venom, food, medication, pollen and others.
Normal Reaction:	Exposure to an allergen either causes no response by the body or produces expected, minimal signs as a result. An example of a normal reaction is the minor swelling and redness as a response to a bee sting.
Localized Reaction:	An exaggerated response by the body to an allergen; it is limited to one side of the body and extends beyond a major joint line. Any of the following signs may be present: swelling, redness, itching and hives.
Anaphylaxis:	An exaggerated response to an allergen that involves multiple areas of the body or the entire body. It is a life-threatening event.

IV. THE NATURE OF ANAPHYLAXIS

As stated in the definition above, anaphylaxis is a life-threatening condition and is almost always unexpected. It can start within minutes of exposure to an allergen or the reaction may be delayed by several hours. Death often occurs as a result of swelling and constriction of the airway and the significant drop in blood pressure.

Once someone is having an anaphylactic reaction, the most important factor in whether they live or die is how quickly they receive an injection of epinephrine.

Because epinephrine must be given promptly at the first signs of anaphylaxis, the decision to treat must be based on recognition of the symptoms.

V. RECOGNIZING ANAPHYLAXIS

Anaphylaxis is evidenced by the following symptoms, **ANY OR ALL OF WHICH MAY BE PRESENT:**

- Shortness of breath or tightness of chest; difficulty in or absence of breathing
- Swelling: especially eyes, lips, face, tongue, or throat
- Sneezing, wheezing or coughing
- Difficulty swallowing
- Dizziness and/or fainting caused by low blood pressure
- Rapid or weak pulse or a racing heart feeling
- Blueness around lips, inside lips, eyelids
- Sweating
- Anxiety
- Itching, with or without hives
- Raised, red rash in any area of the body
- Skin flushing or extreme pallor
- Hoarseness of voice
- Sense of impending disaster or approaching death
- Involuntary bowel or bladder action
- Nausea, abdominal pain, vomiting and diarrhea
- Burning sensation, especially face or chest
- Loss of consciousness

Although anaphylactic reactions typically result in multiple symptoms (e.g., hives, difficulty breathing, dizziness and/or faint feeling), reactions may vary substantially from person to person with possibly only one symptom being present.

Previous history of anaphylactic reactions and known exposure to potential allergens should increase the suspicion that the above signs or symptoms represent an anaphylactic reaction. Because reactions vary little from time to time in the same individual, obtain a description of previous reactions, if possible.

An anaphylactic reaction to an insect sting or other allergen usually occurs quickly; death has been reported to occur within minutes after a sting. Highly food-sensitive individuals may react within seconds to several minutes after exposure to allergens. An anaphylactic reaction occasionally can occur from up to one to two hours after exposure.

It is common for people who are having an anaphylactic reaction to be in an increased state of anxiety. This is especially so if they have a history of a previous severe reaction.

VI. IDENTIFYING THE SENSITIVE INDIVIDUAL

If your staff, students or clients will be facing possible exposure to insect stings (in school settings, camps, tour groups, or outdoor settings such as forests, etc.), and/or may be far away from medical assistance, you should:

- Make every effort to identify beforehand who in the group has a history of allergic reactions (to insects, foods, etc.). This information should be obtained from the individual, student, parent and/or physician as appropriate.
- Obtain signed forms allowing emergency treatment (per facility policy if applicable).
- Know how to access emergency medical help, including:
    - Location of nearest hospital;
    - Location of nearest Emergency Medical Services (EMS) response unit; and
- Determine ahead of time how you will call for help (e.g., cell phone, radio).

If a person has had an anaphylactic reaction in the past, it is possible that his or her next exposure to the allergen (for instance, to bee stings or peanuts) may cause a more severe reaction.

VII. WHAT CAN TRIGGER ANAPHYLAXIS?

A. Overview of the causes of anaphylaxis

The most common identifiable causes of anaphylaxis are:

- Insect stings or bites (e.g., yellow jackets, wasps);
- Foods (e.g., nuts, shellfish, eggs, milk);
- Medications;
- Latex (e.g., balloons, duct or adhesive tape); and
- Physical exercise.

It is important to know that in a high percentage of cases, no specific cause of anaphylaxis is found.

Severe reactions can occur in someone with no history of previous allergic reaction. While anyone may experience anaphylaxis, individuals with a history of previous severe reaction, and those with asthma are most at risk for life-threatening anaphylaxis.

Severe life-threatening allergic response to various allergens occurs in only a small percentage of the general population. It is estimated between 1 and 2 percent of the population will experience anaphylaxis in their lifetime. (Mustafa, 2012, Epidemiology section, para.2).

When severe allergic reactions occur, immediate administration of injectable epinephrine is vital. Often the person suffering the reaction is unable to self-administer epinephrine or is unequipped for the situation. Recognizing the signs of anaphylaxis quickly and administering epinephrine are critical actions you will learn in this training.

B. Insect stings

1. Epidemiology/likely culprits

- Fatal or serious reactions to insect stings are confined almost entirely to bees, wasps, hornets and yellow jackets.
- Insects are more likely to sting during late summer and fall when it is dry and few flowers are still in bloom. Venom is more potent during this time of the year and stinging insects are easier to arouse.
- Bees are more likely to sting on warm bright days, particularly following a rain.
- Patients are seldom able to identify the type of insect. When possible, an attempt at identification should be made once the reaction is treated so the sensitive person can avoid future exposure and his or her doctor can be informed.

2. Avoiding insect stings

Avoid as much as possible:

- Flowers, flowering trees/shrubs;

  Certain colors and types of clothing (especially blue, yellow or dark brown), or rough fabrics (e.g., smooth, hard finish white or tan clothingis safest);
- Fragrant cosmetics, perfumes, lotions;
- Walking outside without shoes;
- Exposed skin (hats, long sleeved shirts, slacks, socks and shoes are recommended);
- Picnics, cooking or eating outdoors;

- Areas of trash or garbage;
- Known areas of insect habitat; and
- Becoming excited, swatting or hitting at the insect (to remove the insect, a gentle brushing motion is recommended).

3. What is ***not*** an anaphylactic reaction to an insect sting?

a. Normal reactions to stings

- A sting in a non-allergic person produces localized, sharp pain that varies in duration following the insertion of the stinger.
- Within minutes, a small reddened area appears at the sting site and may enlarge to about the size of a quarter with hardening and redness. Varying levels of pain and itching may accompany the redness, heat and swelling.
- This response usually lasts about 24 hours, although a sting on the hand or foot may produce swelling that lasts for several days.
- This reaction does not generally require professional medical attention.
- Treatment includes washing the area and removing the stinger.
- The individual with no history of allergic reactions should be observed for 30 mins. after the sting.
- If a child will return home later, then the parent or guardian should be notified of the sting.

If the sting occurs around the eye, nose, or throat, the reaction may be more severe because even minimal swelling may cause obstruction. These types of stings need immediate medical attention. Stings around eyes are particularly serious and should be evaluated by a physician because long-term eye damage is a possibility.

b. Localized allergic reaction to stings

- A localized reaction may involve pain, itching and swelling that extends over an area larger than a quarter.
- The pain, itching and swelling may extend past a major joint line but limited to the affected extremity. This response may be delayed for several hours.
- Treatment includes washing the area and removing the stinger.

- Apply an ice pack to the sting site and elevate the limb, if applicable.
- Administer an oral antihistamine if agency policy allows for this action.
- The person should be observed for at least 30 minutes after the sting.
- Contact the parent or guardian of the child.
- These symptoms may persist for up to a week or more.

c. Toxic reactions to multiple stings

Toxic reactions are the result of multiple stings (usually 10 or more) — for instance when a person steps on a yellow jacket nest. Call 9-1-1 immediately. The evaluation and treatment should be the same as you would for anaphylaxis.

C. Foods

1. Epidemiology/likely culprits

Nearly any food can trigger an allergic reaction at any age. Food allergies are most common in children, and appear to be increasing in frequency. Approximately 8 percent of children in the U.S. have a food allergy (Gupta, 2011, Results section).

Foods commonly associated with severe allergic reactions

- Peanuts
- Eggs
- Soy
- Tree nuts (walnuts, pecans, hazelnuts, etc.
- Milk
- Wheat
- Fish
- Shellfish

2. Avoiding food allergens

- Avoid exposure to known allergens;
- Inform food preparation personnel of individuals with known food allergies;
- Lunch “swapping” or sharing (for instance, among children in a school setting) should be avoided;
- Read labels on food and skin care products for hidden ingredients (e.g., nut oils in lotions);
- Avoid cross-contamination of food via utensils, cutting surfaces, etc.; and
- Encourage hand washing to prevent secondary exposure to allergens.

D. Medications

- People can experience severe allergic reactions to medications even if they have previously taken the medication without incident.
- Of all drugs, penicillin is the most frequent cause of anaphylactic reactions.
- Allergy injections may lead to an allergic reaction.

E. Other allergens

- Latex allergy has become increasingly common, especially among people whose work requires latex gloves, or who undergo frequent medical procedures. Latex is present in many common items such as:
  - Balloons;
  - Ace wraps or first-aid tape;
  - Rubber bands and bungee cords;
  - Erasers;
  - Art supplies.
- An increasing number of patients also are being recognized as having anaphylaxis to unknown substances.

F. Special Considerations

- Pollens and some foods (for example, wheat, eggs, and seafood) can cause anaphylaxis in certain sensitive individuals who exercise after being exposed to these substances.

VIII. TREATMENT FOR ANAPHYLAXIS

A. Responding to anaphylaxis: Basic sequence of steps

1. Determine if the person is suffering an anaphylactic reaction. **It is safer to give the epinephrine than to delay treatment. This is a life-and-death decision.**

2. Do not move the person, unless the location possesses a safety threat.

3. Have the person sit or lie down.

4. Select the proper version of the auto-injector.

5. Administer epinephrine through the device.

6. **Have someone call for emergency medical assistance (9-1-1).** DO NOT LEAVE THE PERSON UNATTENDED.

7. Note the time when the auto-injector was used.

8. Remove the stinger if one is present. Do this by scraping with a plastic card or fingernail. Do not pinch or squeeze the stinger because this can cause more venom to be released into the body.

9. Check and maintain the person's airway and breathing*. Administer CPR if necessary. If the person has stopped breathing and does not respond to rescue breathing, he/she may have severe swelling of the throat, which closes the airway. Continue CPR efforts.

10. Monitor for changes such as an improvement in breathing, increase in the person's consciousness, or a decrease in swelling.

11. If EMS is more than 10 minutes away or if the person's condition does not change or worsens 5 minutes after using the auto-injector, administer a 2nd dose of an epinephrine auto-injector.

12. Upon the arrival of EMS, advise them of the person's symptoms before the auto-injector was given and any changes of the person's condition since then.

If the person experiencing an anaphylactic reaction also has asthma and is having respiratory symptoms, you can assist the person in the use of his or her own inhaler if desired, **after epinephrine is given.**

It is recommended that any person who received epinephrine for an anaphylaxis reaction follow-up with medical care as soon as possible.

*All people meeting the criteria for severe allergic reaction training are strongly encouraged to take an approved First Aid / CPR training course.

B. Information about epinephrine

1. Description

Epinephrine (also known as adrenaline) is a powerful drug, used for the treatment of anaphylactic reactions. Oregon law does not authorize the use of epinephrine for any other condition including asthma unless specifically ordered by a provider.

Epinephrine is obtained by prescription only. In the case of a life-threatening allergic reaction, it is the most immediate and effective treatment available.

Epinephrine acts on the body by constricting blood vessels and raising the blood pressure, relaxing the bronchial muscles and reducing tissue swelling. The actions of this drug will directly oppose the life-threatening effects of anaphylaxis.

Although epinephrine is very fast acting, its beneficial effects are short-lived (approximately 20 minutes), so it is vitally important to call 9-1-1 immediately.

2. Possible side effects of epinephrine

Temporary and minor side effects of epinephrine include:

- Rapid heart rate
- Nervousness
- Anxiety
- Nausea, vomiting
- Sweating
- Pallor
- Tremor
- Headache

These effects are temporary and will subside with rest and reassurance. Some of the possible side effects of epinephrine may resemble symptoms of anaphylactic shock; however, symptoms related to injection of epinephrine are temporary. Reassurance and a calm demeanor by the responder are important.

3. How epinephrine is supplied and stored

The epinephrine prescription will be filled as an auto-injector device. In 2012, revisions to the Oregon Administrative Rule allowed for the dispensing and use of a twin pack of epinephrine as a single prescription for an individual who has gone through this training.

A few different brands are available for use: EpiPen®, Adrenaclick®, and Auvi-Q®. It is important to know which epinephrine auto-injector you will be using since the method for administration differs between manufacturers.

Epinephrine should be stored in a dark place at room temperature (between 59 – 86 degrees F). Do not store it in a refrigerator. The epinephrine auto-injector must be protected from freezing or from exposure to extreme heat or cold (for example, do not store it in your car's glove box). Exposure to sunlight will hasten deterioration of epinephrine more rapidly than exposure to room temperatures.

Regularly inspect your supply of epinephrine. Inspect each auto-injector for the following:

- The solution should be clear and without particles. Solution that appears cloudy, discolored (brown) or with particles must be replaced.
- The auto-injector should be current and not expired.
    - However, if the only epinephrine available during an emergency has expired, it is better to use the expired drug than none at all. If the expired epinephrine is still clear and without particles, it is better to give it than to not give it at all.

4. How epinephrine is administered

A pre-measured dose of epinephrine is delivered via an auto-injector into the middle of the outer thigh. This location is a safe site for injection. The auto-injector is designed to work through clothing for all ages.

The typical dose of epinephrine for adults is 0.3 milligrams. The epinephrine dosing for children is based on weight. Younger children may require a smaller dose with the use of a pediatric auto-injector device.

The following table gives guidelines for choosing the adult versus the pediatric version of the epinephrine auto-injector for children. However, it must be emphasized: **DON'T DELAY BY WEIGHING!!** Use your best guess, but do not spend time trying to ascertain the person's actual weight (e.g., weighing the person, looking up records, etc.).

Devices	USE	Approximate WEIGHT	Dose automatically delivered by device
EPIPEN® Adrenaclick® Auvi-Q®	Older child or adult (> 9-10 years old)	> 66 lbs	0.3 milligrams
EPIPEN® JR Adrenaclick® Auvi-Q®	Younger child (3 to 9 or 10 years old) **	33– 65 lbs	0.15 milligrams
Auvi-Q®	Infants and Toddlers	16.5-33 lbs	0.1 milligrams

** Although the auto-injectable epinephrine products are not recommended for use with small children (infants and toddlers), the risks of death from true anaphylaxis are greater than the risks for administering epinephrine to this age group.

5. **When epinephrine is administered**

Administer epinephrine at the first sign of anaphylaxis. It is safer to give the epinephrine than to delay treatment for anaphylaxis. The sooner that anaphylaxis is treated, the greater the person's chance for surviving the reaction.

The **most important** aspect of intervention for severe allergic response is **timing**. Because of the dangers involved, **you should always be ready to treat the affected person immediately.**

The effects of epinephrine last approximately 10-20 minutes. If the signs of anaphylaxis continue after 5 minutes from the first injection or if signs of anaphylaxis return before EMS arrives, administer a second auto-injector if available.

C. Use of the epinephrine auto-injector

Remember, only epinephrine works for anaphylaxis. **It is safer to give the epinephrine than to delay treatment. This is a life-and-death decision.**

The basic steps of the administration of epinephrine from an auto-injector device are outlined below. Variability exists between the devices.

1. Remove the auto-injector from its protective case.

2. Remove the safety caps of the auto-injector, which are typically found on the trigger (if applicable) and/or the tip of the injection device

3. Hold the auto-injector firmly. Keep fingers away from the tip of the device.

4. Position the device at a 90-degree angle to the outer thigh. For those devices that will trigger upon contact with the skin, jab the device firmly into the thigh until a click is heard.

5. Hold the device against the thigh firmly for 2-10 seconds (based on manufacturer's instructions) to allow the full dose to be administered.
   - Auvi-Q – 2 seconds
   - Epi-pen – 3 seconds
   - Adrenaclick – 10 seconds

6. Remove the device and place it back into its protective case when applicable.

7. Massage the skin at the injection site for 10 seconds.

8. If medical assistance has not been summoned, then call 9-1-1 or have someone do this for you. DO NOT LEAVE THE PERSON UNATTENDED. Advise the dispatcher that epinephrine was given.

   NOTE: Any person who received epinephrine for anaphylaxis ultimately requires evaluation by a physician. Ambulance transport to the emergency department is recommended.

9. Note the time when the auto-injector was used.

IX. REVIEW

A. Definition of anaphylaxis:

- Anaphylaxis is a severe, potentially fatal systemic allergic reaction. It is characteristically unexpected and rapid in onset.
- Immediate injection of epinephrine is the single action most likely to save a life under these circumstances.

Remember, it is safer to give the epinephrine than to delay treatment while

waiting for more severe symptoms!

B. Causes of anaphylaxis and reactions

- The most common causes of anaphylaxis are insect stings, foods and medications.
- Severe reactions can occur in someone with no history of previous allergic reaction.
- Onset of anaphylaxis may be from minutes to hours after contact with the allergy-causing substance.

C. The signs of anaphylaxis (ANY or ALL of which may be present):

- Shortness of breath or tightness of chest; difficulty in or absence of breathing
- Sneezing, wheezing or coughing
- Difficulty swallowing
- Swelling of eyes, lips, face, tongue, throat or elsewhere
- Low blood pressure, dizziness and/or fainting
- Sense of impending disaster or approaching death
- Blueness around lips, inside lips, eyelids
- Rapid or weak pulse
- Itching, with or without hives; raised red rash in any area of the body
- Burning sensation, especially face or chest
- Hoarseness
- Skin flushing or extreme pallor
- Involuntary bowel or bladder action
- Nausea, abdominal pain, vomiting and diarrhea
- Sweating and anxiety
- Loss of consciousness

D. Responding to anaphylaxis: Basic sequence of steps

1. Determine if the person is suffering an anaphylactic reaction.
2. Do not move the person, unless the location possesses a safety threat.
3. Have the person sit or lie down.
4. Select the proper version of the auto-injector.
5. Administer epinephrine through the device.
6. **Have someone call 9-1-1.** DO NOT LEAVE THE PERSON UNATTENDED.
7. Note the time when the auto-injector was used.
8. Remove the stinger if one is present.
9. Check and maintain the person's airway and breathing. Administer CPR if

required.

10. Monitor for changes in the person's breathing and consciousness and also swelling.
11. If EMS is more than 10 minutes away and if the person's condition does not change or worsens after 5 minutes of the auto-injector, then administer a second dose or auto-injector.
12. Upon the arrival of EMS, advise them of the person's signs before the auto-injector was given and any changes of the person's condition since then.

X. Prevention of and preparation for allergic reactions and anaphylaxis

A. Make every effort to identify beforehand who in the group has a history of allergic reactions. This information should be obtained from the individual, student, parent and/or physician as appropriate.

B. Provide information to the person regarding the prevention of and preparation for anaphylaxis:
    - Methods to avoid exposure to allergens
    - Encourage the person to carry an emergency supply of epinephrine
    - Wear a Medic Alert® identification bracelet/necklace or other identification

C. Obtain and update signed forms allowing emergency treatment

D. Familiarize yourself with the local emergency response capabilities in your area, including:
- How you will call for help (cell phone, radio, etc.)
- Location and general response time of first response or ambulance personnel
- Location of the nearest hospital

E. Assure the epinephrine supply you or the person carries is in date and contains clear solution

F. Have an emergency response plan in place and practice it at least annually

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XI. APPENDICES

A. 2017 ORS

433.800 Definitions for ORS 433.800 to 433.830. As used in ORS 433.800 to 433.830, unless the context requires otherwise:

(1) "Adrenal crisis" means a sudden, severe worsening of symptoms associated with adrenal insufficiency, such as severe pain in the lower back, abdomen or legs, vomiting, diarrhea, dehydration, low blood pressure or loss of consciousness.

(2) "Adrenal insufficiency" means a hormonal disorder that occurs when the adrenal glands do not produce enough adrenal hormones.

(3) "Allergen" means a substance, usually a protein, that evokes a particular adverse response in a sensitive individual.

(4) "Allergic response" means a medical condition caused by exposure to an allergen, with physical symptoms that range from localized itching to severe anaphylactic shock and that may be life threatening.

(5) "Hypoglycemia" means a condition in which a person experiences low blood sugar, producing symptoms such as drowsiness, loss of muscle control so that chewing or swallowing is impaired, irrational behavior in which food intake is resisted, convulsions, fainting or coma.

(6) "Nurse practitioner" means a nurse practitioner licensed under ORS chapter 678.

(7) "Other treatment" means oral administration of food containing glucose or other forms of carbohydrate, such as jelly or candy.

(8) "Other treatment has failed" means a hypoglycemic student's symptoms have worsened after the administration of a food containing glucose or other form of carbohydrate or a hypoglycemic student has become incoherent, unconscious or unresponsive.

(9) "Physician" means a physician licensed under ORS chapter 677.

(10)"Physician assistant" means a physician assistant licensed under ORS 677.505 (Application of provisions governing physician assistants to other health professions) to 677.525 (Fees). [1989 c.299 §2; 1997 c.345 §1; 2015 c.676 §3; 2017 c.101 §42a]

433.805 Policy. It is the purpose of ORS 433.800 to 433.830 to provide a means of authorizing certain individuals when a licensed health care professional is not immediately available to administer lifesaving treatment to persons:

(1) Who have severe allergic responses to insect stings and other allergens;

(2) Who are experiencing severe hypoglycemia when other treatment has failed or cannot be initiated; and

(3) Who have adrenal insufficiency and are experiencing an adrenal crisis. [1981 c.367 §1; 1989 c.299 §3; 1997 c.345 §2; 2015 c.676 §4]

433.810 Duties of Oregon Health Authority; rules. The Oregon Health Authority shall:

(1) Adopt rules necessary for the administration of ORS 433.800 to 433.830, including defining circumstances under which ORS 433.800 to 433.815, 433.817 and 433.825 shall apply. The authority shall include input from the educational system, health care provider organizations and other interested parties when adopting rules or amending those rules.

(2) Develop or approve protocols for educational training as described in ORS 433.815 and 433.817, including the use of mechanisms for periodic retraining of individuals, and provide the protocols for educational training upon request to schools, health care professionals, parents or guardians of students or other interested parties. [1981 c.367 §2; 1989 c.299 §4; 1997 c.345 §3; 2009 c.595 §683; 2013 c.486 §5]

433.815 Educational training. (1) Educational training on the treatment of allergic responses, as required by ORS 433.800 to 433.830, shall be conducted by a physician, physician assistant or nurse practitioner. The training may be conducted by any other health care professional licensed under ORS chapter 678 as assigned by a physician, physician assistant or nurse practitioner, or by an emergency medical services provider meeting the requirements established by the Oregon Health Authority by rule. The curricula shall include, at a minimum, the following subjects:

(a) Recognition of the symptoms of systemic allergic responses to insect stings and other allergens;

(b) Familiarity with common factors that are likely to elicit systemic allergic responses;

(c) Proper administration of an intramuscular or subcutaneous injection of epinephrine for severe allergic responses to insect stings and other specific allergens; and

(d) Necessary follow-up treatment.

(2) Educational training on the treatment of hypoglycemia, as required by ORS 433.800 to 433.830, shall be conducted by a physician, physician assistant, nurse practitioner or any other health care professional licensed under ORS chapter 678. The curricula shall include, at a minimum, the following subjects:

(a) Recognition of the symptoms of hypoglycemia;

(b) Familiarity with common factors that may induce hypoglycemia;

(c) Proper administration of a subcutaneous injection of glucagon for severe hypoglycemia when other treatment has failed or cannot be initiated; and

(d) Necessary follow-up treatment.

(3) Educational training on the treatment of adrenal insufficiency, as required by ORS 433.800 to 433.830, shall be conducted by a physician, physician

assistant, nurse practitioner or any other health care professional licensed under ORS chapter 678. The curricula shall include, at a minimum, the following subjects:

(a) General information about adrenal insufficiency and the dangers associated with adrenal insufficiency;

(b) Recognition of the symptoms of a person who is experiencing an adrenal crisis;

(c) The types of medications that are available for treating adrenal insufficiency; and

(d) Proper administration of medications that treat adrenal insufficiency. [1981 c.367 §3; 1989 c.299 §5; 1997 c.345 §4; 2011 c.70 §8; 2013 c.1 §64; 2015 c.676 §5; 2017 c.101 §43]

433.817 Educational training conducted by public health authority or organization or by trained person. Educational training on the treatment of allergic responses, as required by ORS 433.800 to 433.830, may be conducted by a public health authority or organization or by any other entity or individual approved by the Oregon Health Authority by rule. The training curricula under this section must include the following subjects:

(1) Recognition of the symptoms of systemic allergic responses to insect stings and other allergens;

(2) Familiarity with common factors that are likely to elicit systemic allergic responses;

(3) Proper administration of an intramuscular or subcutaneous injection of epinephrine for severe allergic responses to insect stings and other specific allergens; and

(4) Necessary follow-up treatment. [2013 c.486 §4; 2017 c.101 §44]

433.820 Eligibility for training. A person eligible to receive the training described in ORS 433.815 and 433.817 must meet the following requirements:

(1) Be 18 years of age or older; and

(2) Have, or reasonably expect to have, responsibility for or contact with at least one other person as a result of the eligible person's occupational or volunteer status, such as camp counselors, scout leaders, school personnel, forest rangers, tour guides or chaperones. [1981 c.367 §4; 1997 c.345 §5; 2011 c.70 §9; 2013 c.486 §6]

433.825 Availability of doses of epinephrine, glucagon and medication that treats adrenal insufficiency to trained persons. (1)(a) A person who has successfully completed educational training described in ORS 433.815 or 433.817 for severe allergic responses may receive from any health care professional who has appropriate prescriptive privileges and who is licensed under ORS chapter

677 or 678 a prescription for premeasured doses of epinephrine and the necessary paraphernalia for administration.

(b) An entity that employs a person described in paragraph (a) of this subsection may acquire, possess and make available premeasured doses of epinephrine and the necessary paraphernalia for administration as described in paragraph (c) of this subsection. A health care professional who has appropriate prescriptive privileges and is licensed under ORS chapter 677 or 678 may write a prescription for premeasured doses of epinephrine and the necessary paraphernalia in the name of an entity that employs a person described in paragraph (a) of this subsection.

(c) A person described in paragraph (a) of this subsection may, pursuant to a prescription issued under paragraph (a) or (b) of this subsection, acquire, possess and administer, in an emergency situation when a licensed health care professional is not immediately available, prescribed epinephrine to any person suffering a severe allergic response.

(2) A person who has successfully completed educational training in the administration of glucagon as described in ORS 433.815 for hypoglycemia may receive from the parent or guardian of a student glucagon prescribed by a health care professional who has appropriate prescriptive privileges and is licensed under ORS chapter 677 or 678, as well as the necessary paraphernalia for administration. The person may possess the glucagon and administer the glucagon to the student for whom the glucagon is prescribed if the student is suffering a severe hypoglycemic reaction in an emergency situation when a licensed health care professional is not immediately available and other treatment has failed or cannot be initiated.

(3) A person who has successfully completed educational training in the treatment of adrenal insufficiency as described in ORS 433.815 may receive from the parent or guardian of a student a medication that treats adrenal insufficiency and that is prescribed by a health care professional who has appropriate prescriptive privileges and is licensed under ORS chapter 677 or 678, as well as the necessary paraphernalia for administration. The person may possess the medication and administer the medication to the student for whom the medication is prescribed if the student is suffering an adrenal crisis in an emergency situation when a licensed health care professional is not immediately available. [1981 c.367 §5; 1989 c.299 §6; 1997 c.345 §6; 2013 c.486 §7; 2015 c.676 §6; 2017 c.101 §45]

433.830 Immunity of trained person and institution rendering emergency assistance. (1) No cause of action shall arise against a person who has successfully completed an educational training program described in ORS 433.815 or 433.817

for any act or omission of the person when acting in good faith while rendering emergency treatment pursuant to the authority granted by ORS 433.800 to 433.830, except where such conduct can be described as wanton misconduct.

(2) No cause of action shall arise against an institution, facility, agency or organization when acting in good faith to allow for the rendering of emergency treatment pursuant to the authority granted by ORS 433.800 to 433.830, except where such conduct can be described as wanton misconduct. [1981 c.367 §6; 1997 c.345 §7; 2013 c.486 §8]

B. OAR February, 2016

333-055-0000
Purpose

(1) The purpose of OAR 333-055-0000 through 333-055-0035 is to describe the circumstances under which these rules apply and to define the procedures for authorizing certain individuals, when a licensed health care professional is not immediately available, to administer:

(a) Epinephrine to a person who has a severe allergic response to an allergen;

(b) Glucagon to a person who is experiencing severe hypoglycemia when other treatment has failed or cannot be initiated; and

(c) Medication that treats adrenal insufficiency to a student who is experiencing an adrenal crisis.

(2) Severe allergic reactions requiring epinephrine will occur in a wide variety of circumstances.

(3) Severe hypoglycemia requiring glucagon, in settings where children prone to severe hypoglycemia are known to lay providers and where arrangements for the availability of glucagon have been made, will occur primarily in, but not limited to, school settings, sports activities, and camps.

(4) An adrenal crisis for students diagnosed with adrenal insufficiency will occur in a wide variety of circumstances. The administration of medication to treat a student experiencing an adrenal crisis may be provided by trained school personnel in accordance with OAR 581-021-0037 whose parent or guardian has provided the necessary medication and equipment for administration.

Statutory/Other Authority: ORS 433.805 & 433.810

Statutes/Other Implemented: ORS 433.800 - 433.830

History: PH 3-2016, f. & cert. ef. 2-8-16; OSHA 4-2012, f. 9-19-12, cert. ef. 1-1-13; PH 14-2012, f. & cert. ef. 9-19-12; OHD 7-1998, f. & cert. ef. 7-28-98; Reverted to HD 10-1982, f. & ef. 5-25-82; HD 23-1990(Temp), f. & cert. ef. 8-15-90; HD 10-1982, f. & ef. 5-25-82

333-055-0006
Definitions
(1) "Adrenal crisis" means a sudden, severe worsening of symptoms associated with adrenal insufficiency, such as severe pain in the lower back, abdomen or legs; vomiting; diarrhea; dehydration; low blood pressure or loss of consciousness.
(2) "Adrenal insufficiency" means a hormonal disorder that occurs when the adrenal glands do not produce enough adrenal hormones.
(3) "Allergen" means a substance, usually a protein, that evokes a particular adverse response in a sensitive individual.
(4) "Allergic response" means a medical condition caused by exposure to an allergen, with physical symptoms that range from localized itching to severe anaphylactic shock and that may be life threatening.
(5) "Emergency Medical Services Provider (EMS Provider)" means a person who has received formal training in pre-hospital and emergency care and is state-licensed to attend to any ill, injured or disabled person. Police officers, fire fighters, funeral home employees and other personnel serving in a dual capacity, one of which meets the definition of "emergency medical services provider" are "emergency medical services providers" within the meaning of ORS Chapter 682.
(6) "Hypoglycemia" means a condition in which a person experiences low blood sugar, producing symptoms such as drowsiness, loss of muscle control so that chewing or swallowing is impaired, irrational behavior in which food intake is resisted, convulsions, fainting or coma.
(7) "Other treatment" means oral administration of food containing glucose or other forms of carbohydrate, such as jelly or candy.
(8) "Other treatment has failed" means a hypoglycemic student's symptoms have worsened after the administration of a food containing glucose or other form of carbohydrate or a hypoglycemic student has become incoherent, unconscious or unresponsive.
(9) "Paramedic" means a person who is licensed by the Oregon Health Authority as a Paramedic.
(10) "Supervising professional" means a physician licensed under ORS Chapter 677, or a nurse practitioner licensed under ORS Chapter 678 to practice in this state and who has prescription writing authority.
Statutory/Other Authority: ORS 433.810
Statutes/Other Implemented: ORS 433.800 - 433.830
History: PH 3-2016, f. & cert. ef. 2-8-16; PH 14-2012, f. & cert. ef. 9-19-12

333-055-0015
Educational Training
(1) Individuals to be trained to administer glucagon and school personnel to be trained to administer a medication that treats a student who has adrenal insufficiency and who

is experiencing symptoms of adrenal crisis based on the student's health plan must be trained by:
(a) A physician licensed under ORS Chapter 677;
(b) A nurse practitioner licensed under ORS Chapter 678; or
(c) A registered nurse licensed under ORS Chapter 678.
(2) Individuals to be trained to administer epinephrine must be trained by:
(a) A physician licensed under ORS Chapter 677;
(b) A nurse practitioner licensed under ORS Chapter 678;
(c) A registered nurse licensed under ORS Chapter 678 as assigned by a supervising professional to teach the OHA-Public Health Division Treatment of Severe Allergic Reaction training and distributes a Certificate of Completion and Authorization to Obtain Epinephrine in accordance with OAR 333-055-0030(1); or
(d) A paramedic as delegated by an EMS Medical Director defined in OAR chapter 333, division 265.
(3) The training described in sections (1) and (2) of this rule must follow the Oregon Health Authority, Public Health Division training protocol, or an Authority approved equivalent. The Public Health Division approved training protocol for emergency glucagon providers is available on the Internet at http://healthoregon.org/diabetes. The training protocols for the treatment of severe allergic reaction or treatment of adrenal crisis are available on the Internet at http://healthoregon.org/ems.
Statutory/Other Authority: ORS 433.810
Statutes/Other Implemented: ORS 433.815 & 433.817
History: PH 3-2016, f. & cert. ef. 2-8-16; PH 14-2012, f. & cert. ef. 9-19-12; PH 10-2004, f. & cert. ef. 3-23-04; OHD 7-1998, f. & cert. ef. 7-28-98; Reverted to HD 10-1982, f. & ef. 5-25-82; HD 23-1990(Temp), f. & cert. ef. 8-15-90; HD 10-1982, f. & ef. 5-25-82

333-055-0021
Eligibility for Training
In order to be eligible for training under OAR 333-055-0015, a person must:
(1) Be 18 years of age or older; and
(2) Have, or reasonably expect to have, responsibility for or contact with at least one other person as a result of the eligible person's occupational or volunteer status, such as, but not limited to, a camp counselor, scout leader, forest ranger, school employee, tour guide or chaperone.
Statutory/Other Authority: ORS 433.810
Statutes/Other Implemented: ORS 433.820
History: PH 3-2016, f. & cert. ef. 2-8-16; PH 14-2012, f. & cert. ef. 9-19-12

333-055-0030
Certificates of Completion of Training

(1) Persons who successfully complete educational training under OAR 333-055-0000 through 333-055-0035 shall be given a Public Health Division statement of completion signed by the individual conducting the training. The statement of completion for the treatment of allergic response training may also be used as an authorization to obtain epinephrine if fully completed and personally signed by a nurse practitioner or a physician responsible for the training program. (a) A statement of completion for the treatment of allergic response training may be obtained from the Oregon Health Authority, Public Health Division, 800 NE Oregon Street, Suite 290, Portland, Oregon 97232, Phone: (971) 673-1230.
(b) A statement of completion for emergency glucagon providers is included in the training protocol available at http://healthoregon.org/diabetes.
(c) A statement of completion for school personnel trained in the administration of a medication to treat adrenal crisis is included in the treatment of adrenal insufficiency protocol available at http://healthoregon.org/ems.
(2) The statement of completion and authorization to obtain epinephrine form allows a pharmacist to generate a prescription and dispense an emergency supply of epinephrine for not more than one child and one adult in an automatic injection device if signed by a nurse practitioner or physician. Whenever such a statement of completion form for an emergency supply of epinephrine is presented, the pharmacist shall write upon the back of the statement of completion form in non-erasable ink the date that the prescription was filled, returning the statement of completion to the holder. The prescription may be filled up to four times. The pharmacist who dispenses an emergency supply of epinephrine under this rule shall also reduce the prescription to writing for his files, as in the case of an oral prescription for a non-controlled substance, and file the same in the pharmacy.
(3) A person who has successfully completed educational training in the administration of glucagon may receive, from the parent or guardian of a student, doses of glucagon prescribed by a health care professional with appropriate prescriptive privileges licensed under ORS chapters 677 or 678, and the necessary paraphernalia for administration.
(4) A person who has successfully completed educational training in the administration of a medication to treat adrenal crisis may receive, from the parent or guardian of a student, medication that treats adrenal insufficiency prescribed by a health care professional with appropriate prescriptive privileges licensed under ORS Chapters 677 or 678, and the necessary paraphernalia for administration.
(5) Completion of a training program and receipt of a statement of completion does not guarantee the competency of the individual trained.
(6) A statement of completion and authorization to obtain epinephrine shall expire three years after the date of training identified on the statement of completion. Individuals trained to administer epinephrine, glucagon or a medication to treat adrenal insufficiency must be trained every three years in accordance with OAR

333-055-0015 in order to obtain a new statement of completion.
(7) Individuals trained to administer epinephrine, glucagon or a medication to treat adrenal crisis may be asked to provide copies of a current statement of completion to their employers or to organizations or entities to which they volunteer.
[ED. NOTE: Figures referenced are available from the agency.]
Statutory/Other Authority: ORS 433.810
Statutes/Other Implemented: ORS 433.815, 433.817 & 433.825
History: PH 17-2017, minor correction filed 12/13/2017, effective 12/13/2017; PH 3-2016, f. & cert. ef. 2-8-16; PH 14-2012, f. & cert. ef. 9-19-12; PH 10-2004, f. & cert. ef. 3-23-04; OHD 7-1998, f. & cert. ef. 7-28-98; Reverted to HD 10-1982, f. & ef. 5-25-82; HD 23-1990(Temp), f. & cert. ef. 8-15-90; HD 10-1982, f. & ef. 5-25-82

333-055-0035
Circumstances in Which Trained Persons May Administer Epinephrine or Glucagon
(1) A person who holds a current statement of completion pursuant to OAR 333-055-0030 may, in an emergency situation when a licensed health care professional is not immediately available, administer epinephrine to any person suffering a severe allergic response to an insect sting or other allergen. The decision to give epinephrine should be based upon recognition of the signs of a systemic allergic reaction and need not be postponed for purposes of identifying the specific antigen which caused the reaction.
(2) A person who holds a current statement of completion pursuant to OAR 333-055-0030 may, in an emergency situation involving an individual who is experiencing hypoglycemia and when a licensed health care professional is not immediately available, administer health care professional-prescribed glucagon to a person for whom glucagon is prescribed, when other treatment has failed or cannot be initiated. The decision to give glucagon should be based upon recognition of the signs of severe hypoglycemia and the inability to correct it with oral intake of food or drink.
(3) School personnel who hold a current statement of completion pursuant to OAR 333-055-0030 may, in an emergency situation involving a student diagnosed with adrenal insufficiency who is experiencing symptoms of adrenal crisis and when a licensed health care professional is not immediately available, administer health care professional-prescribed medication to treat adrenal insufficiency. The decision to give medication to a student with adrenal insufficiency should be based upon the student's health plan in accordance with OAR 581-021-0037 and recognition of the signs of adrenal crisis and need not be postponed.
Statutory/Other Authority: ORS 433.810

Statutes/Other Implemented: ORS 433.825
History: PH 3-2016, f. & cert. ef. 2-8-16; PH 14-2012, f. & cert. ef. 9-19-12; PH 10-2004, f. & cert. ef. 3-23-04; OHD 7-1998, f. & cert. ef. 7-28-98; HD 10-1982, f. & ef. 5-25-82

Epinephrine Quiz

Name _____ Date _____

Affiliation _____

Evaluation Tool (Open book — you may use your class notes.)

1. The three most common types of substances that cause anaphylaxis are:
(a)
(b)
(c)

2. If a person exhibits symptoms of anaphylaxis, one should wait until a complete history has been obtained before giving epinephrine.

_____True _____False

3. List two protective actions that should be taken by a person who knows he or she has previously had a severe allergic reaction to insects, foods, or other allergens:
(a)
(b)

4. If an insect sting causes swelling of an extremity beyond a major joint but does not extend beyond the extremity and doesn't cause additional symptoms, it should be considered an anaphylactic reaction.

_____True _____False

5. If someone is having symptoms of a severe allergic reaction to food, it is generally safe to wait for 10 to 15 minutes before treating them.

_____True _____False

6. **Multiple sting sites or a sting site in the mouth or on the face may cause a serious reaction in a person not allergic to insect stings.**

   _____True _____False

7. **If a person has been exposed to a particular allergen in the past (e.g., a particular food, or a sting by a particular insect), but demonstrated no serious symptoms, it is safe to assume he/she will never develop a serious reaction to that same allergen.**

   _____True _____False

8. **One of the side effects of epinephrine includes a fast heart rate.**

   _____True _____False

9. **A 7 year-old between 33-65 pounds is showing signs of anaphylaxis. Which of the following concentrations of epinephrine should be used?**

   a) 0.3 milligram
   b) 0.15milligram

10. **If a stinger is present at the site of a bee sting of a person experiencing anaphylaxis, it should be removed as soon as possible.**

    _____True _____False

Treatment of Allergic Response – Statement of Completion

This certifies that:

_____

Address:

_____

Has completed an approved training program covering recognition of symptoms of systemic reactions to allergens and proper administration of epinephrine, pursuant to ORS 433.800 to 433.830 and rules of the Oregon Health Authority, Public Health Division. Under ORS 433.825 this person is authorized to administer epinephrine in a severe allergic reaction emergency.

_____ _____

Signature of Authorized Trainer Date Trained

Rev. 08/2018