Clinical Procedures and Training Guidelines for Diabetes Management and Treatment

Introduction

In 2012, the Louisiana Legislature enacted R.S. 17:436, Act 858 to provide for the utilization of trained unlicensed diabetes care assistants in the management and treatment of students with diabetes. The use of unlicensed diabetes care assistants in the educational setting is optional. Unlicensed diabetes care assistants (UDCA) are trained school employees who have received six hours of training for the purpose of providing care and treatment for students with diabetes and have been determined competent by the school RN. Diabetes management and diabetes treatments are both complex and non-complex health procedures but due to the distinct legislation related to using unlicensed care assistants, the training component for this procedure is being addressed separately.

Unlicensed diabetes care assistants are required to participate in six hours of training, demonstrate 100% skill competency five (5) times and consent to an annual skill competency assessment. The training must be conducted by the school RN or a healthcare professional with expertise in caring for persons with diabetes in accordance with their authorized scope of practice. On-going monitoring for compliance of the treatment plan and skill level shall be conducted by the school RN.

A minimum of six hours of training must be provided in accordance with the schedule below. Documentation of instruction, competency evaluation, and ongoing supervision shall be conducted by the school RN.

Level 1 (1 hour) -Diabetes Overview and How to Recognize and Respond to an Emergency Situation

Level 2 (1 hour) -Diabetes Basics and What to Do in an Emergency Situation

Level 3 (4 hours) -General and Student- Specific Diabetes Care Tasks

LEVEL 1 Training Content

- An overview of diabetes
- Recognizing the signs and symptoms of hyperglycemia and hypoglycemia
- Emergency contacts

LEVEL 2 Training Content

- Content of level 1
- Expanded overview of diabetes (types of diabetes, blood glucose monitoring, importance of balancing insulin/medication with physical activity and nutrition)
- Procedures and brief overview of the operation of devices or equipment commonly used by student with diabetes
- Impact of hypoglycemia or hyperglycemia on learning
- Diabetes management plans, IEPs, Healthcare plans, 504 Plans
- Emergency Medical Services

LEVEL 3 Training Content

- Content of levels 1 & 2
- General training on diabetes care tasks
  - Blood glucose monitoring
  - Ketone testing
  - Insulin administration
  - Glucagon administration
  - Carbohydrate counting
- Student-specific training
  - Student's symptoms and treatment for hypoglycemia and hyperglycemia
  - Recognize complication which require emergency assistance
  - Understand proper actions if student's blood glucose levels are outside target ranges
  - Understand recommended schedules and food intake for meals and snacks
  - Understand the effect of physical activity on blood glucose levels, and the actions to take if student schedule is disrupted
  - Step by step instruction on how to perform the task using the student's equipment/supplies
  - Step by step instruction on administration of medication as ordered by physician in accordance with school district policies and the student's diabetic management and treatment plan
- Review of school district policies related to confidentiality and blood borne pathogens.

Additional training resources are referenced in Part III of this manual.

General Information - Overview of Diabetes (Type I and Type II)

Type I diabetes (Juvenile Diabetes) is usually diagnosed in children and young adults. With Type I diabetes, the pancreas does not produce insulin. Insulin's main function is to attach to sugar (glucose) floating in the blood stream and bring it into the body's cells to be used for energy. If the body does not produce insulin, then high levels of sugar or glucose will be detected in the blood stream. Insulin can be administered via a syringe directly into the body to make up for the lack of insulin that the body does not produce on its own. All type I diabetics have to manually inject insulin either by a syringe or an *insulin pump* daily or sometimes several times a day. They also must monitor their carbohydrate intake every day in order to maintain a normal blood sugar (glucose) level (70-115 mg/dl). If diet, exercise, and insulin are not managed daily, then the student can experience highs and lows in blood glucose levels (hyperglycemia/hypoglycemia).

Type II diabetes is diagnosed in children, young adults, and adults. Type II diabetes used to be only seen in adults and was called adult onset diabetes. The body in type II diabetes is still producing some insulin by the pancreas but not enough to keep the blood sugar (glucose) levels in a normal range (70-115 mg/dl). With type II diabetes, a student may take an oral hypoglycemic (diabetic pill) or may just have to watch carbohydrate intake during the day in order to keep from having high blood sugar (glucose) levels. Type II diabetics also can experience highs and lows in blood glucose levels (hyperglycemia/hypoglycemia) if diet, exercise and medications are not managed daily.

A. High and Low Blood Sugars (Hyperglycemia and Hypoglycemia)

1. *Hyperglycemia* is the medical term used by healthcare professionals for high blood sugar. Hyperglycemia occurs when a diabetic person has too little insulin produced by the body or when the body can't use insulin properly.

    a) Causes of hyperglycemia can be from a number of things such as:
    - Not taking enough insulin
    - Eating more than planned
    - Exercising less than planned
    - Stress from an illness such as a cold or flu or in girls starting their period
    - Stressors in life such as family conflicts or school problems

    b) Signs and symptoms of hyperglycemia are:
    - High blood glucose
    - High levels of sugar in the urine
    - Frequent urination
    - Increased thirst
    - Blurred vision
    - Headache
    - Nausea and vomiting
    - Increased irritability

c) If the diabetic student is symptomatic for hyperglycemia, the UDCA may check the student's blood sugar (see blood glucose monitoring) and treat according to the physician's orders for that student. Each type I diabetic student will have standing orders from their doctor that states exactly how to treat the student in the event their blood sugar is elevated. The UDCA will be trained by the school RN on the treatment plan that is specific for the diabetic student that is in their care. Any questions regarding the treatment of a student with hyperglycemia can be addressed by the school RN.

d) Hyperglycemia left untreated can lead to a medical emergency by causing a condition called *diabetic ketoacidosis (DKA)*. DKA is a life threatening condition that causes diabetic coma. When the body does not have enough insulin to bind and take the glucose into the cells for energy use, the body then will break down fats to use for energy. The breaking down of fats causes ketones to build up in the blood stream. Ketones are filtered by the kidneys but when the levels of ketones are high the kidneys cannot keep up. Thus the buildup of ketones in the blood stream will lead to diabetic coma (DKA). DKA is life-threatening and needs immediate treatment.

Signs and symptoms of DKA are:
- Nonresponsive
- Shortness of breath
- Breath has a fruity odor
- Nausea and vomiting
- Very dry mouth

If the student is found unresponsive:
- Call for help
- Call 911
- Check blood sugar and treat according to standing orders
- Start CPR if necessary
- Have someone notify parents or guardian/administrator/school RN

Document the date and time of occurrence, what was done during the emergency, and place a copy in the student's record.

2. *Hypoglycemia* is the medical term used by healthcare professionals for low blood sugar. Hypoglycemia is also known as insulin reaction and occurs when the body has too much insulin and not enough glucose for cell energy. Hypoglycemia can lead to loss of consciousness and seizures and can be life threatening. Early recognition of symptoms and prompt treatment are necessary. The student will have standing orders from their physician

on how and when to treat for hypoglycemia. The UDCA will be trained by the school RN on the treatment plan that is specific for the diabetic student that is in their care. Any questions regarding the treatment of a student with hypoglycemia can be addressed by the school RN.

a) Causes of hypoglycemia can be from:
- Missed or delayed meals or snacks
- Strenuous activity before eating meals
- Administration of too much insulin
- Increased exercise that is not the student's norm (ex. more walking at a field trip than normal)

b) Signs and symptoms of hypoglycemia:
- Sudden hunger
- Fatigue
- Irritable
- Inappropriate behavior
- Headache
- Unusual Drowsiness
- Crying
- Shakiness
- Confusion
- Loss of concentration
- Sweating
- Nervousness
- Paleness
- Nausea
- Seizures

c) Treatment for hypoglycemia is some form of sugar or simple carbohydrates (15-20 grams) such as:
- 2-3 glucose tablets (follow with water)
- 4 oz or ½ cup of fruit juice or regular soda
- 2 tablespoons of raisins
- 4 or 5 saltine crackers
- 1 tablespoon of honey or corn syrup
- One tube of cake gel or glucose gel placed in-between gums

NOTE: Foods that are high in fat as well as sugar and carbohydrates (chocolate, cookies) do not work as quickly to raise blood glucose levels.

d) Recheck blood sugar 15 to 20 minutes after treatment for hypoglycemia. If the students blood glucose is still low and is he/she still having symptoms of hypoglycemia then retreat with 15-20 grams of carbohydrates. After the student feels better, have them eat their regular meal or snack as planned to keep their blood sugar level up.

If the student is found unresponsive:

- Call for help
- Call 911
- Give Glucagon if ordered
- Start CPR if necessary
- Have someone notify parents or guardian/administrator/school RN

e) If the student is seizing:
- Clear area around student to prevent injuries
- Call for help
- Call 911
- Once it is safe and the student has stopped seizing, give Glucagon, if ordered
- Start CPR if necessary
- Have someone notify parents/guardians, an administrator, and the school RN

Document date and time of occurrence and what was done during the emergency and

NOTE: *If the blood glucose level cannot be checked, treat the student for hypoglycemia. When in doubt always treat for hypoglycemia.*