



Student Name: _____ School: _____

Local Education Agency: _____ School Year: _____

Registered Nurse/Instructor: _____

Trained Unlicensed Diabetic Assistant: _____

Emergency Glucagon Administration Protocol

This protocol addresses the training of the Unlicensed Diabetes Assistant to administer glucagon injections to students experiencing severe hypoglycemia (low blood sugar). The training session must allow enough time for the trainee (trained unlicensed diabetic assistant) to read through the protocol, observe the procedure for administering glucagon, provide a return demonstration, ask questions, and complete the evaluation tool. The trainee's past experience with giving injections and/or their current comfort level should be assessed to determine how to best demonstrate the procedure and provide a viable practice opportunity.

TWO KEY OUTCOMES:

- **The trainee will be trained to recognize signs and symptoms of severe hypoglycemia.**
- **The trainee will successfully administer-glucagon using a glucagon demonstration kit.**

Overview of Diabetes

Diabetes is a lifelong disease that affects millions of people in the United States. Diabetes affects the way the body uses food. Normally, food is digested in the stomach and intestines, changed into glucose, and then absorbed into the bloodstream. At the same time, the pancreas produces insulin, allowing glucose to enter cells which is used for energy. In persons with diabetes, this system is flawed, resulting in a build-up of glucose in the blood, and a lack of glucose entering cells.

There are two main types of diabetes:

Type 1 diabetes – most often found in children and young adults. It is caused when the pancreas does not make insulin. With too little, or no insulin, glucose cannot enter the cells of the body to be used for energy. Type 1 diabetes is usually treated with insulin injections.

Type 2 diabetes – most commonly found in adults, but has been seen increasing in children. It is caused when a person's cells do not respond to insulin or produce little insulin. Type 2 diabetes may be treated with diet, oral medication and/or insulin injections.

Both types of diabetes result in high levels of sugar in the blood. The body attempts to compensate by increasing the amount of water through the kidneys to try to "flush" the excess levels of sugar from the body. This process will result in symptoms of diabetes: increased thirst; frequent urination; increased hunger (because the body isn't getting enough energy); weight loss (because the body can't get sugar into the cells and begins to burn fat and protein for energy); irritability; flushed, dry skin; nausea and vomiting; and weakness and fatigue. Over the long term, high blood sugar levels may cause serious complications such as blindness, renal disease, and cardiovascular disease. Therefore, it is important to control blood sugar levels. Management of diabetes consists of an intricate balance between insulin, food intake, physical activity, and emotional stresses. Anything that tips this delicate balance can cause fluctuations in blood sugar.



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Hypoglycemia (low blood sugar)

Hypoglycemia, or low blood sugar, is a serious problem that can occur for people with diabetes. Anyone taking insulin or oral hypoglycemic agents can suffer from low blood sugar, requiring immediate attention. Hypoglycemia is usually mild and easily treated when symptoms are detected early. If untreated, it can become more serious and even life threatening.

Low blood sugar can occur very quickly and must be treated immediately. If the blood sugar level falls very low, a person can become unconscious and have convulsions (seizures). When blood sugar falls that low, the person must be treated promptly with the administration of glucagon. Common causes of low blood sugar include:

- Too much medication (insulin) in relationship to circulation blood glucose
- Change in meal or snack times or not enough food
- Skipping or not finishing meals or snacks
- Increased physical activity or exercise
- Illness

Symptoms of hypoglycemia can range from mild to severe, and include any or all of the following. It is important to note that symptoms of hypoglycemia may vary from person to person.

Steps for treating Severe Hypoglycemia

1. Determine if the person with diabetes is having severe symptoms of hypoglycemia. **When in doubt – treat!**
2. If the person is unwilling or unable to take oral feeding, is unresponsive or unconscious, or is experiencing respiratory distress, call appropriate emergency response system (911).
3. DO NOT attempt to give any food or liquid to a person who cannot swallow or is unconscious/unresponsive.
4. Obtain **Glucagon Emergency Kit** and prepare for glucagon injection. **Suspend or disconnect pump if applicable, and as directed by IHP and provider order.**

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Mild Symptoms	Moderate Symptoms	Severe Symptoms Glucagon Administration
• Hunger • Sweating • Feeling shaky • Feeling nervous	• Headache • Behavior changes • Blurred, impaired or double vision • Crabbiness or confusion • Drowsiness • Weakness • Difficulty talking	• Unresponsive (i.e. unable or unwilling to take oral feeding) • Loss of consciousness • Convulsions (seizure activity)

Administration of Glucagon

Glucagon is available in a prepared package which includes everything needed for administration. This package is called a **Glucagon Emergency Kit**, and can only be obtained with a physician's prescription. The **Glucagon Emergency Kit** contains a bottle of glucagon in powder form, and a syringe filled with a special diluting liquid.

The **Glucagon Emergency Kit**: The glucagon powder is not to be mixed with the diluting solution until just immediately before administration. Glucagon is administered by injection. Any unused portion should be discarded.

Preparing for Glucagon Injection

1. Remove the flip-off seal from the vial of powdered glucagon.
2. Remove the needle cover from the syringe filled with diluting fluid.
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 powder glucagon.
5. **Do not remove** needle/syringe from the vial.
6. Without removing the syringe, hold syringe and vial in one hand and gently swirl the vial until all powder is dissolved and solution is clear.

Glucagon should not be used unless the solution is clear and of a water-like consistency.

7. Slowly withdraw the correct amount of solution from the vial into the syringe as specified in the Physician Parental Authorization form in the student's Individual Health Care Plan.
8. Clean injection site on upper arm, or thigh with alcohol swab.



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9. Pinch the skin at the site of injection, hold syringe like a pen, quickly insert needle at a 90 degree angle into cleansed area and inject solution. Withdraw needle, then apply light pressure at injection site.
10. **DO NOT RECAP THE NEEDLE.** Discard into a sharps container, or if sharps container is unavailable, PLACE back into the Glucagon Emergency Kit.

Note: 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 have assistance from another caregiver.



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Care of the Person after Administration of Glucagon

1. Turn the person on his/her side. Ensure 911 has been notified. One of the most common side effects of glucagon is vomiting. Therefore, positioning on the side will prevent possible choking and allow for drainage of secretions from the mouth.
2. Give the child a fast acting sugar such as juice or cake icing when he or she is able to swallow.
3. Glucagon is a fast-acting drug, and the person will usually improve within 20 minutes- Warning: Many times after a person has received glucagon, he/she may experience nausea and vomiting.
4. Do not leave the student unattended. Remain with the student until emergency medical services arrive. Upon their arrival, give a detailed verbal report. Emergency service personnel will take over medical control.
5. It may take 20 minutes for the glucagon to work so when paramedics arrive, let them know you gave the child glucagon. The paramedics may start an IV and administer more glucose.

Link to the American Diabetic Association module and training:

<http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/school-staff-trainings/>

Watch this video for detail:

https://www.health.ny.gov/diseases/conditions/diabetes/docs/glucagon_training.pdf

Registered Nurse: _____ Date: _____

Trained UDA: _____ Date: _____