

TRAINING PROTOCOL

EMERGENCY GLUCAGON PROVIDERS

(ORS 433.800 – 830; OAR 333-55-000 through 035)

DHS - OREGON PUBLIC HEALTH DIVISION

Protocol to be used for trainings provided in
schools and places of employment

For Information, Contact:

DHS – Oregon Public Health Division
Oregon Diabetes Program
800 NE Oregon Street
Portland, OR 97232-2162
(971) 673-0984

For Copies, Visit:

<http://www.oregon.gov.DHS/ph/diabetes/>

TABLE OF CONTENTS

Introduction	1
Acknowledgements	1
Training Pre-Requisites	1
School Health Management Plans	2
Using the Glucagon Training Protocol	3
Certification / Re-certification	4
Overview of Diabetes	5
Hypoglycemia (low blood sugar)	6
Intervention for Mild or Moderate Symptoms of Hypoglycemia	7
Treatment for Severe Symptoms of Hypoglycemia	8
Glucagon	8
Storage / Access / Dosage	9
Equipment for Treatment of Severe Hypoglycemia	9
TO PREPARE GLUCAGON FOR INJECTION	11
Care of the Person Experiencing Hypoglycemia After Administration of Glucagon	12
Follow-up and Consultation After Hypoglycemia Episode	13
Review: Assessment and Treatment of Hypoglycemia	14
References	15
Evaluation Tool	16
Evaluation Answer Key	20
Resources	21
Certificate for Emergency Glucagon Provider	23
Administrative Rules	24
ORS 433.800 - 433.830	
OAR 333-55-000 through 035	

Introduction

The 1997 Oregon Legislature amended ORS 433.800 – 830 (the statute allowing lay persons to administer epinephrine injections to persons experiencing severe allergic reactions) to authorize lay persons to be trained to administer glucagon injections. Glucagon injections are a potentially life-saving treatment for persons suffering from severe hypoglycemia (low blood sugar). This legislation allows for the training of persons over the age of 21 to administer glucagon to any person with hypoglycemia that has been diagnosed by a licensed health care provider. However, the most common applications will likely be to support school-aged children with diabetes.

The DHS-Public Health Division adopted Administrative Rules (333-55-000 through 035) to support training emergency glucagon providers. The Public Health Division is responsible for developing training protocols for the initial training of these emergency providers and their periodic retraining. This is the training protocol for glucagon. For a copy of the epinephrine training protocol, covered under the same statute and rules, please call (971) 673-0984.

Acknowledgements

We would like to acknowledgement the American Diabetes Association's Safe At School Advisory Committee serving Oregon & SW Washington for their assistance in reviewing and editing this manual.

Training Pre-Requisites

To proceed with using this training protocol, the following requirements must be met:

1. The person providing the training must be either a
 - a) Physician licensed to practice in Oregon under ORS Chapter 677,
 - b) Nurse Practitioner licensed to practice in Oregon under ORS chapter 678, or
 - c) Nurse licensed to practice in Oregon under ORS Chapter 678 who has been delegated the training task by a supervising professional;
2. The training should be provided on behalf of persons with a known diagnosis that puts them at risk for hypoglycemia (usually a person with diabetes); and
3. The person(s) to be trained must be at least 21 years of age and can reasonably expect to have responsibility for or contact with the person with hypoglycemia

described above. People likely to fall under this definition include public or private school employees, daycare providers, camp counselors or camp employees, youth organization staff, or volunteers in work places identified by either parent(s) or individual(s) at risk for hypoglycemia.

School Health Management Plans

For children in school or daycare centers, we recommend that parents or guardians of children with diabetes notify school or daycare personnel of their child's medical needs to initiate a school health management plan (typically called a 504 Plan or Individual Health Plan.) The plan should document agreements among the parents/guardian, school or daycare personnel, and medical provider about providing a safe and supportive learning environment for the child with diabetes. A school nurse, if available, is usually the lead staff for implementation of a health plan.

The plan identifies the following elements:

- specific actions for school or daycare personnel to perform;
- a plan for communicating with parents and the child's medical providers;
- school policies and procedures for administering medications, including parental authorization;
- procedures for handling bodily fluids as encountered with blood sugar monitoring; and
- an action plan for each child who has diabetes, which includes information about meal and snack times, blood sugar testing, medications, procedures to follow during field trips or outings, and how to handle emergency situations.

The child's medical provider writes and signs medical orders to support the child's health management plan at school or daycare.

Using the Glucagon Training Protocol

This training protocol may be used either for first-time certification or re-certification purposes.

The following topics are covered in the protocol:

- An overview of diabetes (usually the underlying medical condition for persons who experience hypoglycemia);
- Recognition of the symptoms of hypoglycemia and common factors that lead to hypoglycemia
- Proper administration of an injection of glucagon, as recommended by the manufacturer, for severe hypoglycemia when other treatment has failed or cannot be initiated; and
- Necessary follow-up treatment.

The training session should allow enough time for the trainee to:

- ✓ Read through the protocol.
- ✓ Observe the procedure for administering glucagon.
- ✓ Provide a return demonstration. (A return demonstration is required for certification.)
- ✓ Ask questions.
- ✓ Complete the open-book evaluation tool.

The trainee's past experience with giving injections and/or their current comfort level should be assessed to determine how best to demonstrate the procedure and provide a practice opportunity. If the person is presenting for re-certification, the trainer will need to determine the trainee's existing knowledge base and the degree to which certain topics within the protocol should be emphasized.

Emergency glucagon providers should be strongly encouraged to obtain and maintain current training in an approved First Aid and CPR course such as Medic First Aid™ or the American Red Cross Program.

The key protocol outcome is a person will be trained to recognize signs and symptoms of severe hypoglycemia and administer an injection of glucagon in an emergency situation.

Certification

A Glucagon Administration Certificate can be found in the Appendix. The trainer must use his/her professional judgment to determine if the trainee has satisfactorily completed the training protocol. The trainer must then sign and date the certificate. (We suggest keeping a copy for the file.) The certificate is **provider-specific**, which means that the trainee may be an emergency provider for more than one individual.

Re-certification

- **The certificate expires three years after the date of issuance.**
- Annual retraining is recommended.
- The emergency glucagon provider is responsible to obtain retraining by a licensed health professional when the certificate expires – as per ORS Chapter 677-678.

Overview of Diabetes

Diabetes is a lifelong disease that affects the way the body uses food. Normally food is digested in the stomach and intestines and changed into glucose (sugar). Glucose is then absorbed into the bloodstream. In persons without diabetes, the pancreas produces insulin which allows glucose to pass into cells and be used for energy. However, in persons with diabetes, this system doesn't work properly or not at all, causing glucose to build up in the blood stream instead of passing into the cells. There are two main types of diabetes:

Type 1 diabetes is caused when the pancreas does not produce insulin. Without insulin, sugar cannot enter the cells of the body to be used for energy. Type 1 diabetes is treated with insulin either through shots or a pump. Type 1 diabetes is the usual type found in children and young adults

Type 2 diabetes occurs when either not enough insulin is being produced or when a person's cells do not respond to insulin. Type 2 diabetes may be treated with diet, oral medications and/or insulin shots. Type 2 diabetes is more commonly found in adults however is now becoming present in children.

Both types of diabetes result in high levels of glucose in the blood. Because glucose builds up in the blood the following symptoms occur:

- Increased thirst
- Frequent urination
- Increased hunger (since the body's cells are not getting enough energy)
- Weight loss (because the body can't process sugar into the cells, it resorts to burning fat and protein for energy)
- Irritability
- Flushed, dry skin
- Nausea and vomiting
- Weakness and fatigue

If high blood glucose levels are maintained over time, serious complications can develop such as blindness, kidney or nerve damage and heart disease. Therefore, it is important to control blood glucose within levels identified by a medical provider.

Management of diabetes consists of an intricate balance between medication (insulin or oral), food intake, physical activity, physical and emotional stresses, and illness. Medication and physical activity lower blood glucose levels. Food, stress and illness increase blood glucose levels. Anything that tips this delicate balance can cause changes in blood glucose levels.

Hypoglycemia (low blood sugar)

Hypoglycemia, or low blood sugar, is the most serious problem that can occur with blood glucose control for people with diabetes. Anyone taking insulin or some oral diabetes medications can have blood glucose that is too low. Hypoglycemia requires immediate attention, and is the problem that this training protocol addresses.

Hypoglycemia is usually mild and easy to treat if the symptoms are detected early, but it can become serious. **Low blood sugar comes on very quickly**, and so must be treated by the trained caregiver after recognizing the symptoms of hypoglycemia. If hypoglycemia is not treated right away, it will get worse and can become life-threatening. If the blood sugar level falls very low (severe symptoms), a person can become unconscious and have convulsions (seizures) and if not treated eventually die. When blood glucose gets this low, the person must be treated promptly with administration of glucagon.

The most **common causes of low blood sugar** are the result of a lack of balance between insulin, food intake, and physical activity such as the following:

- Too much diabetes medication; insulin or some oral diabetes medications
- Change in meal or snack times, not enough food or not finishing all food as required.
- Skipping or not finishing meals or snacks
- Getting more physical activity or exercise than usual
- Drinking alcohol without eating.

Symptoms of hypoglycemia can range from mild to severe, and include any or all of the following:

Mild Symptoms	Moderate Symptoms	Severe Symptoms
<ul style="list-style-type: none">• Hunger• Sweating• Feeling shaky• Feeling nervous	<ul style="list-style-type: none">• Headache• Behavior changes• Blurred, impaired or double vision• Crabbiness or confusion• Drowsiness• Weakness• Difficulty talking	<ul style="list-style-type: none">• Unresponsive (i.e. unable or unwilling to take oral feeding)• Loss of consciousness• Convulsions (seizure activity)

It is important to note that the symptoms of hypoglycemia may vary from person to person; a given individual may not experience all of these symptoms in the order they are listed.

Intervention for Mild or Moderate Symptoms of Hypoglycemia

Treat low blood sugar right away with a fast-acting source of sugar. It will not get better on its own. If the health care provider for the person with diabetes has outlined a plan for testing the blood sugar, do so before initiating treatment. Otherwise if the person is able to eat and swallow, provide one of the following sources of fast-acting sugar right away (recommended by the American Diabetes Association.)

- 4-8 ounces of juice
- 6 ounces of regular soda (not sugar-free or diet)
- 3 packets or 1 tablespoon of sugar (not sugar substitute) dissolved in small amount of water.
- 3-4 chewable glucose tablets or 1 dose of glucose gel (15g dose)
- 1 tablespoon of honey
- 2-4 pieces of hard candy

Note: Chocolate is not an appropriate form of treatment as it also contains fat which slows down the absorption of the carbohydrate and does not raise blood glucose levels as quickly. A fast-acting source such as those items listed above are preferred.

15 MINUTE RULE FOR MILD-MODERATE HYPOGLYCEMIA

Observe and recheck blood glucose in 15 minutes. Repeat fast-acting carbohydrate if blood glucose is not within appropriate range. If blood glucose is improved, but next regular meal is more than one hour away, follow treatment with an extra snack per medical provider's orders (usually a carbohydrate and protein.) If after two treatments, blood glucose is not above 80 or continues to fall, call the parent, designated contact (such as in the workplace) or 911.

Treatment for Severe Symptoms of Hypoglycemia

Prepare to treat the person for severe symptoms of hypoglycemia if any of the following occur:

- the person is unable or unwilling to take a treatment
- the person does not feel better after the second treatment
- the symptoms worsen to the point of being unable to swallow
- loss of consciousness or seizures occur.

Reminder: Symptoms of hypoglycemia may vary from person to person. If the emergency glucagon provider is uncertain as to whether the person is experiencing high or low blood glucose, test blood glucose with a meter. If a meter is not available, it is safer to treat for hypoglycemia than delay treatment.

Glucagon

Glucagon, like insulin, is a hormone made in the pancreas. It acts on the liver by converting glycogen to glucose. Products such as Glucagon* or GlucaGen* are safe to use and relatively free of adverse reactions except for nausea and vomiting. Both are usually well tolerated with no cases of human overdose being reported.

Glucagon is available in a package with supplies needed for administration. This is called a **Glucagon Emergency Kit**, and can only be obtained by prescription by the individual affected by diabetes or child's parent/guardian. It is the responsibility of the person for whom glucagon is prescribed, or in the case of a child, the parent/guardian to provide the original and any replacement glucagon emergency kits for use by the emergency glucagon provider.



The Glucagon Emergency Kit contains:

- a bottle of glucagon in powder form
- a syringe filled with special diluting liquid

*. Glucagon is a product of Eli Lilly & Company. GlucaGen (as shown in the picture) is a product of Novo-Nordisk Inc

Storage:

Vials of glucagon as well as the diluting solution should be stored at room temperature (59° - 86°). The powder should not be mixed with the diluting solution until just before it is injected during a hypoglycemic emergency. Glucagon can be given as an injection in accordance with the manufacturer instructions. The injection should be done in the loose, fatty tissue of the arm or thigh and any unused portion should be discarded. The glucagon solution should not be used unless it is clear and has a water-like consistency. The glucagon emergency provider is advised to check expiration dates on the glucagon emergency kits periodically.

Access:

In addition, plans should be in place to assure the glucagon emergency kits are readily available and in close proximity of the child or person with diabetes. Consideration of transportation activities such as field trips or other off facility functions must be taken into account when planning emergency measures for possible hypoglycemia of the student with diabetes. Depending on the age of the student, it may be advisable for students to carry their own glucagon emergency kits during these special activities, and glucagon emergency providers must accompany the child.

Dosage for Administration of Glucagon:

Glucagon is manufactured in 1-mg vials. The health provider will prescribe the individualized dose for the person or child with diabetes when the prescription is obtained. The following dosages are usually recommended:

USE	DOSE	WEIGHT
Adults and Children	1 mg	>20 kg or 44 lbs
Smaller Children	0.5mg	<20 kg or 44 lbs

Equipment for Treatment of Severe Hypoglycemia:

1. Glucagon Emergency Kit
2. Alcohol Swab (if available, otherwise do not delay treatment.)
3. Nonsterile gloves

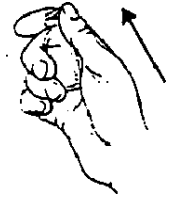
Observation and Intervention Steps for Severe Hypoglycemia

If person is unresponsive (breathing or pulse are absent) call 9-1-1 and initiate cardiopulmonary resuscitation (CPR.)

- 1. If breathing and pulse are present, assume the person with diabetes is having severe hypoglycemia. DO NOT give any food or liquid to a person who cannot swallow or is unconscious/unresponsive.**
- 2. Delegate someone to call 9-1-1 or other emergency response system.** (If the person is unwilling or unable to take oral feeding, unresponsive or unconscious.)
 - a. If possible, also have someone call the affected person's parent/guardian and health care provider.
- 3. OBTAIN GLUCAGON EMERGENCY KIT** and check person's name against kit. Verify any special physician instructions including correct dosage. **NOTE:** BRING supplies to the person, do not move the person. Time is critical for administering treatment to ensure recovery.
- 4. PREPARE AND ADMINISTER** glucagon for injection. (See page 11 for detailed instructions.)
- 5. Clamp** or cut insulin tubing close to pump if on an insulin pump.

TO PREPARE GLUCAGON FOR INJECTION

1. Remove the flip-off seal from the bottle of powdered glucagon.
2. Remove the needle cover from the syringe filled with diluting fluid. **DO NOT REMOVE THE PLASTIC CLIP FROM THE SYRINGE.**
3. Insert the needle into the center of the rubber stopper on the vial of powdered glucagon.
4. Push the plunger on the syringe to inject the entire contents of the liquid solution into the vial of powdered glucagon.
5. Leave the needle on the syringe in the vial.
6. Shake bottle gently until glucagon powder dissolves and the solution becomes clear.



If the glucagon solution is not clear and water-like, do not administer. Monitor the person for absent pulse/respiration, or seizure activity until rescue personnel arrive.

7. Withdraw the prescribed amount of medication.

For an adult or child over 44 lb. withdraw all of the solution from the bottle (1 mg mark on syringe.) would usually be withdrawn.

If the dose is to be given to a small child under 44 lb. withdraw $\frac{1}{2}$ of the solution from the bottle (0.5 mg mark on syringe.) would usually be withdrawn.

NOTE: Very young children may require different doses. Check medical orders to verify dose.

8. Put on gloves.
9. Cleanse the injection site on arm or thigh with alcohol swab if available.
10. Insert the needle into the loose skin or muscle and administer all of the prescribed medication.

Warning: It may be difficult to give an injection to a person who is having a seizure or is demonstrating combative behavior. In this situation, it is best to get assistance from another person to help stabilize the limb of the person being treated.

11. Apply light pressure at the injection site and withdraw the needle.

Care of the Person Experiencing Hypoglycemia After Administration of Glucagon

1. Turn the person on his/her side. One of the most common side effects of glucagon is vomiting. Therefore, positioning the person on his/her side will prevent possible choking and allow for drainage of secretions in the mouth.
2. Continue to monitor for signs of absent pulse/breathing, or seizure activity.
3. Glucagon is a fast-acting drug and the person will usually improve within 10-15 minutes.

Warning: Although rare, the person may be unresponsive for other reasons (ie head injury, drug overdose, high blood sugar level). In such a case, the person will NOT respond to administration of glucagon and will require immediate medical attention.

4. When the person responds and is able to eat and swallow without difficulty, feed the person a fast-acting source of sugar such as those listed on page 7.

Warning: Many times after a person has received glucagon or experienced severe hypoglycemia, he/she may be nauseated and vomit, or be unable to keep foods/ liquids down. It is best to start a person on small sips of clear liquids before providing solid foods. Options include:

- sugar dissolved in water
- 6 ounces regular soda pop (7-up, ginger ale, Sprite, etc.)
- honey and water

5. Once the person can safely swallow clear liquids without vomiting, provide a longer-acting source of sugar (carbohydrate with protein) such as cheese and crackers or a meat sandwich.
6. The person who has recovered from being treated with glucagon for hypoglycemia should receive immediate and continuing medical attention. If summoned, emergency responders will make the decision if the person needs to be transported to a medical facility.

Follow-up and Consultation After Hypoglycemia Episode

Once a person has been given emergency treatment for hypoglycemia, the emergency glucagon provider or parent/guardian should seek consultation with the person's health care provider for direction in preventing future episodes of hypoglycemia.

In the event that the glucagon emergency kit is used for a hypoglycemic emergency, the parent/guardian of the child or person with hypoglycemia is responsible for obtaining and providing another kit for use when needed either in the work place, at school or daycare center.

Review: Assessment and Treatment of Hypoglycemia

1. Observe and determine whether the person is experiencing symptoms of hypoglycemia.
 - a. Test blood sugar if possible and if trained to do so by licensed health care provider.
 - b. Prepare to treat the person for low blood sugar.
2. For signs or symptoms of **Mild or Moderate Hypoglycemia:**
 - a. Give oral treatment (one fast-acting source of sugar.)
 - b. Monitor for 15 minutes to see if symptoms improve.
 - c. Retest blood sugar.
 - d. If symptoms do not improve in 15 minutes, give a second fast-acting oral treatment. If after two treatments, blood glucose is not above 80 or continues to fall, call the parent, designated contact (such as in the workplace) or 911.
 - e. If the next regular meal is more than an hour away, follow the second treatment with an extra snack.
 - f. If on an insulin pump, treat and consult medical orders.
3. For signs and symptoms of **Severe Hypoglycemia:**
 - a. Delegate call to 9-1-1 when person is unconscious or unresponsive, unwilling or unable to take oral treatment.
 - b. If on an insulin pump, clamp or cut tubing close to pump.
 - c. Prepare and administer glucagon according to the guidelines of this training protocol and in accordance with the medical provider's instructions on patient's own glucagon emergency kit.
 - c. Position person on his/her side in the event that vomiting occurs.
 - d. Continue to monitor person for signs of absent pulse/breathing or seizure activity.
 - e. If the person responds and is able to eat and swallow safely, provide fast-acting sugar and longer acting source of food.
 - f. Follow-up by consulting with the person's health care provider.

References

American Diabetes Association (2005). What You Need to Know About Diabetes, An Introduction (brochure).

American Diabetes Association. Hypoglycemia Busters. Accessed at <http://www.diabetes.org/for-parents-and-kids/diabetes-care/hypo-busters.jsp>

American Diabetes Association. (2004). Medical Management of Insulin-Dependent (Type 1) Diabetes (4th ed.) Alexandria, VI.

Centers for Disease Control and Prevention. National Diabetes Fact Sheet: General Information & National Estimates on Diabetes in the United States, 2003. Rev. ed. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, 2004.

Gosselin, K. (1998). 2nd Ed., Taking Diabetes to School, (Special Kids in School). Valley Park, MI: JayJo Books.

Hootman, J., Nursing Interventions in the School Setting: Procedures, Models, and Guidelines. Scarborough, ME: National Association of School Nurses; 1996.

Multnomah Education Service District (2002). MESD, School Health Services Responding to School Emergencies Manual. Portland, OR: MESD, Department of School Health Services.

Physician's Desk Reference ®. (2006, 60th edition). Montvale, New Jersey: Thompson Healthcare.

DATE

NAME

AFFILIATION

Evaluation Tool

(Open book – you may use your class notes)

1. Diabetes is caused when the pancreas does not make enough:
 - a. water
 - b. insulin
 - c. sugar

2. Insulin helps glucose enter into the cells of the body to be used for energy.
 True False

3. List the primary “emergency” situation that can occur with blood sugar control for people with diabetes.
 1. _____

4. Hypoglycemia or low blood glucose usually develops slowly over a period of hours or days.
 True False

5. The most common causes of low blood sugar are (circle all that apply):
 - a. Skipping or not finishing meals or snacks.
 - b. Taking too much diabetes medication (insulin.)
 - c. Change in meal or snack times or not enough food.
 - d. Getting more physical activity or exercise than usual.
 - e. All of the above

6. Symptoms of hypoglycemia or low blood sugar can range from mild to severe. Place the following symptoms under the appropriate category either Mild, Moderate or Severe Symptoms. Symptoms include: hunger, headache, loss of consciousness, weakness, drowsiness, unresponsive, behavior changes, feeling nervous, difficulty talking, sweating, convulsions (seizures), blurred, impaired or double vision, feeling shaky, crabbiness or confusion, behavior changes.

Mild Symptoms of Hypoglycemia

Moderate Symptoms of Hypoglycemia

Severe Symptoms of Hypoglycemia

7. Hypoglycemia or low blood sugar should be treated promptly. For symptoms of mild or moderate symptoms, which of the following foods could be provided as one fast-acting treatment? (Circle all that apply.)
- a) 4-8 ounces of fruit juice
 - b) 3-4 chewable glucose tablets
 - c) 6 ounces of diet soda
 - d) 3 packets or 1 tablespoon of sugar dissolved in small amount of water
 - e) 2-4 pieces of hard candy containing sugar
 - f) a hamburger patty
 - g) 1 tablespoon of honey
 - h) sugar-free candy

8. After providing one fast-acting treatment for mild or moderate hypoglycemia, several actions should be taken. Place the following actions in the proper order (#1-5) for mild or moderate hypoglycemia that did not improve after providing one fast-acting treatment:

_____ Monitor for 15 minutes

_____ Call the contract person.

_____ Retest blood glucose.

_____ Symptoms did not improve, give a second fast-acting treatment.

_____ If the next meal is more than an hour away, provide an extra snack.

9. If a person experiencing severe hypoglycemia is unconscious, it is best to put sugar cubes in her/his mouth.

_____ True _____ False

10. What is glucagon and how does it act on the body?

11. The usual recommended doses for injected glucagon are: (circle appropriate choice):

Adults or Children (over 44 lbs): 1 mg or 0.5mg

Smaller Children (under 44 lbs) 1 mg or 0.5 mg

12. If a person with diabetes is unable to swallow or respond when spoken to, glucagon should be promptly injected into the tissue of the arm or thigh.

_____ True _____ False

13. Glucagon is stable and should always be mixed ahead of time before a hypoglycemic emergency occurs.

_____ True _____ False

14. After administering glucagon, which of the following should you do (choose all that apply):
- a) Turn the person on his/her side in case vomiting occurs.
 - b) Continue to observe the person for signs of absent pulse/breathing or seizure activity.
 - c) Cover the person with a blanket and allow to sleep without being disturbed.
 - d) When the person responds, don't give any more food or liquids because the person may vomit.
 - e) Seek consultation with person's health care provider.
 - f) If a child, relinquish care to emergency responders or parent.

Evaluation Answer Key

1. b
2. True
3. Low Blood Sugar or hypoglycemia
4. False

5. f. All of the above.
 - a) too much diabetes medication (insulin)
 - b) change in meal or snack times or not enough food
 - c) skipping or not finishing meals or snacks
 - d) getting more physical activity or exercise than usual

6.

<u>Mild Symptoms</u>	<u>Moderate Symptoms</u>	<u>Severe Symptoms</u>
hunger	headache	unresponsive
sweating	behavior changes	loss of consciousness
feeling shaky	blurred, impaired or	convulsions (seizures)
feeling nervous	double vision	
	crabbiness or confusion	
	drowsiness	
	weakness	
	difficulty talking	

7. a, b, d, e and g

8.
 - 1) Monitor for 15 minutes.
 - 2) Retest blood glucose.
 - 3) Symptoms did not improve, give a second fast-acting treatment.
 - 4) If the next meal is more than an hour away, provide an extra snack.
 - 5) Call the contact person.

9. False

10. Glucagon is a hormone made in the pancreas. It acts on the liver by converting glycogen to glucose.

11. Adults or Children (over 44 lbs.) 1 mg
Smaller Children (under 44 lbs) 0.5mg

12. True
13. False
14. a, b , e and f.

RESOURCES

American Diabetes Association

- American Diabetes Association (2007). Position Statement “*Diabetes Care in the School and Day Care Setting*” Diabetes Care Supplement 1 Clinical Practice Recommendations.
- **Safe At School Program Training Services**
The Safe At School Program offers knowledge and information about diabetes in schools. Registered Nurse Diabetes Educators provide training in Oregon and SW Washington about management of diabetes, low/high blood sugar symptoms and treatment, glucagon training and certification as well as pump management protocols and training. All have first hand knowledge and experience working with school-aged children with diabetes, providing school in-services, and have completed training through the Multnomah Education Service District Train the Trainer Workshop for Emergency Glucagon Providers. Training can be presented via slides, powerpoint or overheads at the school district’s discretion on a mutually agreeable date and time. For more information or to schedule an in-service call 503 736-2770 ext. 7294 or (888) 342-2383 ext. 7294. Additional resources available through the Safe At School Program include:
 - Print and internet based materials about diabetes management in schools.
 - Video Loan Program (VHS & DVD’s available) about children/teens with diabetes.
 - Trained Family Resource Network Mentors offering support for families either newly diagnosed or experiencing rough times.
 - Safe at School Parent Workshops to provide knowledge and tips about building positive relationships with school staff, planning for contingencies and benefits of an Individual Health Plan.

Oregon Department of Education (ODE)

The Oregon Department of Education (ODE) publication *Health Services for the School Community* is available on-line on the ODE web site: www.ode.state.or.us. Click on “ODE Search”, then enter “Diabetes” in the “Search” box, then click on “*Diabetes PDF*”. Also available on the same site is the *Training Protocol for Emergency Glucagon Providers*. Follow the same directions above, but click on “*Glucagon PDF*” to access this document. This document provides current practice guidelines for children with diabetes in the school setting. Intended for administrators and educators, this document is helpful to anyone working in a school with students who have diabetes.

National Diabetes Education Program

Helping the Student with Diabetes Succeed – A Guide for School Personnel, published by The National Diabetes Education Program, a federally sponsored partnership of the National Institutes of Health, the Centers for Disease Control and Prevention, and more than 200 partner organizations. Copies can be downloaded using the internet, at www.ndep.nih.gov, search for “Schools” then click on the link to the PDF file. Or use http://ndep.nih.gov/diabetes/pubs/Youth_NDEPSchoolGuide.pdf. A single copy is available for free. Additional copies are \$3.00 each (limit 6 copies per order.) Order copies through the NDEP web site or by faxing a request to the Nation Diabetes Information Clearinghouse at (703) 738-4929.

Resources Continued

The following School Nurses Associations offer continuing education opportunities, materials and publications, policy updates, and access to networking opportunities. Recent conferences included “*Helping Administer to the Needs of the Student with Diabetes in Schools (H.A.N.D.S.)*” and “*School Nurse Childhood Obesity Prevention Education (S.C.O.P.E.)*”

National Association of School Nurses: www.nasn.org

Oregon School Nurses Association: www.orschoolrn.org

Washington State Nurses Association: www.wsna.org

CERTIFICATE FOR EMERGENCY GLUCAGON PROVIDERS

Name of Emergency Glucagon Provider _____

This person participated in a training to become an emergency glucagon provider (according to OAR 333-55-000 through 035) and has safely demonstrated mixing and drawing up a glucagon-like solution, and giving an injection in accordance with the manufacturer's instructions. In addition, the person has successfully completed the evaluation.

The emergency glucagon provider can only obtain doses of glucagon from the person diagnosed with hypoglycemia, or in the case of a child from the parent of guardian. Glucagon and the necessary equipment for its administration must be prescribed by a health care professional with appropriate prescriptive privileges licensed under ORS chapter 677 and 678 in the State of Oregon.

This certificate expires three years after the date of issuance (below). It is the responsibility of the Emergency Glucagon Provider to present for re-certification by a licensed health care professional at that time. This certificate is in effect only for the person named above; it cannot be transferred.

Emergency Glucagon Providers may be asked to provide copies of a current certificate to their employer, or to organizations or entities to which they volunteer.

Instructor

Date

PROGRAMS TO TREAT ALLERGIC RESPONSE OR HYPOGLYCEMIA

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) “Allergen” means a substance, usually a protein, which evokes a particular adverse response in a sensitive individual.

(2) “Allergic response” means a medical condition caused by exposure to an allergen, with physical symptoms that may be life threatening, ranging from localized itching to severe anaphylactic shock and death.

(3) “Hypoglycemia” means a condition in which a person experiences low blood sugar, producing symptoms that may range from drowsiness to loss of muscle control so that chewing or swallowing is impaired, to irrational behavior in which food intake is resisted, or to convulsions, fainting or coma.

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

(5) “Other treatment has failed” means the hypoglycemic student’s symptoms have worsened or the student has become incoherent, unconscious or unresponsive. [1989 c.299 §2; 1997 c.345 §1]

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 who have severe allergic responses to insect stings and other specific allergens and to persons who are experiencing severe hypoglycemia when other treatment has failed or cannot be initiated. [1981 c.367 §1; 1989 c.299 §3; 1997 c.345 §2]

433.810 Duties of Department of Human Services; rules. The Department of Human Services shall:

(1) Adopt rules necessary for the administration of ORS 433.800 to 433.830 including defining circumstances under which 433.800 to 433.815 and 433.825 shall apply. The department 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, 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]

433.815 Educational training. Educational training required by ORS 433.800 to 433.830 shall be conducted under the supervision of a physician licensed under ORS chapter 677 or a nurse practitioner licensed under ORS chapter 678 to practice in this state. The training may be conducted by a health care professional licensed under ORS chapter 678 as delegated by a supervising professional. The curricula shall minimally include the following subjects:

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

(2) Recognition of the symptoms of hypoglycemia;

(3) Familiarity with common factors that are likely to elicit systemic allergic responses and common factors that may induce hypoglycemia;

(4) Proper administration of a subcutaneous injection of epinephrine for severe allergic responses to insect stings and other specific allergens;

(5) Proper administration of a subcutaneous injection of glucagon for severe hypoglycemia when other

treatment has failed or cannot be initiated; and

(6) Necessary follow-up treatment. [1981 c.367 §3; 1989 c.299 §5; 1997 c.345 §4]

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

(1) Be 21 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]

433.825 Availability of doses of epinephrine and glucagon to trained persons. (1) A person who has successfully completed educational training described in ORS 433.815 for severe allergic responses may receive from any health care professional with appropriate prescriptive privileges licensed under ORS chapter 677 or 678 in this state a prescription for premeasured doses of epinephrine and the necessary paraphernalia for administration. The person may possess and administer in an emergency situation when a licensed health care professional is not immediately available such 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 doses of glucagon prescribed by a health care professional with appropriate prescriptive privileges licensed under ORS chapter 677 or 678 in this state, as well as the necessary paraphernalia for administration. The person may possess and administer 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. [1981 c.367 §5; 1989 c.299 §6; 1997 c.345 §6]

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 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]

The Oregon Administrative Rules contain OARs filed through
November 15, 2006

DEPARTMENT OF HUMAN SERVICES, PUBLIC HEALTH

DIVISION 55

PROGRAMS TO TREAT ALLERGIC RESPONSE OR HYPOGLYCEMIA

333-055-0000

Purpose

(1) The purpose of OAR 333-055-0000 to 333-055-0035 is to define the procedures for authorizing certain individuals, when a licensed health care professional is not immediately available, to administer epinephrine to persons who have severe allergic responses to insect stings or other allergens, and glucagon to persons who are experiencing severe hypoglycemia when other treatment has failed or cannot be initiated, and to define the circumstances under which these rules shall apply.

(2) Severe allergic reactions requiring epinephrine will occur in a wide variety of circumstances. Severe hypoglycemia requiring glucagon, in settings where children prone to severe hypoglycemia are known to lay providers and arrangements for the availability of glucagon have been made, will occur primarily in the settings of school, sports activities, camp, etc.

(3) Nothing in [ORS 433.800](#) to [433.830](#) is intended to prohibit the rendering of, or to impose further training requirements with respect to Emergency Medical Technicians in the rendering of, emergency medical assistance referred to in [ORS 30.800](#) and [30.805](#) (Emergency Medical Assistance by Medically Trained Persons and Government Personnel).

Stat. Auth.: [ORS 433.800](#) & [ORS 433.830](#)

Stats. Implemented: [ORS 433.800](#) - [ORS 433.830](#)

Hist.: HD 10-1982, f. & ef. 5-25-82; HD 23-1990(Temp), f. & cert. ef. 8-15-90; OHD 7-1998, f. & cert. ef. 7-28-98

333-055-0015

Educational Training

(1) Individuals to be trained to administer epinephrine or glucagon shall be trained under the supervision of a physician licensed under ORS Chapter 677, or a nurse practitioner licensed under ORS Chapter 678 to practice in this state. The training may be conducted by a health care professional licensed under ORS Chapter 678 as delegated by a supervising professional.

(2) The training shall be conducted following a Department of Human Services, Health Services protocol (or equivalent). Health Services protocols may be obtained from the Oregon Department of Human Services, Health Services, 800 NE Oregon Street, Suite 290, Portland, Oregon 97232, Phone: (503)731-4008.

Stat. Auth.: ORS 433.810

Stats. Implemented: ORS 433.800 - 433.830

Hist.: HD 10-1982, f. & ef. 5-25-82; HD 23-1990(Temp), f. & cert. ef. 8-15-90; OHD 7-1998, f. & cert. ef. 7-28-98; PH 10-2004, f. & cert. ef. 3-23-04

333-055-0030

Certificates of Completion of Training

(1) Persons who successfully complete educational training under OAR 333-055-0000 to 333-055-0035 shall be given a Health Services certificate, or equivalent fully completed and personally signed by the licensed health care professional, or designee, responsible for the training program. Blank certificates may be obtained from the Oregon Department of Human Services, Health Services, 800 NE Oregon Street, Suite 290, Portland, Oregon 97232, Phone: (503) 731-4008.

(2) The certificate for epinephrine may be used as a prescription to obtain an emergency supply of epinephrine including the equivalent of one child dose and one adult dose in prefilled syringes. Whenever such a prescription for an emergency supply of epinephrine is presented, the pharmacist shall write upon the back of the certificate in non-erasable ink the date that the prescription was filled, returning the certificate to the holder. The prescription may be filled up to 4 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) Certificates for epinephrine or glucagon shall expire three years after the date of issuance. Individuals certified to administer epinephrine or glucagon shall present for retraining from a licensed health care professional (as outlined above in 333-055-0015) and must successfully complete retraining to obtain a new certificate.

(5) Individuals certified to administer epinephrine or glucagon may be asked to provide copies of a current certificate to their employers, or to organizations or entities to which they volunteer.

[ED. NOTE: Figures referenced are available from the agency.]

Stat. Auth.: ORS 433.810

Stats. Implemented: ORS 433.800 & ORS 433.830

Hist.: HD 10-1982, f. & ef. 5-25-82; HD 23-1990(Temp), f. & cert. ef. 8-15-90; OHD 7-1998, f. & cert. ef. 7-28-98; PH 10-2004, f. & cert. ef. 3-23-04

333-055-0035

Circumstances in Which Trained Persons May Administer Epinephrine or Glucagon

(1) A person who holds a current certificate pursuant to OAR 333-055-0030 may administer, in an emergency situation when a licensed health care professional is not immediately available, 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 certificate pursuant to OAR 333-055-0030 may administer, in an emergency situation involving an individual who is experiencing hypoglycemia and when a licensed health care professional is not immediately available, physician-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.

Stat. Auth.: ORS 433.810

Stats. Implemented: ORS 433.800 - 433.830

Hist.: HD 10-1982, f. & ef. 5-25-82; OHD 7-1998, f. & cert. ef. 7-28-98; PH 10-2004, f. & cert. ef. 3-23-04

The official copy of an Oregon Administrative Rule is contained in the Administrative Order filed at the Archives Division, 800 Summer St. NE, Salem, Oregon 97310. Any discrepancies with the published version are satisfied in favor of the Administrative Order. The Oregon Administrative Rules and the Oregon Bulletin are copyrighted by the Oregon Secretary of State.
