

## **Sliding Scale Insulin in Schools**

### **I. Policy**

The Nurse Practice Act defines the professional practice of nursing to include “[t]he administration of medications and treatments as prescribed or authorized by a duly licensed practitioner authorized by the laws of this state to prescribe such medications and treatments.” Section 464.003(20)(b), Florida Statutes. The practice of practical nursing is defined to include “the performance of selected acts, including the administration of treatments and medications, . . . under the direction of a registered nurse, a licensed physician, a licensed osteopathic physician, a licensed podiatric physician, or a licensed dentist.” Section 464.003(19), Florida Statutes. “Advanced or specialized nursing practice” means, in addition to the practice of professional nursing, the performance of advanced-level nursing acts....The advanced registered nurse practitioner may also perform acts of medical diagnosis and treatment, prescription, and operation....” Section 464.003(2) Florida Statutes. Based upon these requirements it is the policy of the Department of Health that School Nurses take insulin orders only from authorized licensed practitioners in accordance with Florida Statutes. These orders may be in the form of standard protocols for sliding scale adjustment based upon blood glucose testing.

### **II. Authority**

Chapter 464, F.S., Section 464.003, defines from whom a professional nurse may accept prescribed medication and treatment orders.

### **III. Supportive Data/References**

Florida Department of Health. (2003). *Nursing Guidelines for the Delegation of Care for Students with Diabetes in Florida Schools 2003*. Tallahassee, Florida: Author.

Nurse Practice Act, Chapter 464 Florida Statutes (2003). Retrieved September 3, 2010 from:

[http://www.leg.state.fl.us/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App\\_mode=Display\\_Statute&Search\\_String=464.003&URL=0400-0499/0464/Sections/0464.003.html](http://www.leg.state.fl.us/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App_mode=Display_Statute&Search_String=464.003&URL=0400-0499/0464/Sections/0464.003.html)

Schwab, N. & Gelfman, M. (Eds.). (2005). *Legal issues in school health services: A resource for school administrators, school attorneys, school nurses*. Lincoln, NE: Authors Choice Press.

### **IV. Signature Block with Effective Date**

Signature on file in the School Health Services Program Office.

Ana M. Viamonte Ros, M.D., M.P.H. Date: November 2010  
State Surgeon General

## **V. Definitions**

**Diabetic Ketoacidosis (DKA):** Severe, out-of-control high blood glucose levels that need emergency treatment. DKA happens when there is insufficient insulin to convert blood glucose into useable energy. The body responds by using stored fat for energy, which causes ketone bodies and acids to build up in the blood. Ketoacidosis may be related to illness, stress or taking too little insulin. The signs and symptoms include nausea and vomiting, stomach pain, deep, rapid breathing, flushed face, rapid weak pulse, dry skin and a fruity breath odor. Fluids and insulin must be given quickly since ketoacidosis can lead to coma and even death.

**Duly Licensed Practitioner:** A practitioner authorized by the state of Florida to prescribe medicines and treatments in accordance with s. 456 F.S.

**Advanced Registered Nurse Practitioner** means any person licensed in this state to practice professional nursing and certified in advanced or specialized nursing practice, including certified registered nurse anesthetists, certified nurse midwives, and nurse practitioners in accordance with s. 464.003 F.S.

**Hyperglycemia:** A condition in which blood glucose levels are elevated, generally 240 mg/dl or higher. The signs and symptoms may include the following:

**Mild Hyperglycemia** - blood glucose usually over 240, thirst, frequent urination, fatigue/sleepiness, increased hunger, loss of concentration, blurred vision.

**Moderate Hyperglycemia** - blood glucose usually over 240, sweet breath, dry mouth, nausea, stomach cramps, vomiting, urine ketones, (moderate-large).

**Severe Hyperglycemia** - blood glucose usually over 240, labored breathing, very weak, confused, unconscious, urine ketones, (moderate-large)

**Medical Management Plan:** Medical management plan shall mean written authorization from the healthcare provider to meet the medical needs of the student with a chronic health condition in the school setting and during school-sponsored activities.

**Individualized Health Care Plan (IHCP):** A nursing care plan developed by the school nurse in conjunction with the parents, family, student and others as necessary, describing how health related services will be provided to specific students in the school setting.

**Emergency Action Plan (EAP):** Emergency Action Plan (EAP) is a child-specific action plan that is developed for an anticipated health emergency in the school setting. The EAP is a component of the IHCP developed in accordance with Section 1006.062 F.S., and Rule 64F-6.004, F.A.C..

**Child Specific Training:** Authorization is given in [s. 1006.062, F.S.](#) for unlicensed assistive personnel to perform health-related services upon successful completion of child-specific training by a registered nurse, advanced registered nurse practitioner, medical physician, osteopathic physician, or physician assistant. Such procedures shall be monitored periodically by the licensed professional.

**Insulin:** A hormone secreted by the islet cells in the pancreas that allows the body's cells to absorb glucose for energy. It is used as a medication when the body does not make enough insulin to maintain proper blood glucose levels.

**School Nurse:** A professional nurse registered and licensed to practice in Florida who is employed by the county health department, local school district or contracted by the county health department or local school district from a community based agency. The school nurse may be assigned to one or more schools and provides leadership and services consistent with the Nurse Practice Act (Chapter 464 F.S.) and the School Health Services Program (s. 381.0056. F.S.).

**Sliding Scale Insulin Order:** A medical order for adjusting the insulin dose on the basis of blood glucose monitoring and/or carbohydrate consumption. It is sometimes referred to as supplemental insulin or a bolus dose.

## **VI. Protocol**

Each employee of the Department of Health, School Health Services Program shall be given a reasonable opportunity to review this policy through appropriate posting and distribution. Each employee shall also be given the opportunity to discuss this policy with a supervisor, trainer, School Health Services Program liaison or other representative, and to ask questions regarding school health medication orders in general.

## **VII. Procedure**

### **A. Prevention**

Effective communication is essential for collaboration and cooperation. Explain to the practitioner and parents why the school nurse requires an insulin sliding scale order. The order must be in writing, signed by the licensed practitioner and placed in the child's school health medication file. The order for sliding scale may be included on the Medical Management Plan. The practitioner may fax the orders to the school nurse. For the student's safety and effective care, an Individual Health Care Plan (IHCP) and Emergency Action Plan (EAP) must be developed that delineates the role of parents, school nurse, student, classroom teachers, school staff and auxiliary school personnel. The *Nursing Guidelines for the Delegation of Care for Students with Diabetes in Florida Schools 2003* is a recommended tool to use in this process.

### **B. Intervention**

- a. If a child requiring insulin administration during the school day presents with inappropriate orders, notify the parent of the need for written practitioner sliding scale insulin orders and that neither school nurses nor their delegates can give any insulin to a student without the required written and signed order. Parents will need to make alternative arrangements in the interim.
- b. Until the nurse receives the written sliding scale orders, the parent or their representative may come to the school to administer the insulin.
- c. The school nurse must notify the school health services program supervisor and principal or their designee immediately if unable to obtain an acceptable, legal insulin order. If the supervisor is unable to resolve this problem, the supervisor will notify the nursing administrator. If the nursing administrator is unable to resolve this problem, the nursing administrator will notify the health department director or medical director to intervene. If the health department medical director is unable to resolve this problem, the director or medical director will notify the Deputy State Health Officer to intervene.
- d. In the event that a child without appropriate orders displays signs and symptoms of hyperglycemia, follow emergency care protocol according to the *Nursing Guidelines for the Delegation of Care for Students with Diabetes in Florida Schools 2003*. Because paraprofessionals cannot make a nursing assessment, notification of the parent, principal and school nurse is important.
- e. If a student's condition requires emergency intervention, contact 911 in accordance with the school's emergency procedure.

### **C. Documentation**

- a. Document the student's health status, nursing interventions, services, contact with parents, providers and supervisor, referrals, medical or medicine orders, delegation of care, child specific training, and education, in the student's individual health record.
- b. If necessary, file an incident report as a medication error, if the insulin is not given or is not given within the permitted time allowance, with the school's safety committee.

### **D. Follow up**

- a) Update the IHCP as necessary.

### **V. Distribution List**

County Health Department School Health Services Program Coordinators  
County Health Department Nursing Directors  
County Health Department Directors  
Department of Education Nurse Liaison  
Local School District School Health Coordinators  
School Health Services Program Library, hard copy  
Web Manager, electronic copy



## State of Florida Physician Insulin Orders

\_\_\_\_\_ County School Health Services Program

Date: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

Order Expiration Date: \_\_\_\_\_ (not to exceed one year)

Type of Insulin: \_\_\_\_\_ Target Blood Sugar: \_\_\_\_\_mg/dl

### Correction Factor/Insulin Sensitivity:

1 unit of insulin for every \_\_\_\_\_mg/dl (points) that blood sugar is **above** or **below** target.

- Range permitted by physician order: From 1 unit of insulin for every \_\_\_\_\_mg/dl up to 1 unit of insulin for every \_\_\_\_\_mg/dl above or below blood sugar target.

### Insulin to Carbohydrate ratio:

1 unit of insulin for every \_\_\_\_\_ grams of carbohydrate eaten.

- Range permitted by physician order: From 1 unit of insulin for every \_\_\_\_\_grams of carbohydrate up to 1 unit of insulin for every \_\_\_\_\_ grams of carbohydrate eaten.

Physician Name: \_\_\_\_\_

Physician Signature: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Reviewed 09/10

Form Number DH3221, 6/04  
Stock Number 5744-000-322



# INSULIN CALCULATION INSTRUCTIONS (Reviewed 09/10)

## 1. TO CALCULATE INSULIN FOR CORRECTION FACTOR:

Use the following formula:

Blood sugar value, **minus** Goal Blood Sugar = \_\_\_\_\_, **divided by** Correction Factor.

The result is the **# of units of insulin for blood sugar correction**. \*This can be a **NEGATIVE number!**

## 2. TO CALCULATE INSULIN FOR FOOD: (insulin to carbohydrate ratio)

a. Determine total number of grams of carbohydrates eaten.

b. Use doctor's order for Carbohydrate ratio: 1 unit of insulin for every \_\_\_\_\_ gm of carbohydrate eaten.

c. Use the following formula:

Divide # of grams of carbohydrates eaten by carbohydrate ratio.

The result is the **# of units of insulin needed for food**.

## 3. TO CALCULATE TOTAL UNITS OF INSULIN

# of units insulin needed for food

+ # of units insulin needed for Blood Sugar (\*This can be a negative number.)

= Total # of units of insulin

**\*If the # of units of insulin needed for blood sugar is negative, then the TOTAL # of units of insulin will be SMALLER than the # of units of insulin needed for food.**

EXAMPLES:

Blood sugar goal: 150 mg/dl

Correction factor or Insulin Sensitivity: 100

Carbohydrate ratio: 1:20

### DEFINITIONS:

**Goal Blood Sugar:** = Target blood sugar (mg/dl)

**Correction Factor:** = 1 unit of insulin for every \_\_\_\_\_ mg/dl (points) that the blood sugar is above or below \_\_\_\_\_ (Target Blood Sugar).

**Insulin to Carbohydrate Ratio:** = 1 unit of insulin for every \_\_\_\_\_ grams of carbohydrates eaten

1. Blood sugar is 220 and 40 gm of carbs are eaten.

$220 - 150 = 70 \div 100 = \underline{.7}$  units

$40 \text{ gm of carbs} \div 20 = \underline{2}$  units

$.7 + 2 = \underline{2.7}$  units

Round up to **3 units** total insulin needed

2. Blood sugar is 129 and 60 gms of carbs are eaten.

$129 - 150 = -21 \div 100 = \underline{-.21}$  units

$60 \text{ gm of carbs} \div 20 = \underline{3}$  units

$-.21 + 3 = \underline{2.79}$  units

Round up to **3 units** total insulin needed

Adopted from Leon County School Board 6/04, Reviewed 09/10