

Vision: To be the **Healthiest**
State in the Nation



**Guidelines for the Care and Delegation of Care for Students
with Diabetes in Florida Schools**
January 2015

Mission:

To protect, promote, &
improve the health of all
people in Florida through
integrated state, county, &
community efforts.



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Section I: Introduction to Guidelines for the Care and Delegation of Care for Students with Diabetes in Florida Schools

Purpose and Background

The purpose of this document is to provide guidelines for registered professional school nurses (hereinafter referred to as school nurse) and other assistive personnel working for the local departments of health and local school districts to help ensure that students with diabetes are provided a safe learning environment and are fully integrated into school activities in accordance with federal and state laws.

This document is designed to provide basic information about diabetes, describe the medical and legal requirements for meeting the needs of students with diabetes in school, and provide guidelines for delegation to unlicensed assistive personnel (UAP). These guidelines will also assist the school nurse in developing the plan of care in cooperation with the healthcare provider, parents/guardian, student, and designated school staff. To ensure the safety of the student, advanced planning and preparation are required to identify and train individuals in the schools who are willing and available to provide the health care services these students may need while in school, participating in school-sponsored activities, or in transit to or from school or school-sponsored activities. These guidelines do not negate the need for calling 911 in accordance with local policies when the student's condition is life-threatening.

These guidelines represent the outcome of many meetings, current literature review, and the collection of documents from local school districts, local departments of health, and other state agencies. They do not represent the specific opinion of any individual or institution. The guidelines are not intended to replace clinical judgment or individualized consultation with healthcare providers, nor are they intended to be used as fixed protocols. These guidelines are designed to identify best practices for the management of the students with diabetes while they are under the care and supervision of the school.

Additionally, position statements and other publications developed by the National Association of School Nurses (NASN), the American School Health Association, the American Public Health Association's Public Health Nursing Section, the National Association of State School Nurse Consultants, the American Nurses Association (ANA), and others, when specific to aspects of school nursing practice, may be regarded as guidelines.

The Florida School Health Services Act, section [\(s.\) 381.0056, Florida Statutes \(F.S.\)](#), authorizes the Florida Department of Health (FDOH), in cooperation with the Florida Department of Education (FDOE), to supervise the administration of the School Health Services Program in Florida. A school health care team led by a school nurse provides student health services. The school nurse is responsible for the onsite management of illness or injury pending the students return to the classroom or release to parent, guardian, designated friend, or designated healthcare provider. The school nurse is responsible for the development of the student's individualized healthcare plan (IHP) (see Appendix A: Glossary, for definitions of school nurse and IHP as used in this document). Although the Florida School Health Services Act addresses the need to plan for and respond to any health care problem that needs management in the school setting, these guidelines were developed specifically to address the management of students with diabetes.

The National Diabetes Education Program (NDEP) is a partnership of the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and more than 200 partner organizations. The NDEP produced an updated edition of *Helping the Student with Diabetes Succeed: A Guide for School Personnel* (NDEP School Guide, 2012). This comprehensive resource guide has been developed to help students with diabetes; their health care team, school staff, and parents work together to provide optimal diabetes management in the school setting.

According to the American Diabetes Association (ADA), appropriate diabetes care in the school is necessary to promote the student's long-term well being and optimal academic performance. Even mild low blood glucose levels can lead to immediate consequences in the classroom such as a decrease in cognition, lack of attention to detail, and difficulty with decision-making. Extremely low blood glucose levels can cause unconsciousness or even death. High blood glucose levels can contribute to long-term complications such as damage to the eyes, kidneys, nerves, and blood vessels (ADA, 2012). For students with type 1 diabetes, severe lack of insulin or missed insulin doses can lead to diabetic ketoacidosis (DKA), an acute emergency complication that may lead to coma and death if untreated.

While the need for student health services in schools is steadily growing, the supply of school nurses remains static or in some areas, is decreasing. To meet the health care needs of students with diabetes, UAP must be involved. For the purpose of this document, UAP, non-medical assistive personnel, school personnel, and paraprofessionals are considered synonymous terms (see Appendix A: Glossary). It is imperative that the UAP have both general and student-specific training in accordance with [s. 1006.062, F.S.](#) When UAP carry out health care tasks, under no circumstances should they make independent decisions about the daily, ongoing management of a student with diabetes (NDEP, 2012). Both the school nurse and the UAP follow the Diabetes Medical Management Plan (DMMP) when caring for a student with diabetes. If questions or concerns arise about the contents of the DMMP, the school nurse should promptly address them with the parent(s) and healthcare provider.

The DMMP is directed at controlling diabetes by balancing exercise, nutrition, and insulin and/or other diabetes medications. Optimal blood glucose control promotes normal growth and development and prevents glucose levels that are too high or too low. Students who are able to control their diabetes by maintaining normal or close to normal blood glucose levels, lower their risk of complications and enjoy a better quality of life. The school nurse develops the IHP consistent with the DMMP. The IHP should include an emergency care plan (ECP) with student-specific signs and symptoms and treatment of hypoglycemia and hyperglycemia (low and high blood glucose levels respectively) based on the DMMP.

The DMMP is developed by the healthcare provider in consultation with the student's parents/guardian and it is signed by the healthcare provider, the parents/guardian, and the school nurse (NASN, 2012).

In accordance with the NDEP School Guide (2012), all school personnel should have Level 1 diabetes awareness management training that provides a basic understanding of diabetes. Classroom teachers and school personnel who have responsibility for students with diabetes should receive Level 1 training plus additional Level 2 training to carry out their individual roles and responsibilities. School personnel who will perform or assist the student with diabetes care should have Level 3 training that is provided by the school nurse or a certified diabetes educator (See Section 8, Recommendations for Staff Education).

Diabetes

Diabetes is one of the most common chronic diseases of childhood. The CDC (2011) estimates that 215,000 people younger than age 20 have diabetes (type 1 or type 2), which represents 0.26% of all people in this age group. The 2011-2012 School Health Summaries indicate that more than 7,008 students were reported to have diabetes (FDOH, 2013). The incidence of diabetes continues to increase with more cases of type 1 and type 2 diabetes being diagnosed among children and adolescents each year. The incidence of type 1 diabetes worldwide is growing most rapidly in children under five years of age.

Diabetes is a serious chronic disease in which blood glucose (sugar) levels are above normal. The key to effective diabetes management is to keep blood glucose levels under control 24 hours a day, seven days a week.

Type 1 diabetes, formerly called juvenile diabetes, is the most commonly diagnosed metabolic chronic disease in childhood. Type 1 diabetes is an autoimmune disorder in which the immune system attacks the insulin-producing cells in the pancreas. The body has no ability to produce insulin and people with type 1 diabetes require total insulin replacement to remain healthy. Blood glucose is controlled with the administration of insulin in conjunction with blood glucose monitoring, exercise, and food intake.

Type 2 diabetes, formerly called adult-onset diabetes, is a progressive chronic disease that usually begins with insulin resistance. Over time, the pancreas may lose its ability to secrete enough insulin in response to food intake, and blood glucose levels rise above the normal range. Managing type 2 diabetes includes making healthy food choices and participating in regular physical activity. Medical management may include insulin, other injectable medications, and/or oral medications. There are temporary forms of diabetes, including gestational diabetes, which occurs during pregnancy. Management can vary from nutrition only, to oral diabetic medication, to insulin or specific combinations.

Gestational Diabetes

Gestational diabetes¹ results from pregnancy hormones that cause the body to become resistant to its own insulin.

- Gestational diabetes usually occurs between the 24th and 28th week of pregnancy.
- At the end of the pregnancy, most women revert to normal blood glucoses. However, 30-50% of women will have gestational diabetes with subsequent pregnancies. There is an increased risk for developing type 2 diabetes for these women later in life.

Self-monitoring of gestational diabetes includes fasting urine ketones and blood glucose checks:

- 4 times/day: before breakfast and 1 hour post-meals
- Pre-meal/1 hour post-meal monitoring necessary for patients with pre-existing diabetes
- Nocturnal monitoring (~3 AM) may be necessary on intermittent basis.

Generally there are no symptoms; gestational diabetes is diagnosed with a routine screening test done at the prenatal visits (see Appendix F: Diabetes Management During Pregnancy).

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Section II: Major Factors in Maintaining Health

Maintaining health for the student with diabetes requires a careful balance of several factors including medication, nutrition, and physical activity. Blood glucose monitoring is necessary for most students with diabetes to maintain that balance while at school, participating in school-sponsored activities, and in transit to or from school or school-sponsored activities. In preparing the student's IHP the prescribed medication, food plan, physical activity, and blood glucose monitoring should be addressed by the registered professional school nurse (school nurse). The goal is to provide full access to all school-sponsored activities in conjunction with optimizing student safety.

Diabetes Medications

Diabetes medications fall into four groups: insulins, oral diabetes agents (pills), glucagon, and other injectables. The most common time for a student to take diabetes medication at school is lunchtime. When a child must eat breakfast at school, the need for taking additional medication at that time will need to be accommodated. Medication policies should reflect the same caution for administering other diabetic medications as with administering insulin. All diabetes medications and supplies must be readily available for the student's care (see Appendix E: Medications Used to Treat/Prevent High Blood Glucose).

Insulins

Insulin therapy is the mainstay of diabetes management for all students with type 1 diabetes. Some students with type 2 diabetes will require insulin therapy at some point in their treatment. Insulin therapy includes a coordinated combination of different types of insulin to achieve target blood glucose levels (see Appendix E: Storing Insulin at Room Temperature).

Other Injectables

In addition to insulin, there are injectables that are slowly being introduced into pediatric diabetes therapy such as:

- Exentide (brand name Byetta),
- Exentide Extended Release (brand name Bydureon),
- Liraglutide (brand name Victoza), and
- Pramlintide (brand name Symlin).

Glucagon

Glucagon is often prescribed as an emergency injection for hypoglycemia when the student has lost consciousness, is unable to take liquid or food by mouth, or has had a seizure. Glucagon is a hormone that helps the liver release glucose, thus increasing the level of glucose in the blood. Since untreated severe hypoglycemia can lead to permanent brain damage or even death, the need for glucagon is considered a medical emergency. If the student's healthcare provider prescribes glucagon, the school nurse will include that information in the IHP and ECP and provide training for two or more UAP at each school site to administer this medication and ensure that at least one trained personnel is always on site to administer glucagon in an emergency. Authority to allow UAP to administer emergency injectable medication is provided in [s. 1006.062\(4\)\(d\), F.S.](#)

Oral Diabetes Agents

There are three classes of oral diabetes agents used in varying degrees in the pediatric population: insulin sensitizers (typically Metformin), incretin enhancers, and insulin secretion stimulators. Usually, the student would take these medications before breakfast and/or dinner. However, in the case of the insulin secretion stimulators, the student may also need to take a dose before lunch. Because drugs in this class stimulate the release of insulin, it is possible for the student to have hypoglycemic (low blood glucose) episodes.

Recently, the American Academy of Pediatrics (AAP) has advocated the use of Metformin as first line therapy for all children with type 2 diabetes who do not initially require insulin due to high glucose levels (Copeland, K., et al., 2013). The AAP also recommends that once blood glucose levels have stabilized with insulin, that Metformin be added, potentially weaning the child from insulin therapy (Copeland, K. et al., 2013, p. 370-371). Generally, Metformin is administered at home. However, the DMMP may indicate that Metformin should be administered at school.

In cases of type 2 diabetes, the student's DMMP will include meal planning, exercise, and weight management. However, recent studies have shown that these measures alone rarely control blood glucose levels to target; hence medications may be required.

Nutrition and Meal Planning

Meal planning is an important component in the management of diabetes. The dietary considerations require adequate caloric and nutritional intake for growth and development and a balance of food with insulin and activity. A registered dietitian experienced in nutrition therapy for children with diabetes should develop the student's meal plan in collaboration with the healthcare provider (ADA, 2013 p. S40; AAP, p. 376). The meal plan should reflect consideration of the developmental needs of the student as well as food preferences, cultural influences, family eating patterns, and other medical conditions.

Many students with type 1 diabetes are now treated with some form of basal/bolus therapy. With basal/bolus therapy, “peakless” basal insulins are used in combination with rapid-acting insulins at meal times. This affords more flexibility in scheduling meals and snacks than with peaking insulins. The dose of rapid-acting insulin may be based on a correction scale that presumes a fixed amount of carbohydrate eaten. Many DMMPs will provide for variability in the amount of carbohydrates consumed by allowing the student to adjust the amount of rapid-acting insulin accordingly, by using a mathematical formula either independently or with help from an adult.

For students who wear insulin pumps (another basal/bolus modality), the pump calculates the insulin dose after the carbohydrate intake is entered by the user. Students on basal/bolus therapy may not need to have snacks routinely because of the lack of an insulin peak. However, students who are treated with peaking insulins will require snacks to avoid hypoglycemia.

One of the biggest challenges in school meal/snack planning is appropriate spacing of carbohydrate intake relative to the next blood glucose check. If food intake occurs less than two-to-three hours before the next blood glucose check, the result may be temporarily elevated, leading to an inappropriate pre-meal insulin dose. Collaboration between the parents, school nurse, school personnel, and diabetes care team will help optimize meal and snack timing.

The availability of accurate carbohydrate content information for food eaten at school (whether prepared at school or at home) is essential for proper blood glucose control. If substitutions must be made, the nutrition information should be available.

For a student with type 2 diabetes, other nutritional considerations (fat content, sodium content) may take on added importance as these students may also have elevated cholesterol/triglyceride levels or elevated blood pressure.

Students with diabetes may participate in school meal programs and school parties. There are no foods, even desserts, which cannot be worked into the food plan. Families can review the published school menu ahead of time and plan, with their children, to make the best choices or any modifications necessary to meet their healthcare provider’s plan of care. School meal programs should support all students, including those with type 1 and type 2 diabetes, in achieving and maintaining a healthy body weight by providing appropriate food choices, including appealing low-fat items. Parents may also provide meals from home and attach the carbohydrate content to assist school nurses and UAP in the calculation for proper insulin coverage. The school nurse should list any specific nutritional requirements or restrictions as well as the timing of meals and snacks in the student’s IHP.

Physical Activity

Participation in physical activity and school sports helps students feel healthier, improve their self-esteem, and foster a sense of empowerment. Students with diabetes are no exception. The benefits of physical activity include cardiovascular fitness, long-term weight control, and social interaction. In addition, physical activity can help lower blood glucose levels.

General physical activity guidelines include:

- Drinking lots of sugar-free fluids, especially water.
- Keeping rapid-acting carbohydrate sources available.
- Monitoring blood glucose levels before, during, and after physical activity, as ordered by the healthcare provider.
- Wearing diabetes identification tag or jewelry.
- Monitoring low blood glucose levels carefully and reporting any problems to an adult immediately.
- Addressing low blood glucose levels promptly.

The school nurse should list any specific exercise or physical activity guidance in the student's IHP as indicated in the DMMP.

Blood Glucose Monitoring

Diabetes healthcare providers generally recommend that students check their blood glucose during the school day, usually before eating snacks or lunch, before physical activity, or when there are symptoms of high or low blood glucose. Students should be allowed to check their blood glucose levels and respond to the results in the classroom, at other campus locations, during school-sponsored activities, and during field trips. The experience is less stigmatizing, and blood glucose monitoring loses its mystery, when handled as a regular occurrence. Testing equipment should be kept/maintained in a secure location that is readily available at all times. Taking immediate action is important so that the symptoms do not get worse and the student does not miss classroom time.

In the event of hypoglycemia, blood glucose testing should take place at the scene of the hypoglycemic episode in order to guide prompt appropriate treatment and prevent further lowering of blood glucose and possible injury.

If deemed capable and responsible by the diabetes care team and school nurse, the student may carry a blood glucose monitor and supplies with them in accordance with [s. 1002.20\(3\)\(j\), F.S.](#), and [Rule 6A-6.0253, Florida Administrative Code \(F.A.C.\)](#). If the student requires assistance to monitor blood glucose, privacy should be available if requested by the student or parent/guardian. Assistance or supervision with this procedure will be necessary until the healthcare provider, parent, and the school nurse

determine the student is ready to monitor blood glucose independently within the school setting and whenever a low blood glucose level is suspected. The school nurse will document the need for assistance and/or supervision of blood glucose monitoring in the student's IHP and can delegate UAP to assist with or perform blood glucose monitoring for a student as long as child-specific training has been provided by the school nurse or other medically licensed persons in accordance with [s. 1006.062\(4\)\(c\), F.S.](#) For a student not yet ready for self-management, the school nurse should list any specific information on when, where, and how blood glucose monitoring is performed in the student's IHP. Because there are numerous brands of glucose monitors available, each with specific features, it is recommended that directions for using a particular monitor be copied and attached to the IHP.

In the event of hypoglycemia, even the most self-sufficient of students may be incapable of checking the blood glucose without help due to the possible effects of hypoglycemia on the brain/nervous system. In such a case, a trained school caregiver must be quickly available to provide assistance.

Continuous Glucose Monitoring

Some students may wear a device called a continuous glucose monitor (CGM). This device monitors glucose level nearly continuously. CGMs provide a display of the current glucose level along with various alerts triggered by high, low, or rapidly changing glucose measurements. CGMs use a sensor to monitor glucose levels.

While CGMs can be very useful tools, especially in children who are unable to sense when their blood glucose is low, there is not always a perfect correlation between measuring the blood glucose level and the CGM value because the CGM lags behind approximately 10-15 minutes during episodes of rapid change. Therefore, CGM values alone cannot be used to make treatment decisions such as insulin dosing.

The A1C test is the primary blood test that provides information about a person's average level of blood sugar, also called plasma/blood glucose. High A1C levels indicate poor control of blood glucose. The A1C test is routinely used to gauge how well diabetes is being managed. The A1C test result reflects the average blood glucose level over the past two to three months. The student's parent(s), healthcare provider, and school nurse determine blood glucose goals. The following two tables published by the American Diabetes Association (2014) show A1C levels related to average blood glucose and the suggested A1C and blood glucose goals for type 1 diabetes based on age group.

National Standards for Diabetes Control in Children

Plasma Blood Glucose and A1C Goals for Type 1 Diabetes By Age Group²

Age Range	Plasma Glucose Goal Range (mg/dl)		A1C*	Rationale
	Before Meals	Bedtime/overnight		
Toddlers and preschoolers (0-6yrs)	100–180	110–200	Below 8.5%	<ul style="list-style-type: none"> Vulnerability to hypoglycemia Insulin sensitivity Unpredictability in dietary intake and physical activity A lower goal (below 8.0%) is reasonable if it can be achieved without excessive hypoglycemia
School age (6-12 yrs)	90–180	100–180	Below 8%	<ul style="list-style-type: none"> Vulnerability to hypoglycemia A lower goal (below 7.5%) is reasonable if it can be achieved without excessive hypoglycemia
Teens and young adults (13-19 yrs)	90–130	90–150	Below 7.5%	<ul style="list-style-type: none"> A lower goal (below 7.5%) is reasonable if it can be achieved without excessive hypoglycemia
Key concepts in setting glycemic goals:				
<ul style="list-style-type: none"> Goals should be individualized and lower goals may be reasonable based on benefit-risk assessment. Blood glucose goals should be modified in children with frequent hypoglycemia or hyperglycemia unawareness. Postprandial blood glucose values should be measured when there is a discrepancy between preprandial blood glucose values and A1C levels and to help assess glycemia in those on basal-bolus regimes. 				

*It is reasonable to lower the A1c by 0.5% if it can be done without frequent or severely low blood glucose.

Correlation of A1C with Estimated Average Glucose (eAG)³

A1C (%)**	eAG (mg/dl)
6	126
6.5	140
7	154
7.5	169
8	183
8.5	197
9	212
9.5	226
10	240
11	269
12	298

**For children with Type 2 diabetes, a goal of <7% is ideal but should be individualized (AAP, P. 374)

The table below matches the A1C to an estimated average blood glucose level (eAG).

An eAG↔A1C calculate or can be found online at <http://professional.diabetes.org/GlucoseCalculator.aspx>.

² American Diabetes Association. Standards of medical care in diabetes-2014. *Diabetes Care*.:vol. 37 no. Supplement 1 p.S51.

³ American Diabetes Association. Standards of medical care in diabetes-2014. *Diabetes Care*.:vol. 37 no. Supplement 1 p.S23.

Section III: Legal Aspects to Consider

The Nurse Practice Act (2013), [Chapter 464 F.S.](#), regulates the practice of registered professional school nurses in Florida (school nurses). In [s. 464.003\(20\), F.S.](#), the “practice of professional nursing” is defined as:

The performance of those acts requiring substantial specialized knowledge, judgment, and nursing skill based upon applied principles of psychological, biological, physical, and social sciences, which shall include, but not be limited to:

- a. The observation, assessment, nursing diagnosis, planning, intervention, and evaluation of care; health teaching and counseling of the ill, injured, or infirm; and the promotion of wellness, maintenance of health, and prevention of illness of others.
- b. The 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.
- c. The supervision and teaching of other personnel in the theory and the performance of any of the above acts.

Further clarification of the school nurse’s role in delegation and supervision is provided in [Chapter 64B9-14, F.A.C., Delegation to Unlicensed Assistive Personnel](#). This chapter provides definitions for delegation, specifies key factors to consider for delegation of tasks or activities, and stipulates delegation of tasks that are prohibited.

[Section 1006.062, F.S.](#), governs the general administration of medication and provision of medical services in the school setting. In addition, [s. 1002.20\(3\)\(j\), F.S.](#), states:

A school district may not restrict the assignment of a student who has diabetes to a particular school on the basis that the student has diabetes, that the school does not have a full-time school nurse, or that the school does not have trained diabetes personnel. Students with diabetes whose parent and physician provide their written authorization to the school principal may carry diabetic supplies and equipment on their person and attend to the management and care of their diabetes while in school, participating in school-sponsored activities, or in transit to school or school-sponsored activities to the extent authorized by the parent and physician and within the parameters set forth by State Board of Education rule. The written authorization shall identify the diabetic supplies and equipment that the student is authorized to carry and shall describe the activities the child is capable of performing without assistance, such as performing blood-glucose level checks and urine ketone testing, administering insulin through the insulin-delivery system used by the student, and treating hypoglycemia and hyperglycemia...

[Rule 6A-6.0253, F.A.C.](#), provides for the implementation of diabetes management provisions while in school, participating in school-sponsored activities, or in transit to or from school or school-sponsored activities.

Several federal laws may apply to students with diabetes:

- The [Americans with Disabilities Act Amendments Act of 2008 \(ADAAA\)](#) includes language that specifically identifies limitations in endocrine function such as diabetes.
- When evaluating a student with diabetes to determine whether the student is disabled under [Section 504 of the Rehabilitation Act of 1973](#) (Section 504), the Section 504 team must determine whether the student would be substantially limited by his or her impairment without the provision of services listed in the student's IHP or any other mitigating measure used by the student. The interventions and activities in the IHP should be reflected in the student's Section 504 Plan. The extent of the school district's obligation to make reasonable modifications or to provide accommodations requires a case-by-case assessment. The [Individual Healthcare Plans and Section 504 White Paper \(2012\)](#) provides technical assistance to guide Section 504 school teams in problem solving to determine what is required for students with IHPs as required by the ADAAA.
- [Individuals with Disabilities Education Act \(IDEA\) 2004](#). If the district determines that the student with diabetes is eligible under IDEA, the district documents the related aids and services in the student's individualized education plan (IEP). The interventions and activities in the IHP should be reflected in the student's IEP in order to document the health care services the student will receive while at school, participating in school-sponsored activities, or in transit to or from school or school-sponsored activities.
- [Family Educational Rights and Privacy Act \(FERPA\) and Health Insurance Portability and Accountability Act \(HIPAA\)](#). The U.S. Department of Health and Human Services and the U.S. Department of Education Frequently Asked Questions and Answers document: *Joint Guidance on the Application of the Family Educational Rights and Privacy Act (FERPA) And the Health Insurance Portability and Accountability Act of 1996 (HIPAA) To Student Health Records (2008)* explains the relationship between FERPA and HIPAA Privacy Rule and how these two laws apply to records maintained on students.

Section IV: Criteria for Safe Delegation

The safety of the student and the broader school community is the primary consideration in the delivery of all school health services. The Florida Department of Health (FDOH) School Health Program recommends that special care needs to be taken when delegating diabetes care to UAP. The registered professional school nurse (school nurse) is responsible for training and monitoring UAP who perform these services in accordance with [s.1006.062, F.S.](#)

Unsafe Delegation

In keeping with the Nurse Practice Act (Chapter 464 F.S.), the delegation rule ([Chapter 64B9-14 F.A.C.](#)), and delegation position statement from the [National Association of School Nurses](#), delegating diabetes-related tasks to UAP in the following circumstances would be considered unsafe, and should not be done:

- When students are newly diagnosed with diabetes and the DMMP and the IHP have not been written or approved by the healthcare provider and parents/guardian.
- When the student is medically fragile with health complications or multiple health problems that require nursing assessments before performing any authorized task.
- When the student has a history of non-compliance with the treatment plan, school health guidelines, or safety precautions.
- When the UAP has not been trained or the UAP has not demonstrated competence in the assigned activity/task.
- When the student who has been authorized to function independently by the healthcare provider cannot consistently demonstrate competence in diabetes related tasks in the school setting.*

* In this case, the school nurse should consult with the diabetes care provider and parents/guardians for further direction and potentially a modification of the student's DMMP. During this time, the student should continue to receive care as indicated in the DMMP.

Safe Delegation

The following criteria needs to be addressed to determine when and to whom to delegate diabetes-related health care services:

- The school nurse has received a completed DMMP that contains specific written instructions for dosing of insulin and any other prescribed diabetes medication instructions from the healthcare provider. Insulin should be administered using the modality deemed appropriate by the prescribing healthcare provider in collaboration with the student and parent/guardian. However, the preferred method of insulin administration is by pen or pump.

- An IHP/ECP written by the school nurse and approved by the parents/guardian is in place. A copy of the IHP may be sent to the student's healthcare provider.
- The school nurse has arranged to be available for, at a minimum, indirect supervision (as defined in [Rule 64B9-14.001, F.A.C.](#)), ongoing supervision, monitoring, and consultation.
- The delegated UAP has completed Levels 1, 2, and 3 training for student-specific diabetes care tasks.
- The delegated UAP has demonstrated competence in student-specific blood glucose monitoring; carbohydrate counting; insulin dose calculation, and administration; and reporting to the school nurse.
- The delegated UAP has demonstrated competence in recognizing the signs and symptoms of hypo- and hyperglycemia and in responding with the student-specific interventions, including, if necessary, glucagon injection.
- The delegated UAP agrees to provide and has a history of only providing health services that are within the scope of the delegated tasks for which he/she has been trained.
- The delegated UAP is certified in cardiopulmonary resuscitation (CPR) and first aid in accordance with [Rule 64F-6.004, F.A.C.](#)
- The parents/guardian have provided the school and school nurse with the necessary equipment and supplies to monitor blood glucose and administer insulin or other diabetes medication, as well as any snacks or medications to be used to regulate blood glucose levels.
- The parents/guardian have provided the school and/or school nurse with the required diabetes history information, authorization forms, and emergency information specific to the needs of the student.
- The parents/guardian have participated in an annual planning meeting with the school nurse and school staff, and have contributed to the approved IHP.
- The parents/guardian have agreed to notify the school and/or school nurse promptly when there are changes in the student's medical condition, plan of care, or medical prescription(s).
- The parents/guardian have been informed of local guidelines and safety precautions, and have agreed to encourage their child to comply.
- The parents/guardian have agreed to make a diligent effort to be available by phone to the school nurse in case of an emergency.
- Verification that the student and/or parents/guardian has completed the initial diabetes education series provided by the healthcare provider (strongly recommended).

The school nurse should use professional judgment and consider the following criteria when delegating a UAP to monitor or provide emergency assistance to a student who is prepared to perform some or all of their diabetes care tasks independently:

- The healthcare provider has documented the student's level of independent functioning.
- The student has demonstrated competence in blood glucose monitoring and medication administration according to locally designed skills checklists (see Appendix D: Sample Delegation Check List).

- The student's IHP includes documentation on the agreed upon location for the student to perform routine blood glucose testing, medication administration, and a process for disposal of sharps and other bio-hazardous materials.
- The student has been duly informed by the school nurse regarding the safekeeping of diabetes equipment and supplies and agrees to follow the local policies and safety procedures.
- If a student raises concerns or requires assistance with the calculated insulin dose, the UAP or licensed personnel will verify the dose with the school nurse, the DMMP, or the healthcare provider before it is given. When only one trained staff member is on site, the student's medication dosage could be remotely verified by communicating with the parent, the school nurse, and/or the healthcare provider.

Finding a Solution and Providing Safe Care

Situations may occur in which existing school health staff are unavailable or have conflicting responsibilities that would interfere with their ability to devote appropriate time and attention to the student with diabetes. In those situations, some alternative solutions to consider are:

- Train administrative personnel to act as backup for delegated UAP.
- Explore local community health partnerships.
- Temporarily change staffing patterns in the school until the student and/or UAP demonstrate competence.
- The parent has the right to request temporary or permanent reassignment of the student to a school where a diabetes-trained nurse or UAP is in place.
- Explore any other locally designed solution that protects the health and safety of the student and promotes the student's ability to attend school in the least restrictive environment.

Section V: Planning and Implementation Meeting

The registered professional school nurse (school nurse) is responsible for developing, managing, implementing, and evaluating the IHP and ECP for a student with diabetes. “Students whose healthcare needs affect or have the potential to affect safe and optimal school attendance and academic performance require the professional school nurse to write an individualized healthcare plan in collaboration with the student, family, educators, and healthcare providers” ([NASN, 2013](#)). When possible, it is best to conduct the planning and implementation meeting before the student starts school and ideally during the week immediately prior to the start of the new school year. By this time, the student’s class and meal schedule will have been determined. If a student is diagnosed with diabetes during the school year, the planning and implementation meeting should be scheduled to occur before the student returns to school.

The four major objectives of the planning and implementation meeting are to:

- Review the student’s DMMP in conjunction with documentation from the healthcare provider, parents/student input, and school nurse assessment data to evaluate and determine the student’s level of self-care that is required for daily functioning and safety and to obtain parent authorization to provide required health services.
- Provide consultation to key school staff regarding any health-related accommodations required by Section 504 or IDEA for students with disabilities.
- Plan for and provide student-specific training, direction, and supervision for both licensed personnel and UAP to meet the individualized healthcare needs of the student.
- Collaborate with appropriate participants to obtain relevant input, review the health history, identify the student needs, schedule staff education, address confidentiality issues, and discuss the components of the IHP and ECP based on the student’s DMMP.

The planning and implementation meeting participants should include anyone who may have a role in the student’s diabetes care such as:

- Student
- Parents/Guardian
- Principal or designee
- School nurse
- Current teacher(s)
- Past year teacher(s)
- Food service manager
- Other food service staff
- School counselor, social worker, psychologist
- Individuals expected to respond to a school health emergency
- Licensed Practical Nurse (LPN), Designated UAP
- Student’s Children’s Medical Services (CMS) nurse and/or a representative of

the student's healthcare team

- School bus driver and/or bus attendants*

* Since these meetings may take place before or after school, bus drivers and bus attendants can be informed separately in a confidential manner when they are not with students.

The planning and implementation agenda topics should include:

- Health history with an overview of the student's diabetes, including type, duration, and management regimen.
- Student's current health status and how diabetes is managed at home.
- Review of the current DMMP for blood glucose monitoring and medication administration.
- Any special requirements or restriction relating to nutrition or exercise.
- The student's level of knowledge and skills related to the management of diabetes.
- Level of knowledge and skills related to self-management of diabetes.
- Student-specific signs and symptoms of hypo- and hyperglycemia.
- A plan for responding to an emergency related to diabetes management.
- Contingency planning, including access to the student's IHP and ECP, as well as supplies, equipment, and medications for the student's care in the event of a disaster/emergency.
- Expectations of the parents/guardian regarding the provision of health related services to be provided by school personnel.
- Expectations of school personnel regarding the diabetes equipment and supplies to be provided by the parents/guardian.
- Selection of school personnel willing and able to take on the responsibility of providing diabetes-related care.
- How and when the school nurse will train designated UAP and other members of the school staff.
- Student's status under IDEA or Section 504 Plan including:
 - How required accommodations will be provided in the least restrictive environment (the student's usual school setting) with the least disruption possible to the regular school day routine and classroom schedule.
 - Common accommodations may include:
 - Allowing the student to eat snacks whenever or wherever necessary.
 - Allowing the student unrestricted access to the bathroom and water.
 - Facilitating the student's participation in school-sponsored activities or in transit to or from school or school-sponsored activities.
 - Allowing absences due to diabetes-related care.
 - Providing opportunities to make-up missed classroom assignments or exams due to diabetes-related care or illness.
 - Assisting with blood glucose monitoring, insulin injections, and medication administration whenever and wherever necessary to ensure the DMMP is followed.
 - Access to diabetes supplies and equipment.
 - Arranging lunch periods and food selections to meet the student's DMMP.

Section VI: Components of Individualized Health Care Plan

The registered professional school nurse (school nurse) will develop an IHP for the student with diabetes based on the DMMP provided by the student's healthcare provider, nursing assessment findings, and additional data provided by the student and parents/guardian.

Care plan development is a function of the nursing process and cannot be delegated to unlicensed staff (NASN, 2012). The IHP is designed to identify student-specific strategies for the school health team to implement in order to provide safe management of the student with diabetes in the school setting. The IHP should be reviewed and updated annually and whenever a need for change in the plan of care has been identified.

An ECP should also be developed to provide specific guidance for school personnel to follow when diabetic emergencies, such as hypo- or hyperglycemia occur. The sample DMMP, IHP, and ECP templates, included in Appendix B are offered as examples only and should be individualized to fit local needs.

The school nurse directs the safe care and management of the student with diabetes in the school setting in accordance with local policies and procedures and with Florida law ([s. 1002.20, F.S.](#) and [Rule 6A-6.0253, F.A.C.](#)). The Hypoglycemia and Hyperglycemia flowcharts on pages 21 and 22 may be helpful for the school nurse to use when providing in-service education and training to UAP.

The IHP for the student with diabetes should include the following components in accordance with the nursing process (American Nurses Association and National Association of School Nurses, 2011):

1. Assessment and Diagnosis:
 - Student-specific demographic information including parents/guardian and healthcare provider contact information.
 - Current photo of student (if available).
 - Assessment data including student's health status, risks, concerns, and strengths.
 - Anticipated level of independent functioning, as determined and identified in the student's DMMP.
 - Identification of nursing diagnosis based on nursing assessment data.
2. Identify expected outcomes and goals that are consistent with the individual student's ability, maturity, and development as outlined in the DMMP.

3. Intervention/Implementation:

- Specific nursing interventions, actions, and activities related to monitoring blood glucose, administering medication, identifying medical emergencies, and providing appropriate treatment.
- Specific information regarding all medication as ordered by the healthcare provider, including dosages and routes of administration.
- Specific information regarding the student's physical activities including any limitations.
- Specific information regarding the student's meal plan including time, amounts, and snacks.

4. Planning (Delegation/Training):

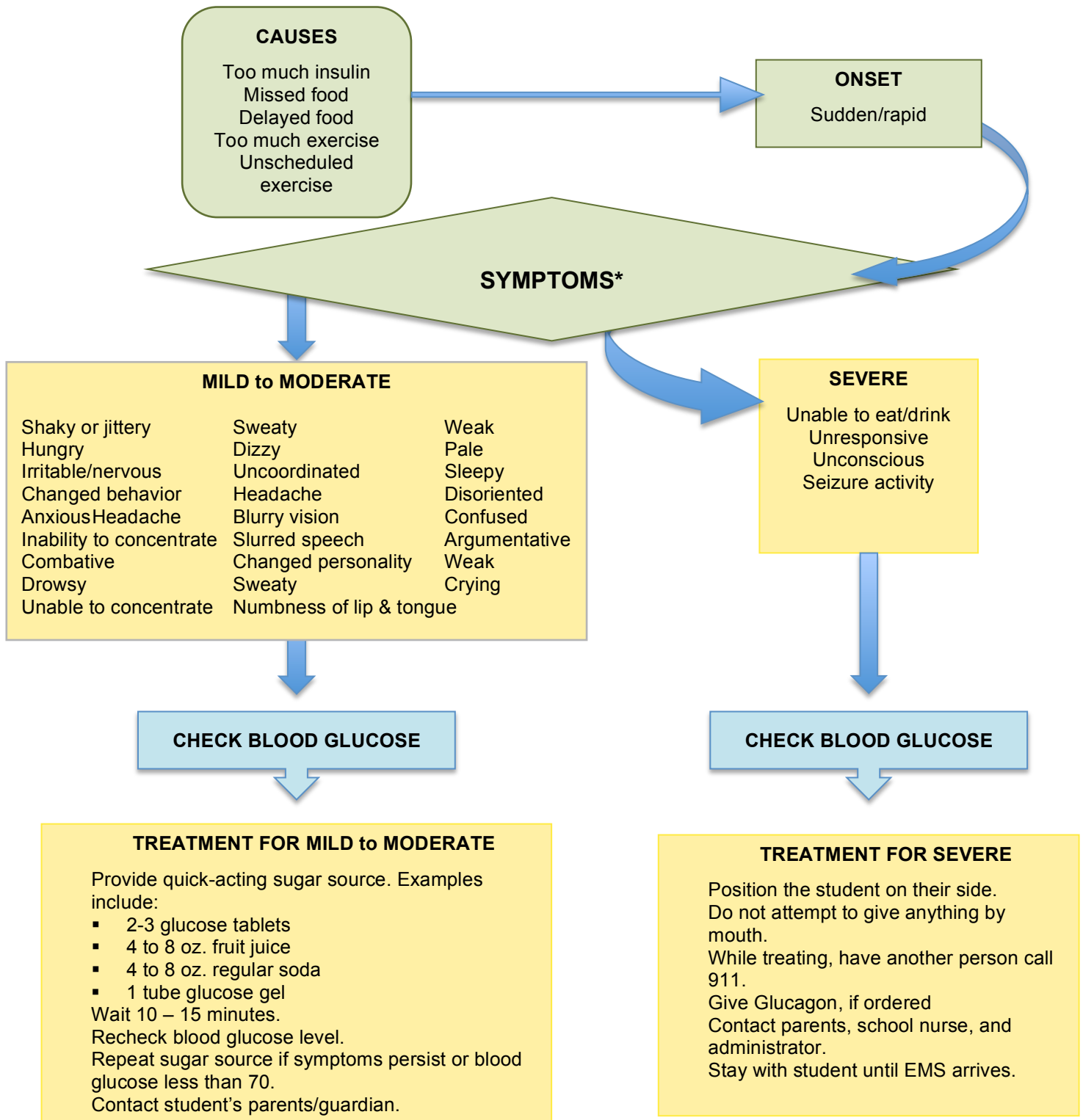
- Specific information identifying personnel who are authorized and trained to be responsible for management of the student with diabetes during the school day.
- Specific information on any special accommodations that must be made during participation in school-sponsored activities, and in transit to or from school or school-sponsored activities, including field trips.

5. Evaluation:

- Measurement of effectiveness of IHP in meeting outcomes/goals.
- Adjustments/revisions to the IHP are made on an as-needed basis.

Hypoglycemia Flowchart

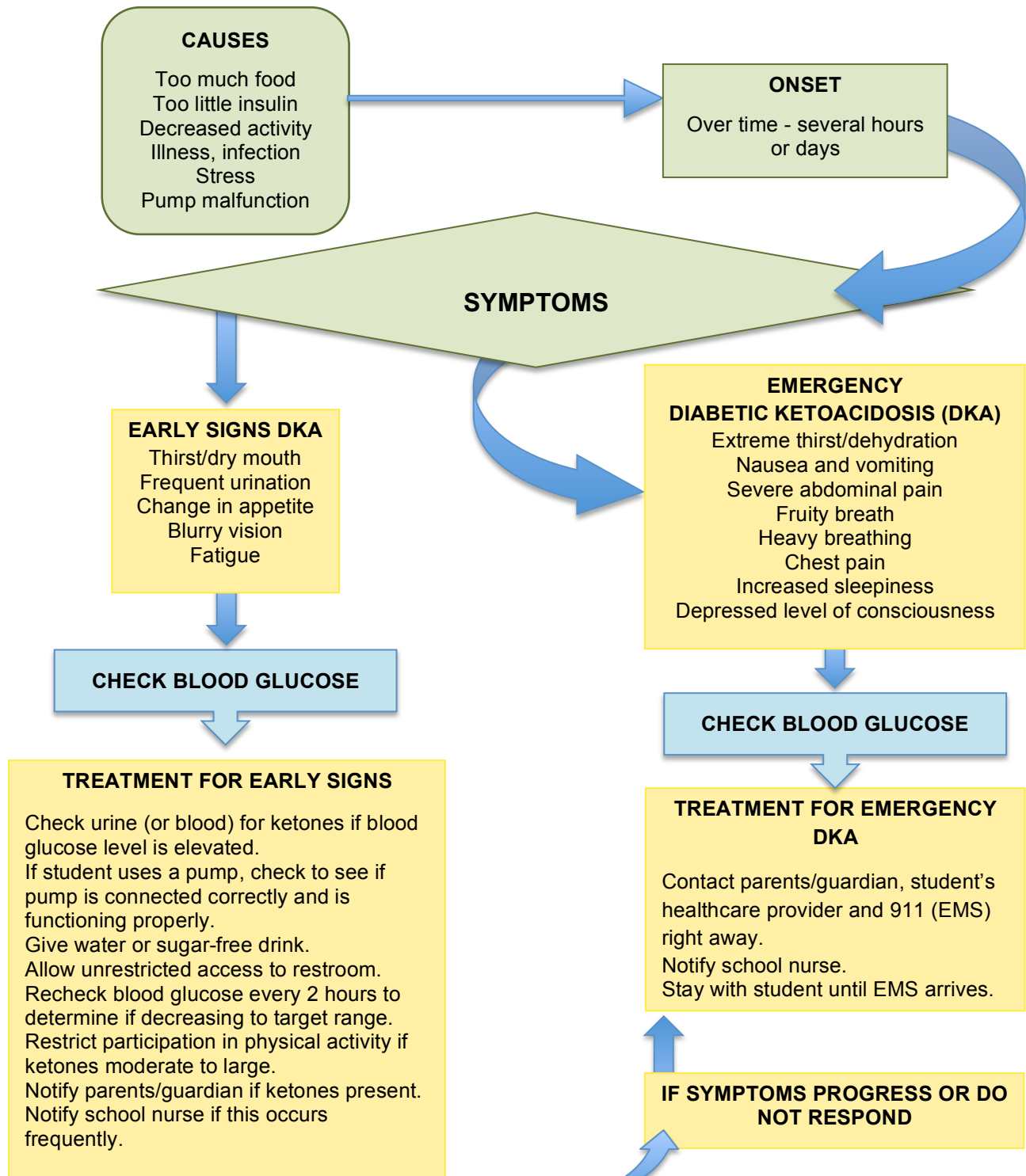
Intended to be used for educational purposes **ONLY**. This chart may **NOT** be used in place of the student's DMMP/ECP for individual treatment.



***Never send a child with suspected low blood glucose anywhere alone.**

Hyperglycemia Flowchart

Intended to be used for educational purposes **ONLY**. This chart may **NOT** be used in place of the student's DMMP/ECP for individual treatment.



Section VII: Roles & Responsibilities

The well being of a student with diabetes involves a collaborative relationship among the healthcare provider, the school, and the home. The student's family and the healthcare team are responsible for the medical management and should contribute information to develop the IHP. The school should be responsible for assuring that the services needed to implement the plan of care are provided by persons specifically trained to provide the needed services in the least restrictive environment (LRE) while preserving the safety of the student.

The school district, school administrator, and the registered professional school nurse (school nurse) should be familiar with the school issues and responsibilities associated with students with diabetes to assure consistent care with approved policy and procedures for the care of these students. Several national health and educational organizations have jointly issued guidance regarding students with chronic diseases. A copy of this guidance is provided in Appendix F for your reference.

Healthcare Provider

The healthcare provider manages the medical care of the student with diabetes. The healthcare provider should provide information and guidance to the school nurse to use in developing the student's IHP. The healthcare provider should not only be aware of the medical needs of the student but also take into consideration the resources available in the school.

To ensure the safety of students, the healthcare provider should:

- Provide the school nurse with the required diabetes history information, authorization forms and emergency information specific to the needs of the student (see Appendix B: Sample DMMP).
- Provide specific written orders necessary for the care of the student.
- Whenever possible, prescribe the method of insulin administration via pump or pen to limit the potential for medication errors.
- Be available for consultation regarding student-specific questions.
- Educate the student and parents/guardian regarding diabetes management.
- Determine the level of self-care allowed based on the student's knowledge, developmental level, and abilities.

Principal

The principal should set the example for the rest of the school faculty and staff to create a safe environment for the student with diabetes. The principal and/or the administrative designee should participate annually in Level 1 diabetes overview training. The principal's administrative designee should also complete Level 2 and Level 3 diabetes training to assist the student(s) with diabetes (see Section VIII, Staff Education).

The principal should:

- Designate staff to participate in Levels 1, 2 and 3 diabetes-related training.
- Provide leadership for all school personnel to ensure that all health policies related to diabetes management at school are current and implemented.
- Develop and implement a notification system to inform the school nurse of a pending enrollment of a student with diabetes.
- At a minimum, participate in Level 1 diabetes education and encourage all school personnel to participate in this training.
- Also consider completing Levels 2 and 3 diabetes training in order to provide care for student(s) when other trained staff are unavailable.
- Be aware of the federal and state laws governing the educational requirements for students with diabetes.
- Collaborate with the school nurse.
- Designate UAP who are willing and able to accept the student's diabetes care responsibilities and will be available when the student requires care. It is not practical to designate school personnel who have schedule or assignment conflicts.
- Require that each UAP annually complete the recommended levels of diabetes training including student-specific training.
- Facilitate problem-solving and negotiations among members of the school team and the student's family.
- Provide physical resources on campus to safely implement all accommodations and activities noted in the IHP.
- Respect the student's confidentiality and right to privacy.

School Nurse

The school nurse is required to function within the scope of practice defined by Florida's Nurse Practice Act. The school nurse may be the only full- or part-time licensed healthcare professional in the school setting. When the school nurse is assigned to multiple schools, she or he should recognize the need to set students with diabetes as a high priority whenever part or all of their care is delegated to a UAP.

To ensure the safety of the students, the school nurse should:

- Obtain and maintain a current knowledge base and update skills and abilities related to the medical management of diabetes in the school-age population. This knowledge includes the current standard of care for diabetes management.
- Perform a nursing assessment on the students to obtain health and psychosocial information.
- Organize and facilitate planning meetings with the student's parents/guardian and other key school staff to discuss planning and implementation of the student's IHP in accordance with the student's DMMP.

- Based on the DMMP, develop an IHP in cooperation with the student, the parents/guardian, the healthcare provider, and school team.
- Based on the IHP and student-specific signs and symptoms, develop the ECP.
- Review the DMMP as needed and update the IHP and ECP whenever there is a change in medical management or the student's response to care.
- If necessary, request via the parent, that the healthcare provider re-evaluate the student's competency level to further enhance the student's independence. On the other hand, it may be necessary to provide closer supervision and monitoring until the student's knowledge, skills, and reliability improve.
- Collaborate with the principal to select and delegate the most appropriate UAP for each student.
- Train and supervise the designated UAP to provide diabetes procedures for the student with diabetes. The selected UAP should be willing and available to assist the student as needed.
- Ensure that two or more back-up persons in each school are trained to provide adequate coverage in an emergency. In collaboration with the school principal, ensure that the requisite numbers of trained personnel are available for routine or emergency diabetes care whenever or wherever a student is at school or engaged in a school-sponsored activity.
- Practice universal precautions and infection control procedures during all student encounters and include this information in the training for all UAP.
- Train and supervise UAP to verify any dose of insulin administered in the schools.
- Provide or arrange for student-specific training to all school personnel who will have direct contact with the student on how to respond in an emergency.
- Maintain appropriate documentation of the training and care provided and monitor the documentation of services provided by UAP.
- Act as a resource to the principal and other school personnel to provide or arrange for appropriate in-service education.
- Establish a resource file of pamphlets, brochures, and diabetes-related publications for school personnel.
- Establish and maintain a working relationship with the student's parents/guardian and healthcare provider. Act as a liaison between the student's authorized healthcare provider and the school.
- Participate in IEP and Section 504 planning meetings and provide relevant health information.
- Serve as the student/family advocate. Respect the student's confidentiality and right to privacy.
- Establish a process for on-going and emergency communication with:
 - The parents/guardian (including a parental notification procedure to address repairing or replacing equipment and replenishing supplies and medication).
 - The authorized healthcare provider.
 - The school faculty, UAP, and personnel who have direct contact with the student.

Unlicensed Assistive Personnel (UAP)

In schools where a full time UAP is assigned, that individual may be the person designated to provide the diabetes-related services for the student with diabetes. However, if students with diabetes require monitoring, insulin administration, or services outside of the health room, the school nurse may need to train additional UAP to specifically assist the student with diabetes.

All UAP should:

- Participate in Levels 1, 2, and 3 diabetes-related training in order to provide direct care for students with diabetes.
- Be available on campus during regular school hours and when the student participates in school-sponsored activities.
- Accompany the student on field trips and other off-campus school-sponsored activities.
- Communicate with the school nurse on a regular basis and as needed.

Teachers/Coaches and Before- and After-School Program Staff

Teachers and coaches should provide a supportive learning environment and treat the student with diabetes the same as any other student in conjunction with the required accommodations. Not all teachers or coaches in a school will have direct contact with the student who has diabetes. Even if no direct contact is anticipated, the teacher and coach will need to attend the Level 1 diabetes-related training.

If the teachers or coaches are scheduled to have direct contact with the student, the teachers/coaches and before- and after-school program staff should:

- Be aware of which students have diabetes and cooperate with the accommodations listed in the IHP, ECP, Section 504 Plan, or IEP.
- Attend the Levels 1 and 2 diabetes related-training to learn the basics and what to do in an emergency to be able to recognize the signs and symptoms associated with hypo- and hyperglycemia.
- Be aware of any student-specific emergency actions that may be necessary.
- Provide the student with an appropriate location, ensuring privacy if requested, to monitor blood glucose or administer insulin in accordance with the student's IHP.
- Be sure that blood glucose levels are monitored before exercise or strenuous activity and allow for snacks before and after the physical activity if indicated in the student's IHP.
- Understand that classroom accommodations may also be necessary during standardized testing periods in accordance with Section 504 Plan or IEP.
- Communicate with the school nurse, or the parents/guardian regarding the student's progress or any concerns about the student.
- Communicate with the student's parents/guardian when a field trip or classroom activities may require adjustment in their meal plan or insulin administration.

- Provide information for substitute teachers regarding the day-to-day and emergency needs of the student.
- Respect the student's right to confidentiality and privacy.

School Counselor, Social Worker, and Psychologist

Student services personnel should:

- Be aware of the potential impact of diabetes and diabetes treatment on the student's behavior and performance.
- Attend, at a minimum, the Level 1 diabetes-related training.
- Be prepared to work with the school nurse to assure that the necessary accommodations are made to comply with state and federal laws.
- Be prepared to assist students with diabetes with any expressed concerns regarding diabetes.
- Identify and respond to ineffective coping mechanisms demonstrated by the student or the family as they relate to school performance and attendance.
- Be familiar with community resources and services available to assist the student and family.

School Food and Nutrition Staff

All food and nutrition services staff, especially the food service manager and assistant managers, have roles in protecting the health and safety of students with diabetes.

Food service manager, assistant managers, and food service staff should:

- Attend Levels 1 and 2 diabetes-related training.
- Be aware of which students have diabetes and cooperate with the accommodations listed in the IHP, Section 504 Plan, or IEP.
- Be aware of student-specific emergency actions that may be necessary.
- Be aware of the policy for activating Emergency Medical Services (EMS) in case of a diabetes emergency.
- Confirm that blood glucose levels are monitored before or after meals and help support the allowance for snacks before and after the physical activity if indicated in the student's IHP.
- For schools participating in the U.S. Department of Agriculture's Child Nutrition Programs, be aware that the physician prescribed diet for students with diabetes must be followed unless adjustments in food portions or meal components are needed for low or high blood glucose levels. These components and portion size changes may not meet the school meal pattern requirements as the meal pattern is geared for students without special dietary needs. While the standard requirements may not fully meet the special situation for students with diabetes, schools may continue to claim these special meals for reimbursement as allowed in the National School Lunch and School Breakfast Program guidelines (Florida Department of Agriculture and Consumer Services, 2013, a & b).

- Although it is the parents/guardian responsibility to supply the student with the necessary snacks to maintain the appropriate blood glucose levels, it may be necessary to have emergency snacks available. If possible, the food service staff should work with a dietitian to develop and publish a meal schedule in advance, including grams of carbohydrate in planned menu offerings so the parents/guardian can plan the anticipated insulin dosages with their students (see Appendix C: Food Service Guide on Diabetes and Carbohydrate Counting).
- If a school or district does not have a registered dietitian on staff, the school or district may locate a registered dietitian through the local chapter of the [American Academy of Nutrition and Dietetics](#). Local hospital outpatient or physician's office registered dietitians may also be contacted to assist in working with food services staff to implement student prescribed diets and carbohydrate calculations.
- Communicate with the school nurse, trained diabetes personnel, and the parents/guardian regarding the student's progress or any concerns about the student.
- Respect the student's right to confidentiality and privacy.

School Bus Drivers

School bus drivers have contact with students with diabetes at the beginning and end of the school day. Mornings without breakfast or late afternoons are often the times that low blood glucose episodes occur.

School bus drivers should:

- Be aware of which students have diabetes and be able to identify signs and symptoms of hypo- and hyperglycemia.
- Be aware of the emergency response appropriate to each student and allow students with diabetes to carry the appropriate snacks or equipment for an emergency response. Students with diabetes may need to eat and/or drink during the bus ride.
- Consider encouraging the student to sit near the front of the bus to allow for closer observation.
- Communicate to the school nurse any concerns regarding the student's actions or behavior.
- Participate in Level 1 diabetes-related training.
- Respect the student's right to confidentiality and privacy.

Parents/Guardian

For students to receive services in the safest possible manner while in school, parents and guardians should:

- Inform the school as soon as possible when a student is newly diagnosed as having diabetes or when a previously diagnosed student enrolls in a new school.

- Work with the school staff before the student starts school and ideally during the week immediately prior to the start of the new school year.
- Provide the school with accurate and current emergency contact information.
- Consider training an emergency contact who can safely retrieve the student from school.
- Provide the school with the DMMP from the healthcare provider.
- Participate in planning meetings with the school nurse and other key school staff as soon as possible after diagnosis and annually or more often if needed.
- Inform the school nurse or designated school staff about any changes in the student's health status or medical orders (DMMP).
- Provide the school nurse with any new prescriptions when there are changes in the DMMP.
- Understand that any treatment changes require written prescriptions from the licensed healthcare provider.
- Provide the school with all medications, equipment, supplies, and snacks necessary for the medical management of the student's diabetes.
- Assume responsibility for the maintenance and calibration of all medical equipment.
- Sign appropriate written permission for authorization of treatment and sharing of necessary health related information.
- Provide the student with a medical identification tag or jewelry and encourage the student to wear it in school.
- Work with healthcare providers, their staff, and the student to promote self-sufficiency in diabetes management.
- Respect the student's confidentiality and right to privacy.
- Agree to follow all local policies and procedures of which the parents/guardian has been informed.

Student with Diabetes

To remain active and healthy, the student with diabetes should learn how to maintain blood glucose levels within a target range. School administration, the school nurse, and other key school personnel provide support to facilitate the student progress towards developmentally appropriate diabetes self-management. The student must assume some of the responsibility for his or her health and safety to the extent possible.

Students should:

- Participate in the planning meetings as desired and developmentally appropriate.
- Always wear medical alert identification while in school.
- Cooperate with school personnel in implementing their IHP.
- Observe all local policies and procedures related to blood and body fluid precautions and sharps disposals.
- Seek adult help immediately when low blood glucose levels are suspected or verified by blood glucose monitoring.
- Record and report all blood glucose monitoring according to their DMMP.

- Follow all nutritional guidelines according to the DMMP and carry a quick-acting source of glucose.
- Complete the initial and ongoing diabetes education provided by the healthcare provider.
- Advocate for his or her needs.
- Seek authorization from the healthcare provider, parent, and school nurse to function independently.
- Demonstrate competence in blood glucose monitoring and self-administration of insulin and other injectables at school and school-sponsored events (see Appendix D: Sample Skills Check List).
- Agree to follow all local policies and safety procedures of which the student and parents have been informed.

Section VIII: Recommendations for Staff Education

According to the National Diabetes Education Program (NDEP, 2012), diabetes management training for school personnel is essential to facilitate the appropriate care of the student with diabetes. Knowledgeable personnel are necessary for the student to achieve the good metabolic control that is required to decrease the risks for future development of diabetes complications and to promote a safe learning environment at school. It is the responsibility of the registered professional school nurse (school nurse) to coordinate the development and implementation of annual diabetes training with school faculty and staff.

Diabetes Management Training for School Personnel – Training should be consistent with nationally recognized guidelines for management of diabetes. For students known to have diabetes, training/re-training should occur at the beginning of the school year. For a newly diagnosed student, Level 3 training should take place as soon as possible when the school is notified of the diabetes diagnosis. Recommended online resources for staff education include:

- National Diabetes Education Program (NDEP, 2012) *Helping the Student with Diabetes Succeed: A Guide for School Personnel* at <http://ndep.nih.gov/publications/PublicationDetail.aspx?PubId=97#main>.
- National Association of School Nurses (NASN, 2010) *Managing Diabetes at School: Tools for the School Nurse* at <http://www.nasn.org/ToolsResources/DiabetesinChildren>.
- American Diabetes Association training resources at <http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/school-staff-trainings/training-resources.html>.

Level 1: Diabetes Overview and How to Recognize and Respond to an Emergency Situation

Who: All school personnel.

What: General overview of type 1 and type 2 diabetes that includes:

- How to recognize and respond to signs and symptoms of hypo- and hyperglycemia.
- Who to contact for help in an emergency.

Level 2: Diabetes Basics and What to Do in an Emergency Situation

Who: All school personnel and classroom teachers who have responsibility for students with diabetes during the school day.

What: Content from Level 1 with specific instruction for what to do in an emergency:

- Expanded overview of type 1 and type 2 diabetes.

- Impact of hypoglycemia and hyperglycemia on behavior and learning.
- Roles and responsibilities of the student, parents, and school personnel.
- Tips and planning needed for the classroom and special events.
- Specific instructions on the Emergency Care Plans (ECP) for students who are self-managing their diabetes care.
- How to activate Emergency Medical Services (EMS) in case of a diabetes emergency.
- Information regarding local policies and standards adopted by the county school district.
- Legal rights of students with diabetes as required by federal and state laws.

Level 3: General and Student-Specific Diabetes Care Tasks

Who: School faculty and staff designated by the school principal as UAP. The school nurse should be involved in the decision-making process to identify which school personnel are most appropriate to be trained.

What: All the information from Level 1 and Level 2 trainings as well as Level 3 student-specific training by a health care professional such as a school nurse or a certified diabetes educator:

- Training on general diabetes care tasks specified in the DMMP.
- Training for implementation of the student's IHP.
- Student-specific training using the student's equipment, medication, and supplies for each diabetes care task (e.g., blood glucose monitoring, ketone checking, insulin/medication administration, and emergency injection of glucagon for hypoglycemia).
- Elements of effective diabetes management at schools.
- All Level 3 trained staff should be familiar with the school emergency procedures and know where to locate students' medications, supplies, and equipment in an emergency.

Section IX: Disaster Preparedness

It is most likely that in the face of a natural disaster or emergency all students would be sent home from school. However, in the event that environmental hazards exist that would prevent the students from leaving the school, an emergency plan should be in place. Preparations should be made to secure enough emergency food and first aid supplies to last 72 hours. Since telephones, cell phones, email, and computers may not operate during an emergency, alternative communication methods should be identified.

Disaster plans by the school district and county health department should be in place to address the broad scope of potential disasters that may impact a school and students, staff, and visitors. School administrators and/or their designee should review disaster plans annually to address the unique health care requirements for all students, including those with diabetes. Development of the food service emergency readiness plan should be part of the overall emergency readiness policy to address the needs of students with diabetes to the extent possible. Emergency readiness, food safety, and disaster planning resources are available at <http://freshforfloridakids.com/Sponsors/Regulatory/FoodSafetyandDisasterPlans.aspx>.

In the event of sheltering in place or evacuation, advance planning is of particular importance to facilitate access to medication, equipment, and supplies for students with diabetes. The registered professional school nurse (school nurse) should take an active role in disaster education and training to assist school staff in understanding the aspects of preparation necessary to protect the health and safety of students with diabetes. If or when a school nurse is not available during a disaster, the UAP who has been trained to follow the student's IHP should administer care. Providing access to carbohydrates and water is necessary. Emergency procedures should include immediate transportation of medication, supplies, and equipment in the event of a relocation.

The four steps of the nursing process (assess, plan, implement, and evaluate) parallel the four phases of emergency management (prevention/mitigation, preparedness, response, and recovery) as outlined in the Position Statement: [*Emergency Preparedness – The Role of the School Nurse \(NASN, 2011\)*](#).

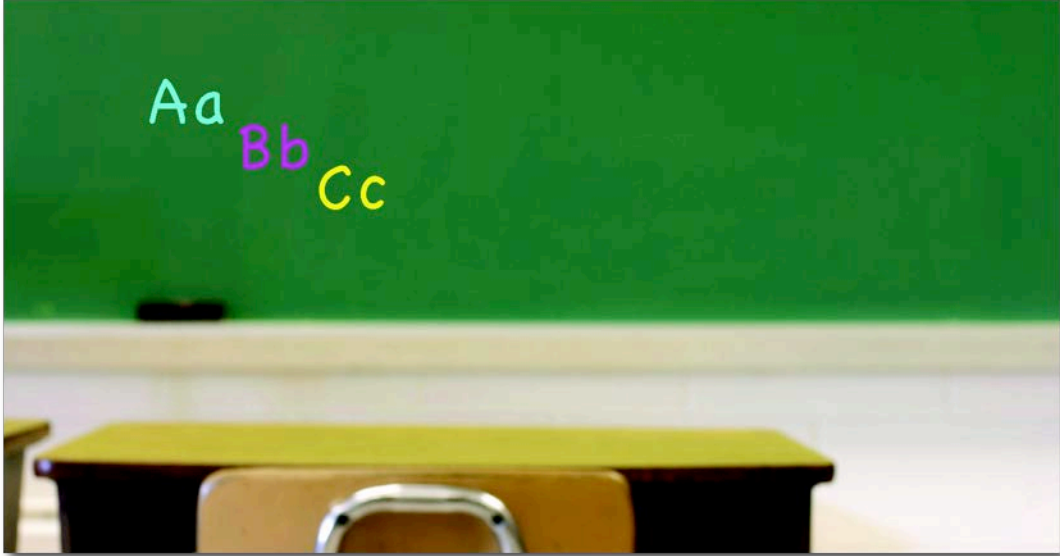
Section X: Monitoring & Evaluation

Monitoring and evaluation are essential components of quality management. This is applicable at all levels in the care of students with diabetes. School districts should consider monitoring and evaluating learning outcomes of training and re-training as outlined in Section 2 in the National Diabetes Education Program (NDEP) *Helping the Student with Diabetes Succeed: A Guide for School Personnel* (2012). The registered professional school nurse (school nurse) has the responsibility to monitor and evaluate diabetes care that is provided to students in the school/district. When problems with didactic knowledge or skill acquisition are discovered that cannot be remedied, that school nurse should notify the school principal and alternate school personnel should be trained and assigned as needed. Florida's School Health Services Summary at: <http://www.floridahealth.gov/healthy-people-and-families/childrens-health/school-health/reports-information.html> provides information about the number of students with diabetes and diabetes care tasks for Florida's 67 county school districts.

Medication Errors

The county school district should have in place, policies and procedures for monitoring medication errors and potential medication errors. Violation of any one of the “six rights” of medication administration constitutes a medication error. Those six rights are: right student, right medication, right dosage, right time, right route, and right documentation. When a medication error occurs, the following procedures are strongly recommended:

- Notify the school administrator.
- Call the poison control non-emergency number (1-800-282-3171) for toxicity or expected side effects, if the error involved the wrong student, medication, dosage, time, or route.
- Notify the parent.
- Notify the school nurse and the nursing supervisor.
- Notify the prescribing healthcare provider.
- Complete the appropriate documentation (e.g., incident report and medication variance report).
- File the original incident report with the county school district level administrator as required by local policy and the school nurse supervisor in accordance with [s. 499.0121, F.S.](#)
- A problem-solving team needs to evaluate medication errors in order to determine what actions can be taken to reduce and prevent future errors. As in any healthcare setting, the purpose of medication-error monitoring and prevention in school settings is to identify systematic improvements to protect the health and safety of students with diabetes.



Appendix A: Glossary

Glossary

Accommodations: Adjustments or modifications made by teachers and other school staff members to enable students with disabilities to have access to education.

Basal insulin: Long-acting or immediate-acting insulin delivered once or twice a day. Basal insulin is used to control blood glucose levels overnight and between meals.

Basal/bolus insulin plan: An insulin plan that mimics the way a normally functioning pancreas produces insulin by using a coordinated combination of different types of insulin to achieve target blood glucose levels at meals, snacks, during periods of physical activity, and through the night.

Blood glucose level: The amount of glucose or sugar in the blood.

Blood glucose meter: A small, portable machine that measures how much glucose is in the blood. After pricking the student's skin with a lancet, the student places a drop of blood on a special test strip, which is inserted into the glucose meter that reads and displays the student's blood glucose level.

Blood ketone testing: Use of a meter to test the blood for ketones or ketone bodies.

Bolus insulin: A dose of rapid-acting or short-acting insulin given to cover the carbohydrate in a meal or snack and to lower blood glucose levels that are too high.

Carbohydrates or carbs: One of the 3 sources of energy in food for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. Foods that contain carbohydrates raise blood glucose levels. Carbohydrate foods include: breads, crackers, cereals, rice, pasta, grains, vegetables, milk, yogurt, fruit, juice, sweetened sodas, table sugar, honey, syrup, molasses, cakes, pies, and cookies.

Carbohydrate (carb) counting: A meal planning approach for children and adolescents with diabetes that involves calculating the number of grams of carbohydrate, or choices of carbohydrate, eaten at meals or snacks.

Celiac disease: A condition in which a person cannot eat any food products that contain gluten or that have been prepared in a gluten-contaminated environment. Gluten is found in many grains, including wheat, rye, and barley, which are found in many breads, pastas, cereals, and processed foods. Ingestion of gluten can cause gastrointestinal side effects such as bloating, abdominal pain, or diarrhea.

Continuous Glucose Monitor (CGM): A device that records glucose levels throughout the day. The CGM works through a sensor inserted under the skin that measures interstitial glucose levels (the glucose found in the fluid between cells) at regular intervals. The CGM sends the current glucose level wirelessly to a pump or a separate

monitor that the student carries in a pocket, a backpack, or a purse. When glucose levels are too high or too low, the CGM sets off an alarm.

Delegation: The transference to a competent individual the authority to perform a selected task or activity in a selected situation by a nurse qualified by licensure and experience to perform the task or activity ([Chapter 64B9-14, F.A.C.](#)).

Diabetes: Diabetes is a disease that impairs the body's ability to produce or properly use insulin, a hormone needed to convert food into energy.

Diabetes Medical Management Plan (DMMP): A DMMP is a medical authorization for diabetes treatment that includes medication orders from the student's healthcare provider for routine and emergency care.

Diabetic Ketoacidosis (DKA): An emergency condition in which extremely high blood glucose levels, along with a severe lack of insulin, result in the breakdown of body fat for energy and an accumulation of ketones in the blood and urine.

Emergency Care Plan (ECP): An ECP is a child-specific action plan to facilitate quick and appropriate responses for an individual emergency in the school setting. The ECP is also known as the Emergency Action Plan (EAP) and may be a component of the Individualized Healthcare Plan (IHP) that is developed consistent with s. [1002.20\(3\)\(j\)](#) and [1006.062\(4\)](#), F.S. and rules 6A-6.0251 through 6A-6.0253, F.A.C. The EAP shall specify when the emergency number (911) will be called and describe a plan of action when the student is unable to self-administer medication or self-manage treatment as prescribed.

Emergency Room (ER): Could also be called Emergency Department or Urgent Care facilities.

Exceptional Student Education (ESE): Specially designed instruction and related services that are provided to meet the unique needs of students who meet exceptional student education eligibility criteria. Related services include school health services and school nurse services, social work services in schools, and parent counseling and training ([34 Code of Federal Regulations \[CFR\] § 300.34](#)).

Family Educational Rights and Privacy Act (FERPA): A federal law that, with certain exceptions, prohibits school personnel from disclosing personally identifiable information about a student unless the parent provides prior written consent.

Glucagon: A hormone that raises the level of glucose in the blood. Glucagon, given by injection, is used to treat severe hypoglycemia, a medical emergency due to an extremely low blood glucose level.

Glucose: A simple sugar found in the blood. It is the body's main source of energy.

Glucose correction factor: The amount of insulin the student needs to lower blood glucose level.

Glucose tablets or gel: Special products that deliver a pre-measured amount of pure glucose. They are a quick-acting form of glucose prescribed to treat hypoglycemia.

Health Insurance Portability and Accountability Act (HIPAA) of 1996: A federal law to provide privacy standards to protect patients' medical records and other health information provided to health plans, doctors, hospitals, and other healthcare providers. The HIPAA Privacy Rule excludes records that are protected by FERPA at schools that provide health or medical services to students.

Hyperglycemia: A high level of glucose in the blood. High blood glucose can be due to an imbalance of insulin, food, exercise, illness, or insulin pump malfunction.

Hypoglycemia: A low level of glucose in the blood. Low blood glucose is most likely to occur during or after exercise, when too much insulin is present, or when not enough food is consumed.

Individual Educational Plan (IEP): The IEP is a term used in ESE. It means a written document for each student with a disability that is developed, reviewed, and revised in accordance with state and federal guidelines governing the education of exceptional education students.

Individualized Healthcare Plan (IHP or IHCP): The IHP is a written plan of care developed by a registered nurse at the local level to outline the provision of student healthcare services intended to achieve specific student outcomes. The IHP is part of the nursing process that is detailed in the National Association of School Nurses Position Statement: [Individualized Healthcare Plans, The Role of the School Nurse \(2013\)](#). The IHP is child-specific and includes a written format for nursing assessment (health status, risks, concerns, and strengths), nursing diagnoses, interventions, delegation, training, expected outcomes, and goals to meet the health care needs of a student with diabetes and to protect the safety of all students from the misuse or abuse of medication, supplies, or equipment. Sometimes referred to as an IHCP or a nursing care plan, the IHP for a student with diabetes, is developed from the Diabetes Medical Management Plan (DMMP) by a registered nurse in collaboration with the family, student, student's healthcare providers, and school personnel for the management of diabetes while in school, participating in school-sponsored activities, and in transit to or from school or school-sponsored activities.

Individuals with Disabilities Education Act (IDEA): IDEA is the major federal law regarding the education of students with specified disabilities.

Healthcare provider: A licensed healthcare professional in Florida responsible for the medical management of the student with diabetes.

Insulin: A hormone made in the pancreas that allows glucose to enter the cells of the body where it is used for energy. Several types of insulin are used in combination to treat diabetes.

Insulin injections: The process of supplying the body with insulin using a needle and a syringe or with an insulin pen.

Insulin pen: A pen-like device used to put insulin into the body.

Insulin pump: A computerized device that is programmed to deliver small, steady doses of insulin throughout the day and has the ability to send a bolus of insulin enabling the additional carbohydrates ingested during a meal or snack to be utilized.

Insulin resistance: A condition in which the body does not respond normally to insulin. Many people with type 2 diabetes have insulin resistance.

Insulin-to-carb ratio: A calculation used to determine the number of units of insulin needed to cover the number of grams of carbohydrates (carbs) in the food the student plans to eat. Also known as carbohydrate-to-insulin ratio.

Lancet: A small needle, inserted in a spring-loaded device that is used to prick the skin in order to obtain a drop of blood to check the blood glucose level.

Least Restrictive Environment (LRE): To the maximum extent appropriate, children with disabilities are educated with children who are nondisabled.

Local Education Agency (LEA): The local county school district.

Medical alert identification: An identification card, tag, necklace, or bracelet indicating the student has diabetes and has emergency numbers to call for help.

NASN: National Association of School Nurses (See Position Papers and Reports at <http://www.nasn.org/Default.aspx?tabid=61>).

Nursing Care Plan: See Individualized Healthcare Plan (IHP).

Peak effect time: The timeframe when insulin has its major effect on reducing the blood glucose level.

Related services: Related services may include school health services and school nurse services, social work services in schools, and parent counseling and training ([Rule 6A-6.03411, F.A.C.](#)).

School Nurse: A professional registered nurse, licensed to practice in Florida, who is employed by the local department of health, local school district, or contracted by the local department of health or local school district from a community-based agency. The

school nurse may be assigned to one or more schools. This nurse 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.](#)).

Section 504 of the Rehabilitation Act of 1973 (Section 504): A federal law designed to protect the rights of students with disabilities in programs and activities that receive federal financial assistance from the U.S. Department of Education. The Section 504 Plan consists of accommodations that are designed to meet the student's individual needs (See 504 FAQ at <http://www2.ed.gov/about/offices/list/ocr/504faq.html>).

Self-Administration: Self-administration means that a student with diabetes is able to self-manage medication, supplies, and equipment in the manner directed by a licensed healthcare provider without additional assistance or direction.

Supervision: The provision of guidance by a qualified registered professional nurse (RN) and periodic monitoring inspection by the RN for the accomplishment of a nursing task or activity provided by unlicensed assistive personnel. The RN must be qualified and legally entitled to perform such task or activity.

Direct supervision means the supervisor is on the premises but not necessarily immediately, physically present where the tasks and activities are being performed.

Indirect supervision means the supervisor is not on the premises, but is accessible by two-way communication, is able to respond to an inquiry when made, and is readily available for consultation ([Chapter 64B9-14, F.A.C.](#)).

Test strips: Specially designed strips used in blood glucose meters to check blood glucose levels or to check urine for ketones.

Unlicensed Assistive Personnel (UAP): [Chapter 64B9-14.001, F.A.C.](#), defines "unlicensed assistive personnel" (UAP) as persons who do not hold licensure from the Florida Department of Health but who have been assigned to function in an assistive role under the supervision of a registered nurse. UAP are trained and delegated (required under [s. 1006.062, F.S.](#)) to perform health-related services for students while they are in school. The UAP may be any school employee, including, but not limited to, teacher, secretary, bus driver, bus attendant, or aide, who meets the above listed requirements and has willingly agreed to provide the delegated services within all locally established policies and guidelines. UAP may also be referred to as non-medical assistive personnel as listed in [s. 1006.062, F.S.](#)



Appendix B: Tools for Effective Diabetes Management^{*}

- Sample DMMP, page 49
- Sample Template for an IHCP and ECP, page 57
 - Sample Emergency Care Plans for Hypoglycemia and Hyperglycemia, page 59
- Sample Polk County DMMP, page 63
 - Visit [Polk County Public Schools](http://www.polkcountyschools.org/) to download a copy

^{*} Source: National Diabetes Education Program (NDEP, 2012). National Institutes of Health(NIH) National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). Helping the Student with Diabetes Succeed: A Guide for School Personnel. Retrieved from <http://www.ndep.nih.gov/publications/PublicationDetail.aspx?PubId=97#section3>

Tools

Sample Diabetes Medical Management Plan

Sample Template for an Individualized Health Care Plan

Sample Emergency Care Plans for Hypoglycemia and Hyperglycemia

Section 3 contains examples of three important tools for helping schools implement effective diabetes management—a sample Diabetes Medical Management Plan, a sample template for an Individualized Health Care Plan, and sample Emergency Care Plans for Hypoglycemia and Hyperglycemia.

- The **Diabetes Medical Management Plan (DMMP)** is completed by the student’s personal diabetes health care team and contains the medical orders that are the basis for the student’s health care and education plans.
- The **Individualized Health Care Plan (IHP)** is prepared by the school nurse and contains the strategies for implementing the medical orders in the DMMP in the school setting.
- The **Emergency Care Plans for Hypoglycemia and Hyperglycemia**, based on the DMMP, summarize how to recognize and treat hypoglycemia and hyperglycemia and who to contact for help. The school nurse will coordinate development of these plans. Emergency care plans should be completed for each student with diabetes and should be copied and distributed to all school personnel who have responsibility for students with diabetes during the school day and during school-sponsored activities. Provide completed copies to the parents/guardian as well.

How to Use the Tools for Effective Diabetes Management

- The parents/guardian should give the sample Diabetes Medical Management Plan (DMMP) to the student's personal diabetes health care team as a resource for preparing the medical orders.
- The student's personal diabetes health care team should fill out the plan, sign it, review it with the parents/guardian and the student, and return it to the school nurse before the student with diabetes returns to school after diagnosis, or when the student transfers to a new school.
- The student's personal diabetes health care team should review and update the DMMP at the beginning of each school year or upon a change in the student's prescribed care regimen, level of self-management, school circumstances (e.g., a change in schedule), or at the request of the student or parents/guardian or the school nurse.
- The school nurse should prepare the Individualized Health Care Plan (IHP) based on the medical orders in the DMMP and review it with the parents/guardian and the student.
- The school nurse should adapt the sample Emergency Care Plans for Hypoglycemia and Hyperglycemia to meet the needs of individual students, as prescribed in the student's DMMP.
- The Emergency Care Plans should be copied and distributed to all regular and substitute personnel who have responsibility for the student with diabetes during the school day and during school-sponsored activities. Consider laminating these plans for use throughout the school year. Provide copies to the parents/guardian.
- During all levels of training, information in the Emergency Care Plans on the signs and symptoms of hypoglycemia and hyperglycemia, how to respond, and who to contact for help in an emergency should be reviewed with school personnel.

Diabetes Medical Management Plan (DMMP)

This plan should be completed by the student's personal diabetes health care team, including the parents/guardian. It should be reviewed with relevant school staff and copies should be kept in a place that can be accessed easily by the school nurse, trained diabetes personnel, and other authorized personnel.

Date of Plan: _____ This plan is valid for the current school year: _____ - _____
Student's Name: _____ Date of Birth: _____
Date of Diabetes Diagnosis: _____ type 1 type 2 Other _____
School: _____ School Phone Number: _____
Grade: _____ Homeroom Teacher: _____
School Nurse: _____ Phone: _____

CONTACT INFORMATION

Mother/Guardian: _____
Address: _____
Telephone: Home _____ Work _____ Cell: _____
Email Address: _____

Father/Guardian: _____
Address: _____
Telephone: Home _____ Work _____ Cell: _____
Email Address: _____

Student's Physician/Health Care Provider: _____
Address: _____
Telephone: _____
Email Address: _____ Emergency Number: _____

Other Emergency Contacts:
Name: _____ Relationship: _____
Telephone: Home _____ Work _____ Cell: _____

Tools

CHECKING BLOOD GLUCOSE

Target range of blood glucose: 70–130 mg/dL 70–180 mg/dL

Other: _____

Check blood glucose level: Before lunch _____ Hours after lunch

2 hours after a correction dose Mid-morning Before PE After PE

Before dismissal Other: _____

As needed for signs/symptoms of low or high blood glucose

As needed for signs/symptoms of illness

Preferred site of testing: Fingertip Forearm Thigh Other: _____

Brand/Model of blood glucose meter: _____

Note: The fingertip should always be used to check blood glucose level if hypoglycemia is suspected.

Student's self-care blood glucose checking skills:

Independently checks own blood glucose

May check blood glucose with supervision

Requires school nurse or trained diabetes personnel to check blood glucose

Continuous Glucose Monitor (CGM): Yes No

Brand/Model: _____ Alarms set for: (low) and (high)

Note: Confirm CGM results with blood glucose meter check before taking action on sensor blood glucose level. If student has symptoms or signs of hypoglycemia, check fingertip blood glucose level regardless of CGM.

HYPOGLYCEMIA TREATMENT

Student's usual symptoms of hypoglycemia (list below):

If exhibiting symptoms of hypoglycemia, OR if blood glucose level is less than _____ mg/dL, give a quick-acting glucose product equal to _____ grams of carbohydrate.

Recheck blood glucose in 10–15 minutes and repeat treatment if blood glucose level is less than _____ mg/dL.

Additional treatment: _____

HYPOGLYCEMIA TREATMENT (Continued)

Follow physical activity and sports orders (see page 7).

- If the student is unable to eat or drink, is unconscious or unresponsive, or is having seizure activity or convulsions (jerking movements), give:
- Glucagon: 1 mg 1/2 mg Route: SC IM
- Site for glucagon injection: arm thigh Other: _____
- Call 911 (Emergency Medical Services) and the student’s parents/guardian.
- Contact student’s health care provider.

HYPERGLYCEMIA TREATMENT

Student’s usual symptoms of hyperglycemia (list below):

Check Urine Blood for ketones every _____ hours when blood glucose levels are above _____ mg/dL.

For blood glucose greater than _____ mg/dL AND at least _____ hours since last insulin dose, give correction dose of insulin (see orders below).

For insulin pump users: see additional information for student with insulin pump.

Give extra water and/or non-sugar-containing drinks (not fruit juices): _____ ounces per hour.

Additional treatment for ketones: _____

Follow physical activity and sports orders (see page 7).

- Notify parents/guardian of onset of hyperglycemia.
- If the student has symptoms of a hyperglycemia emergency, including dry mouth, extreme thirst, nausea and vomiting, severe abdominal pain, heavy breathing or shortness of breath, chest pain, increasing sleepiness or lethargy, or depressed level of consciousness: Call 911 (Emergency Medical Services) and the student’s parents/guardian.
- Contact student’s health care provider.

INSULIN THERAPY

Insulin delivery device: syringe insulin pen insulin pump

Type of insulin therapy at school:

- Adjustable Insulin Therapy
 Fixed Insulin Therapy
 No insulin

Adjustable Insulin Therapy

- **Carbohydrate Coverage/Correction Dose:**

Name of insulin: _____

- **Carbohydrate Coverage:**

Insulin-to-Carbohydrate Ratio:

Lunch: 1 unit of insulin per _____ grams of carbohydrate

Snack: 1 unit of insulin per _____ grams of carbohydrate

Carbohydrate Dose Calculation Example

$$\frac{\text{Grams of carbohydrate in meal}}{\text{Insulin-to-carbohydrate ratio}} = \text{_____ units of insulin}$$

- **Correction Dose:**

Blood Glucose Correction Factor/Insulin Sensitivity Factor = _____

Target blood glucose = _____ mg/dL

Correction Dose Calculation Example

$$\frac{\text{Actual Blood Glucose} - \text{Target Blood Glucose}}{\text{Blood Glucose Correction Factor/Insulin Sensitivity Factor}} = \text{_____ units of insulin}$$

Correction dose scale (use instead of calculation above to determine insulin correction dose):

Blood glucose _____ to _____ mg/dL give _____ units

Blood glucose _____ to _____ mg/dL give _____ units

Blood glucose _____ to _____ mg/dL give _____ units

Blood glucose _____ to _____ mg/dL give _____ units

INSULIN THERAPY (Continued)

When to give insulin:

Lunch

Carbohydrate coverage only

Carbohydrate coverage plus correction dose when blood glucose is greater than _____ mg/dL and _____ hours since last insulin dose.

Other: _____

Snack

No coverage for snack

Carbohydrate coverage only

Carbohydrate coverage plus correction dose when blood glucose is greater than _____ mg/dL and _____ hours since last insulin dose.

Other: _____

Correction dose only:

For blood glucose greater than _____ mg/dL AND at least _____ hours since last insulin dose.

Other: _____

Fixed Insulin Therapy

Name of insulin: _____

_____ Units of insulin given pre-lunch daily

_____ Units of insulin given pre-snack daily

Other: _____

Parental Authorization to Adjust Insulin Dose:

Yes No Parents/guardian authorization should be obtained before administering a correction dose.

Yes No Parents/guardian are authorized to increase or decrease correction dose scale within the following range: +/- _____ units of insulin.

Yes No Parents/guardian are authorized to increase or decrease insulin-to-carbohydrate ratio within the following range: _____ units per prescribed grams of carbohydrate, +/- _____ grams of carbohydrate.

Yes No Parents/guardian are authorized to increase or decrease fixed insulin dose within the following range: +/- _____ units of insulin.

INSULIN THERAPY (Continued)

Student's self-care insulin administration skills:

- Yes No Independently calculates and gives own injections
 Yes No May calculate/give own injections with supervision
 Yes No Requires school nurse or trained diabetes personnel to calculate/give injections

ADDITIONAL INFORMATION FOR STUDENT WITH INSULIN PUMP

Brand/Model of pump: _____ Type of insulin in pump: _____

Basal rates during school: _____

Type of infusion set: _____

- For blood glucose greater than _____ mg/dL that has not decreased within _____ hours after correction, consider pump failure or infusion site failure. Notify parents/guardian.
 For infusion site failure: Insert new infusion set and/or replace reservoir.
 For suspected pump failure: suspend or remove pump and give insulin by syringe or pen.

Physical Activity

- May disconnect from pump for sports activities Yes No
Set a temporary basal rate Yes No _____% temporary basal for _____ hours
Suspend pump use Yes No

Student's self-care pump skills:

- Count carbohydrates
Bolus correct amount for carbohydrates consumed
Calculate and administer correction bolus
Calculate and set basal profiles
Calculate and set temporary basal rate
Change batteries
Disconnect pump
Reconnect pump to infusion set
Prepare reservoir and tubing
Insert infusion set
Troubleshoot alarms and malfunctions

Independent?

- Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No
 Yes No

OTHER DIABETES MEDICATIONS

Name: _____ Dose: _____ Route: _____ Times given: _____
 Name: _____ Dose: _____ Route: _____ Times given: _____

MEAL PLAN

Meal/Snack	Time	Carbohydrate Content (grams)
Breakfast	_____	_____ to _____
Mid-morning snack	_____	_____ to _____
Lunch	_____	_____ to _____
Mid-afternoon snack	_____	_____ to _____

Other times to give snacks and content/amount: _____

Instructions for when food is provided to the class (e.g., as part of a class party or food sampling event): _____

Special event/party food permitted: Parents/guardian discretion
 Student discretion

Student's self-care nutrition skills:

- Yes No Independently counts carbohydrates
 Yes No May count carbohydrates with supervision
 Yes No Requires school nurse/trained diabetes personnel to count carbohydrates

PHYSICAL ACTIVITY AND SPORTS

A quick-acting source of glucose such as glucose tabs and/or sugar-containing juice must be available at the site of physical education activities and sports.

Student should eat 15 grams 30 grams of carbohydrate other _____
 before every 30 minutes during after vigorous physical activity
 other _____

If most recent blood glucose is less than _____ mg/dL, student can participate in physical activity when blood glucose is corrected and above _____ mg/dL.

Avoid physical activity when blood glucose is greater than _____ mg/dL or if urine/blood ketones are moderate to large.

(Additional information for student on insulin pump is in the insulin section on page 6.)

DISASTER PLAN

To prepare for an unplanned disaster or emergency (72 HOURS), obtain emergency supply kit from parent/guardian.

- Continue to follow orders contained in this DMMP.
- Additional insulin orders as follows: _____
- Other: _____

SIGNATURES

This Diabetes Medical Management Plan has been approved by:

Student's Physician/Health Care Provider Date

I, (parent/guardian:) _____ give permission to the school nurse or another qualified health care professional or trained diabetes personnel of (school:) _____ to perform and carry out the diabetes care tasks as outlined in (student:) _____'s Diabetes Medical Management Plan. I also consent to the release of the information contained in this Diabetes Medical Management Plan to all school staff members and other adults who have responsibility for my child and who may need to know this information to maintain my child's health and safety. I also give permission to the school nurse or another qualified health care professional to contact my child's physician/health care provider.

Acknowledged and received by:

Student's Parent/Guardian Date

Student's Parent/Guardian Date

School Nurse/Other Qualified Health Care Personnel Date

Individualized Health Care Plan (IHP)

Student: _____

Grade: _____

Dates: _____

School Year: _____

IHP Completed by and Date: _____

IHP Review Dates: _____

Nursing Assessment Review: _____

Nursing Assessment Completed by and Date: _____

Nursing Diagnosis	Sample Interventions and Activities	Date Implemented	Sample Outcome Indicator	Date Evaluated										
<p>Managing Potential Diabetes Emergencies</p> <p>(risk for unstable blood glucose)</p>	<p>Establish and document student's routine for maintaining blood glucose within goal range including while at school:</p> <p>Blood Glucose Monitoring</p> <ul style="list-style-type: none"> • Where to check blood glucose: <ul style="list-style-type: none"> <input type="checkbox"/> Classroom <input type="checkbox"/> Health room <input type="checkbox"/> Other • When to check blood glucose: <ul style="list-style-type: none"> <input type="checkbox"/> Before breakfast <input type="checkbox"/> Mid-morning <input type="checkbox"/> Before lunch <input type="checkbox"/> After lunch <input type="checkbox"/> Before snack <input type="checkbox"/> Before PE <input type="checkbox"/> After PE <input type="checkbox"/> 2 hours after correction dose <input type="checkbox"/> Before dismissal <input type="checkbox"/> As needed <input type="checkbox"/> Other: _____ • Student Self-Care Skills: <ul style="list-style-type: none"> <input type="checkbox"/> Independent <input type="checkbox"/> Supervision <input type="checkbox"/> Full assistance • Brand/model of BG meter: _____ • Brand/model of CGM: _____ 		<p>Blood glucose remains in goal range</p> <p>Percentage of Time</p> <table border="1" data-bbox="1053 919 1385 982"> <tr> <td>0%</td> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table>	0%	25%	50%	75%	100%	1	2	3	4	5	
0%	25%	50%	75%	100%										
1	2	3	4	5										

Individualized Health Care Plan (IHP) (Continued)

Nursing Diagnosis	Sample Interventions and Activities	Date Implemented	Sample Outcome Indicator	Date Evaluated										
<p>Supporting the Independent Student (effective therapeutic regimen management)</p>	<p>Hypoglycemia Management STUDENT WILL:</p> <ul style="list-style-type: none"> • Check blood glucose when hypoglycemia suspected • Treat hypoglycemia (follow Diabetes Emergency Care Plan) • Take action following a hypoglycemia episode: _____ • Keep quick-acting glucose product to treat on the spot Type: _____ Location: _____ • Routinely monitor hypoglycemia trends r/t class schedule (e.g., time of PE, scheduled lunch, recess) and insulin dosing • Report and consult with parents/guardian, school nurse, HCP, and school personnel as appropriate 		<p>Monitors Blood Glucose (records, reports, and correctly responds to results)</p> <table border="1"> <tr> <td>Never Demonstrated</td> <td></td> <td></td> <td>Consistently Demonstrated</td> <td></td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table>	Never Demonstrated			Consistently Demonstrated		1	2	3	4	5	
Never Demonstrated			Consistently Demonstrated											
1	2	3	4	5										
<p>Supporting Positive Coping Skills (readiness for enhanced coping)</p>	<p>Environmental Management</p> <ul style="list-style-type: none"> • Ensure confidentiality • Discuss with parents/guardian and student preference about who should know student’s coping status at school • Collaborate with parents/guardian and school personnel to meet student’s coping needs • Collaborate with school personnel to create an accepting and understanding environment 		<p>Readiness to Learn</p> <table border="1"> <tr> <td>Severely Compromised</td> <td></td> <td></td> <td>Not Compromised</td> <td></td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table>	Severely Compromised			Not Compromised		1	2	3	4	5	
Severely Compromised			Not Compromised											
1	2	3	4	5										

Hypoglycemia Emergency Care Plan

(For Low Blood Glucose)

Student's Name: _____

Grade/Teacher: _____

Date of Plan: _____

Emergency Contact Information

Mother/Guardian: _____

Email address: _____ Home phone: _____

Work phone: _____ Cell: _____

Father/Guardian: _____

Email address: _____ Home phone: _____

Work phone: _____ Cell: _____

Health Care Provider: _____

Phone number: _____

School Nurse: _____

Contact number(s): _____

Trained Diabetes Personnel: _____

Contact number(s): _____

The student should never be left alone, or sent anywhere alone, or with another student, when experiencing hypoglycemia.

Causes of Hypoglycemia	Onset of Hypoglycemia
<ul style="list-style-type: none"> • Too much insulin • Missing or delaying meals or snacks • Not eating enough food (carbohydrates) • Getting extra, intense, or unplanned physical activity • Being ill, particularly with gastrointestinal illness 	<ul style="list-style-type: none"> • Sudden—symptoms may progress rapidly

Hypoglycemia Symptoms

Circle student's usual symptoms.

Mild to Moderate		Severe
<ul style="list-style-type: none"> • Shaky or jittery • Sweaty • Hungry • Pale • Headache • Blurry vision • Sleepy • Dizzy • Confused • Disoriented 	<ul style="list-style-type: none"> • Uncoordinated • Irritable or nervous • Argumentative • Combative • Changed personality • Changed behavior • Inability to concentrate • Weak • Lethargic • Other: _____ 	<ul style="list-style-type: none"> • Inability to eat or drink • Unconscious • Unresponsive • Seizure activity or convulsions (jerking movements)

Actions for Treating Hypoglycemia

Notify School Nurse or Trained Diabetes Personnel as soon as you observe symptoms.
 If possible, check blood glucose (sugar) at fingertip.
 Treat for hypoglycemia if blood glucose level is less than ____mg/dL.

WHEN IN DOUBT, ALWAYS TREAT FOR HYPOGLYCEMIA AS SPECIFIED BELOW.

Treatment for Mild to Moderate Hypoglycemia	Treatment for Severe Hypoglycemia
<ul style="list-style-type: none"> • Provide quick-acting glucose (sugar) product equal to _____ grams of carbohydrates. Examples of 15 grams of carbohydrates include: <ul style="list-style-type: none"> ○ 3 or 4 glucose tablets ○ 1 tube of glucose gel ○ 4 ounces of fruit juice (not low-calorie or reduced sugar) ○ 6 ounces of soda (½ can) (not low-calorie or reduced sugar) • Wait 10 to 15 minutes. • Recheck blood glucose level. • Repeat quick-acting glucose product if blood glucose level is less than ____mg/dL. • Contact the student's parents/guardian. 	<ul style="list-style-type: none"> • Position the student on his or her side. • Do not attempt to give anything by mouth. • Administer glucagon: _____ mg at _____ site. • While treating, have another person call 911 (Emergency Medical Services). • Contact the student's parents/guardian. • Stay with the student until Emergency Medical Services arrive. • Notify student's health care provider.

Hyperglycemia Emergency Care Plan

(For High Blood Glucose)

Student's Name: _____

Grade/Teacher: _____

Date of Plan: _____

Emergency Contact Information

Mother/Guardian: _____

Email address: _____ Home phone: _____

Work phone: _____ Cell: _____

Father/Guardian: _____

Email address: _____ Home phone: _____

Work phone: _____ Cell: _____

Health Care Provider: _____

Phone number: _____

School Nurse: _____

Contact number(s): _____

Trained Diabetes Personnel: _____

Contact number(s): _____

Causes of Hyperglycemia	Onset of Hyperglycemia
<ul style="list-style-type: none"> • Too little insulin or other glucose-lowering medication • Food intake that has not been covered adequately by insulin • Decreased physical activity • Illness • Infection • Injury • Severe physical or emotional stress • Pump malfunction 	<ul style="list-style-type: none"> • Over several hours or days

Hyperglycemia Signs

Hyperglycemia Emergency Symptoms

(Diabetic Ketoacidosis, DKA, which is associated with hyperglycemia, ketosis, and dehydration)

Circle student's usual signs and symptoms.

- | | |
|---|--|
| <ul style="list-style-type: none"> • Increased thirst and/or dry mouth • Frequent or increased urination • Change in appetite and nausea • Blurry vision • Fatigue • Other: _____ | <ul style="list-style-type: none"> • Dry mouth, extreme thirst, and dehydration • Nausea and vomiting • Severe abdominal pain • Fruity breath • Heavy breathing or shortness of breath • Chest pain • Increasing sleepiness or lethargy • Depressed level of consciousness |
|---|--|

Actions for Treating Hyperglycemia

Notify School Nurse or Trained Diabetes Personnel as soon as you observe symptoms.

Treatment for Hyperglycemia

Treatment for Hyperglycemia Emergency

- | | |
|---|---|
| <ul style="list-style-type: none"> • Check the blood glucose level: _____ mg/dL. • Check urine or blood for ketones if blood glucose levels are greater than: _____ mg/dL. • If student uses a pump, check to see if pump is connected properly and functioning. • Administer supplemental insulin dose: _____. • Give extra water or non-sugar-containing drinks (not fruit juices): _____ ounces per hour. • Allow free and unrestricted access to the restroom. • Recheck blood glucose every 2 hours to determine if decreasing to target range of _____ mg/dL. • Restrict participation in physical activity if blood glucose is greater than _____ mg/dL and if ketones are moderate to large. • Notify parents/guardian if ketones are present. | <ul style="list-style-type: none"> • Call parents/guardian, student's health care provider, and 911 (Emergency Medical Services) right away. • Stay with the student until Emergency Medical Services arrive. |
|---|---|



Polk County School Board Health Services
Diabetes Medical Management Plan for School Year 20 ____ - 20 ____



Student's Name: _____		DOB: _____	Diabetes Type: _____
Date Diagnosed: <u>Select Month from Pulldown</u> (or fill in here: _____) Year: _____			
School: _____		Grade: _____	Home Room: _____
Parent/Guardian #1: _____	Home #: _____	Cell #: _____	Work #: _____
Parent/Guardian #2: _____	Home #: _____	Cell #: _____	Work #: _____
Parent/Guardian's E-mail Address: _____			
Diabetes Healthcare Provider: _____		Phone: _____	Fax: _____
Student's Self-Management Skills		No Supervision Needed	Needs Supervision
Performs and Interprets Blood Glucose Tests		<input type="checkbox"/>	<input type="checkbox"/>
Calculates Carbohydrate Grams		<input type="checkbox"/>	<input type="checkbox"/>
Determines Insulin Dose for Carbohydrate Intake		<input type="checkbox"/>	<input type="checkbox"/>
Determines Correction Dose of Insulin for High Blood Glucose		<input type="checkbox"/>	<input type="checkbox"/>
Student allowed to carry diabetes supplies, determine insulin dose and self-administer insulin		<input type="checkbox"/>	
<i>Students who require no supervision are allowed to carry diabetes supplies and self-administer insulin with written parental and physician authorization, according to Florida Statute.</i>			

Testing Blood Glucose At School	
Test Blood Glucose before administering insulin and as needed for signs/symptoms of high/low blood glucose.	
Additional Blood Glucose Testing at school: <input type="checkbox"/> Yes (Time/s): _____	OR <input type="checkbox"/> No
Target Range for Blood Glucose: _____ mg/dl to _____	

LOW Blood Sugar (HYPO-glycemia) – Test Blood Sugar to Confirm						
Student's Usual Signs and Symptoms				Does student recognize signs of LOW blood sugar? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Low Blood Sugar:	<input type="checkbox"/> Hungry	<input type="checkbox"/> Weak/Shaky	<input type="checkbox"/> Headache	<input type="checkbox"/> Dizziness	<input type="checkbox"/> Inattention/confusion	
Very Low Blood Sugar:	<input type="checkbox"/> Nausea or loss of appetite	<input type="checkbox"/> Slurred speech	<input type="checkbox"/> Clamminess or sweating	<input type="checkbox"/> Blurred vision	<input type="checkbox"/> Loss of consciousness	<input type="checkbox"/> Other _____
Management of Low Blood Glucose (below _____ mg/dl)						
<ol style="list-style-type: none"> If student is awake and able to swallow: give 15 grams fast-acting carbohydrates such as: 4 oz. fruit juice or non-diet soda or 3-4 glucose tablets or concentrated gel or tube frosting or 8 oz. milk or Other: ____ Retest blood glucose 10-15 minutes after treatment. Student remains in clinic during treatment. Repeat the above treatment until blood glucose is over _____ mg/dl. Follow treatment with snack of _____ grams of carbohydrates if more than one hour until next meal/snack or if going to activity. Notify parent when blood glucose is below _____ mg/dl. Delay exercise if blood glucose is below _____ mg/d 						
If student is unconscious or having a seizure, call 911 immediately and notify parents. Position student on side if possible. If wearing an insulin pump, place pump in suspend/stop mode or disconnect/cut tubing.						
<input type="checkbox"/> Glucose gel: One tube administered inside cheek and massaged from outside while waiting or during administration of Glucagon.						
<input type="checkbox"/> Glucagon: _____ mg administered by trained personnel. Glucagon is stored in _____.						

Student's Name: _____

HIGH Blood Sugar (HYPER-glycemia)					
Student's Usual Signs and Symptoms			Does the student recognize signs of HIGH blood sugar? <input type="checkbox"/> Yes <input type="checkbox"/> No		
High Blood Sugar:	<input type="checkbox"/> Increased thirst and/or urination	<input type="checkbox"/> Tired/drowsy	<input type="checkbox"/> Blurred vision	<input type="checkbox"/> Warm, dry or flushed skin	<input type="checkbox"/> Weakness/ muscle aches
Very High Blood Sugar:	<input type="checkbox"/> Nausea/ vomiting	<input type="checkbox"/> Abdominal pain	<input type="checkbox"/> Extreme thirst	<input type="checkbox"/> Fruity breath odor	<input type="checkbox"/> Other: ____
<p>Management of High Blood Glucose (over _____ mg/dl)</p> <ol style="list-style-type: none"> 1. Refer to the Insulin Administration section below for designated times insulin may be given. 2. Give water or other calorie-free liquids as tolerated and allow frequent bathroom privileges. 3. Check ketones if blood glucose over _____ mg/dl. 4. Notify parent if ketones positive and/or glucose over _____ mg/dl. <p>In addition to steps above for management of high blood glucose, also follow steps below for very high blood glucose over _____ mg/dl.</p> <ol style="list-style-type: none"> 5. If unable to reach parents, call diabetes care provider. (Medical orders must be in writing. No verbal orders accepted.) 6. If unable to reach parents or physician stay with student and document changes in status. Call 911 for labored breathing, very weak, confused or unconscious. 7. Retest blood glucose in _____ hours if above _____ mg/dl. 8. Delay exercise if blood glucose is above _____ mg/dl. 					

Insulin Administration	
Insulin correction for high blood glucose at school, indicate times: <input type="checkbox"/> Before Breakfast <input type="checkbox"/> Before Lunch <input type="checkbox"/> Other time: _____	
May NOT repeat insulin correction dose within _____ hours of a correction dose for high blood glucose.	
Type of Insulin at school:	<input type="checkbox"/> Humalog <input type="checkbox"/> Novolog <input type="checkbox"/> Apidra <input type="checkbox"/> NPH <input type="checkbox"/> Lantus <input type="checkbox"/> Levemir <input type="checkbox"/> Other: ____
Method of Insulin delivery at school:	<input type="checkbox"/> Pen <input type="checkbox"/> Syringe <input type="checkbox"/> Insulin Pump: Pump will calculate insulin dose. Note: If B/G ≤ 250 or ≥ 250 and negative/trace ketones , pump will prescribe insulin dose. If pump fails, use pen/syringe to administer insulin per sliding scale below. Indication of possible pump failure is BG > 250 and moderate or large ketones .

High Blood Sugar Correction Dose – Use Insulin Sliding Scale				
Blood sugar _____ to _____	Insulin Dose = _____ units		Blood sugar _____ to _____	Insulin Dose = _____ units
Blood sugar _____ to _____	Insulin Dose = _____ units		Blood sugar _____ to _____	Insulin Dose = _____ units
Blood sugar _____ to _____	Insulin Dose = _____ units		Blood sugar _____ to _____	Insulin Dose = _____ units

Carbohydrate Insulin Dose	
Insulin for carbohydrates eaten at school, indicate times:	
<input type="checkbox"/> Before Breakfast <input type="checkbox"/> Before Lunch <input type="checkbox"/> Other time: _____	Give one unit of insulin per _____ grams of carbs.

I hereby authorize the above named physician and Polk County Schools/Florida Department of Health in Polk County staff to reciprocally release verbal, written, faxed, or electronic student health information regarding the above named child for the purpose of giving necessary medication or treatment while at school. I understand Polk County School District protects and secures the privacy of student health information as required by federal and state law and in all forms of records, including, but not limited to, those that are oral, written, faxed or electronic. I request that my child be assisted in taking the medication or treatment described above at school by authorized persons as permitted by me and my physician. I understand that all snacks and supplies are to be furnished/restocked by parent.

Parent/Guardian Signature: _____ Date: _____

Physician's/Mid-Level Practitioner's Signature: _____ Date: _____

School Health Registered Nurse Signature: _____ Date: _____

Place Office Stamp Here



Appendix C: School Food Service Guide on Diabetes and Carbohydrate Counting in Schools, page 67

School Food Service Guide on Diabetes and Carbohydrate Counting in Schools

What is your role as School Food Service Staff?

School food service staff provides nutritious and balanced meals for all students, including students with diabetes. Some county school districts have published carbohydrate counts for each week's menu, available upon request.

The school food service staff must keep information about students with diabetes readily available. The food service manager and lunchroom staff/aides should be knowledgeable about activation of emergency services. If a student with diabetes appears distressed, the food service manager or lunchroom aide will facilitate the student's safe transport to the school health office for monitoring and/or assessment by the assigned school RN.

The school food service manager must be able to provide information on carbohydrate content and other nutrition information in purchased foods being served in the school upon request from students, parents, and/or school nurses.

What do you need to know?

As a school food service employee, a basic understanding of carbohydrates is important. **Carbohydrate** is one of the three main nutrients in food. Foods that provide carbohydrate are grain-based starches, vegetables, fruits, dairy products and simple sugars.

Calorie is a unit representing the energy provided by food. Carbohydrate, protein, fat and alcohol provide calories in the diet. Carbohydrate and protein have 4 calories per gram, fat has 9 calories per gram, and alcohol has 7 calories per gram.

Blood glucose is the main sugar found in the blood and is the body's main source of energy. This is also sometimes called blood sugar. All foods and beverages consumed and that contain calories are eventually converted to glucose (sugar) in the blood. Carbohydrates are converted more quickly to glucose and can rapidly raise the glucose content in the blood.

According to the American Diabetes Association, appropriate diabetes care in the school is necessary for the student's long-term well-being and optimal academic performance. Even mild low blood glucose levels can lead to immediate consequences in the classroom such as a decrease in cognition, lack of attention to detail and difficulty with decision making. Extremely low blood glucose levels can cause unconsciousness or even death. High blood glucose levels can contribute to long-term complications such as damage to the eyes, kidneys, nerves and blood vessels.

What is Diabetes?

Diabetes results from a lack of insulin (a hormone produced in and secreted by the pancreas) in the body or the decreased ability of one's body to utilize insulin they produce. Insulin is essential for glucose (sugar produced from food) to enter body cells where it is converted into energy.

➤ Two Types of Diabetes*

○ **Type 1**

- For Type 1 diabetes, the body does not produce insulin. Type 1 is usually diagnosed in children and once was commonly known as “juvenile” diabetes. However, Type 1 diabetes can occur at any age. Children with Type 1 diabetes are usually not overweight and may have lost weight prior to diagnosis. Insulin injections must be taken daily. Even though Type 1 diabetes accounts for only 5 to 10 percent of diabetes cases because it is often diagnosed in childhood it will likely account for many of your students with diabetes.

○ **Type 2**

- For Type 2 diabetes, the body either does not produce enough insulin or does not make efficient use of the insulin it does produce. Type 2 diabetes is the most common form of diabetes and used to be called “adult onset” diabetes. However Type 2 diabetes can occur at any age and accounts for 90 to 95 percent of diabetes cases. Type 2 diabetes is increasing among Americans of all ages, including children.

**In managing both Type 1 and Type 2 diabetes, diet, medication, and exercise must stay in balance in order to keep blood sugar levels within a normal range.*

Symptoms

Symptoms that may occur due to high or low blood sugar include frequent urination, excessive thirst, unexplained weight loss, extreme hunger, vision changes, and feeling very tired. It is important to note that symptoms that may occur due from diabetes are different for everyone. Symptoms can vary with each student as well as each hypoglycemic event. Some children will not have an awareness of low or high blood sugar symptoms.

Treatment

There is no cure for diabetes but good health care and self-management can greatly improve the health outcome for children with diabetes. Achieving good blood glucose control usually requires frequent blood glucose monitoring, regular physical activity, nutrition therapy, and may require multiple doses of insulin per day or insulin administered with an infusion pump.

maintaining normal, or close to normal, blood sugar levels lower their risk of complications and enjoy a better quality of life.

Meal Planning

Meal planning begins with the written diet order or prescription. These nutrition related diet orders should be on file with the school nurse as well as the school food service department. The goal of meal planning is to provide the student with diabetes a nutritionally balanced meal that provides adequate calories for normal growth and development and promotes normal blood sugar levels. Meal planning is accomplished through the use of exchange lists (foods of similar content from carbohydrates, protein, and fat) or by counting carbohydrates.

Carbohydrate Counting

This is a method of meal planning for people with diabetes based on counting the number of grams of carbohydrate in food. The grams of carbohydrates are then balanced with an appropriate dose of insulin. The carbohydrate-to-insulin ratio should be determined on an individual basis in conjunction with the diabetes healthcare team.

Determining the Amount of Carbohydrates In a Certain Food *with* a Nutrition Facts Label

- The most accurate way to determine how many carbohydrates are in foods will be by reading the food label for each food item.
- There are three main types of carbohydrates in food. They are starch, sugar and dietary fiber. The nutrition label will have all three carbohydrates totaled together under total carbohydrates.
 - **Starches**- peas, corn, lima beans and potatoes
 - **Sugar**- naturally occurring sugars such as those in milk and fruit, and also added sugars such as those added during processing such as fruit canned in heavy syrup or sugar added to make a cookie.
 - **Fiber**-beans, legumes, fruits, vegetables, whole grains, whole-wheat pasta, whole grain cereal, whole grain breads, and nuts.
- When reading the food label the two most important lines with carbohydrate counting are the serving size and the total carbohydrate amount.
 - Look at the serving size. All the information on the label reflects the portion per serving size of the food item. If a larger serving will be offered, such as a double portion, then you will need to double the nutritional information listed on the label.
 - If the item has more than 5 grams of fiber, subtract $\frac{1}{2}$ the amount of fiber from the total carbohydrate. The example label below only has 1g of fiber, so you do not subtract it.

- Look at the grams of total carbohydrates
 - Total carbohydrates on the label include sugar, starch, and fiber.
 - In order to determine the portion size equivalent, the amount of carbohydrate consumption should be known.

Example Label

Nutrition Facts	
Serving Size 8 Crackers (28g)	
Amount per serving	
Calories 120	Fat Calories 30
% Daily Value	
Total Fat 3.5g	5%
Saturated Fat 1g	5%
Trans Fat 0g	
Polyunsaturated Fat 1.5g	
Monounsaturated Fat 0.5g	
Cholesterol 0mg	0%
Sodium 140mg	6%
Total Carbohydrate 22g	7%
Dietary Fiber less than 1g	3%
Sugars 7g	
Protein 2g	
Vitamin A 0%	Vitamin C 0%
Calcium 10%	Iron 4%

Check the serving size:
8 Crackers
Be sure this is the amount that will be served.

This number -28g- is the weight of the crackers, not the amount of carbohydrate in the serving.

Count the total carbohydrates: Serving Size=8 crackers

- 8 crackers (one serving) = 22 g of carbohydrates
- 16 crackers (two servings) =44 g of carbohydrates

You do not need to count sugars or fiber separately because they are already counted as part of the total carbohydrate.

Determining the Amount of Carbohydrates In a Certain Food without a Nutrition Facts Label

- The carbohydrate count for foods without a label can only be estimated.
- The basic carbohydrate chart listed on the next page can be used to assist in the estimation of each food item.
- When preparing recipes, keep in mind that fresh fruit, vegetables, grains, and many other ingredients contain carbohydrates.
- Look out for sugar and starches in the ingredients, all increase the carbohydrate content of food.
 - Starches can be called many things including but not limited to:
 - Bread Crumbs
 - Cornstarch
 - Corn Flour
 - Flour
 - Masa
 - Potato Flour
 - Potato Starch
 - Sugar has a similar profile and can be called many things, including but not limited to:
 - Barley Sugar
 - Brown Rice Sugar
 - Brown Sugar
 - Cane Sugar
 - Corn Sweetener
 - Corn Syrup
 - Corn Syrup Solids
 - Dextrose
 - Fructose
 - Fruit Juice Concentrate
 - Glucose
 - Honey
- When estimating the carbohydrate amounts without a label, general serving sizes should be used. Please reference the serving sizes for each food component reflected in the new USDA meal pattern requirements offered during meal service.

Basic Carbohydrate Chart

Carbohydrates	Carbohydrate (grams)
Bread/Grains - Complex Carbohydrates	15
Fruit	15
Milk	12
Other Carbohydrates - Simple Carbohydrates	15
Non - Starchy Vegetables	5
Starchy Vegetables	15

Complex carbohydrates, often referred to as "starchy" foods, include:

- Legumes
- Starchy vegetables
- Whole-grain breads and cereals

Simple carbohydrates that contain vitamins and minerals occur naturally in:

- Fruits
- Milk and milk products
- Vegetables

Simple carbohydrates are also found in processed and refined sugars such as:

- Candy
- Regular (non-diet) carbonated beverages, such as soda
- Syrups
- Table sugar

Refined sugars provide calories, but lack vitamins, minerals, and fiber. Such simple sugars are often called "empty calories" and can lead to weight gain.

Healthy Sources of Carbohydrates Include:

- **Whole Grains:** 100% whole wheat bread, oats, brown rice, etc.
- **Fruit:** Fresh, frozen, or canned without added sugars
- **Starchy Vegetables:** Potatoes, sweet potatoes, butternut squash, corn, green peas and pumpkin
- **Beans and Legumes:** Dried beans, canned beans, or lentils
- **Low-Fat or Fat Free Dairy:** Milk, yogurt and cheese

General Examples:

Bread/Grain- Complex Carbohydrates	Carbohydrates (grams)
2 Slices-wheat bread 2oz	30g
Dry cereal 1/2 c	15g

Other Carbohydrates- Simple Carbohydrates (Processed and refined sugars)	Carbohydrates (grams)
Honey 1Tbsp	17 g
Sugar 1Tbsp	15g

Milk	Carbohydrates (grams)
Low fat unflavored milk-8oz	12g
Fat free flavored milk-8oz	18g

Fruit Simple Carbohydrates (Naturally occurring)	Carbohydrates (grams)
Fresh peach–medium 1/2 c	15g
Pears–canned, light syrup 1/2 c	20g

Vegetables		Carbohydrates (grams)
Romaine lettuce 1c	Dark Green	1g
Carrots frozen 1/2 c	Red & Orange	6g
Black beans 1/2 c	Bean & Pea	16g
Corn–frozen yellow 1/2 c	Starchy	16g
Green beans 1/2 c	Other	5g

*This list is not inclusive of all foods.

Other Key Points to Know as a Food Service Manager:

- Retain all original diet prescriptions in the cum folder and copies in the health record and cafeteria.
- The physician or appropriate health professional should only change diet prescriptions.
- Maintain documentation of conversations with parents and health care professionals regarding special diets.
- When planning special school events and field trips, consider the students with diabetes and other special diet needs.
- Provide regular in-service training for staff that shares the responsibility for meeting the nutritional needs of the student with diabetes.

Going Further

Helpful Resources:

<p>American Diabetes Association Living with Diabetes- Safe at School.</p>	<p>http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/?utm_source=Offline&utm_medium=Print&utm_content=SafeatSchool&utm_campaign=SAS</p>
<p>American Diabetes Association Carbohydrate Counting</p>	<p>http://www.diabetes.org/food-and-fitness/food/planning-meals/carb-counting/?loc=ff-diabetesmealplans</p>
<p>Centers for Disease Control and Prevention Help Your Child Manage Diabetes At School</p>	<p>http://www.cdc.gov/features/DiabetesInSchool/</p>
<p>Juvenile Diabetes Research Foundation Type 1 Diabetes in School</p>	<p>http://jdrf.org/life-with-t1d/starting-school/</p>
<p>National Diabetes Education Program Diabetes Resources for Schools and Youths</p>	<p>http://ndep.nih.gov/hcp-businesses-and-schools/Schools.aspx#schools</p>
<p>National Food Service Management Institute Using Exchange Lists for Students with Diabetes in School Food Service Webinar</p>	<p>http://www.nfsmi.org/ResourceOverview.aspx?ID=315</p>
<p>School Nutrition Association (Search Diabetes for more information)</p>	<p>http://www.schoolnutrition.org/</p>
<p>University of Florida's Diabetes Center of Excellence Diabetes at School</p>	<p>http://diabetes.ufl.edu/my-diabetes/children-teens-and-young-adults/diabetes-at-school/</p>

Disclaimer: The data contained within this guide is for educational purposes and is not intended to substitute prescribed diet or substitute for medical advice. Please consult a medical professional for assistance in planning for or treating medical conditions.



Appendix D: Sample Checklists

- Sample Delegation Checklist, page 79
- Sample Skills Checklist, page 81

Sample Delegation Check List

If one or more items checked as “no”, it is recommended that more in-depth preparation is needed before delegation to unlicensed assistive personnel will be safe.

CRITERIA FOR DELEGATION	Yes	No
School Registered Nurse		
Has developed an Individualized Health Care Plan (IHCP) approved by parent/guardian		
Has established communication links between RN &: parent/guardian, healthcare provider, and delegated unlicensed assistive person (UAP) for supervision, monitoring, and consultation		
Unlicensed Assistive Personnel		
Has completed all necessary training		
Has demonstrated skill competence		
Parent/Guardian		
Has signed an agreement or approved the IHCP and the use of the selected UAP		
Has signed any required written authorizations		
Has provided all necessary equipment and supplies		
Has completed diabetes history information forms		
Has provided all required emergency information		
Student		
Is medically stable		
If able, has completed initial diabetes education		
If capable of performing tasks, has demonstrated skill competence		
Agrees to follow local policies & procedures		
Healthcare Provider		
Has provided required diabetes history, information and authorization forms		
Has signed a statement indicating students level of independent functioning		
Has been sent a copy of IHCP and notice of selected services being provided by UAP		
Has provided specific written orders related to insulin or oral diabetes medications		

This checklist is from the *Role of the Professional School Nurse in the Delegation of Care in Florida Schools* (2006), Reviewed 2010

Sample Skills Checklist

Using Blood Glucose Meter, Checking Urine Ketones, Calculating Insulin Dose, Administering Insulin and/or Glucagon

Student: _____

Person trained: _____

Position: _____

Instructor should insert the date and their initials after each procedure they demonstrate and review

Glucose Meter	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> 1. Glucose meter 2. Test strips 3. Lancing device or lance 4. Cotton ball, tissue, bandaid 5. Disposable exam gloves 6. Blood glucose log and pen/pencil 7. Sharps container 				
Steps: <ol style="list-style-type: none"> 1. Wash hands and put on gloves. 2. Follow meter-specific procedure: <ol style="list-style-type: none"> a. Match code # of test strips to that in the meter. b. Select site for blood glucose sampling, preferably the side of the student's finger. c. Obtain the sample using the designated lancing device and universal precautions. d. Dose the test strip appropriately. e. Offer the student a cotton ball, tissue and/or bandaid as needed. f. Discard the lancet in sharps container. 3. Remove and discard gloves into a designated container, and wash hands. 4. Verify the blood sugar results on the machine's display window. 5. Write the result on the blood glucose log with date and time. 6. Notify personnel as appropriate. 7. Confirm appropriate action per IHCP. If blood sugar is over the target, determine how long since the student's last carbohydrate intake/insulin dose before determining corrective action. (If less than 2 hours, giving additional insulin should be done only per IHCP or with direct order from diabetes care provider.) 8. Sanitize the machine in accordance with manufactures specifications. 				

Urine Ketone Testing	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> 1. Urine ketone test strip (in vial or foil wrapper) 2. Urine collection cup 3. Disposable exam gloves 				
Steps: <ol style="list-style-type: none"> 1. Ask the student to collect a urine sample in a cup. 2. Don the exam gloves and dip the test pad on the end of a test strip into the urine sample, shake off excess, and allow the strip to react for the recommended time. 3. At the end of the time interval, compare the test pad to the ketone color chart on the side of the bottle or card. 4. Record the ketone test result as negative, trace, small, moderate, or large. 5. If ketones test positive, refer to IHCP for corrective action and notification. 6. Discard the test strip, gloves, and remainder of sample appropriately 7. Wash hands. 				

Calculating Insulin Bolus Dose based on Carbohydrate Intake	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> 1. Carbohydrate Table (1 serving = 15 Gm of fruit, starch, or milk group) 2. Paper and pen/pencil 3. Calculator (optional) 				
Steps: <ol style="list-style-type: none"> 1. Describe the time when bolus insulin is usually given. 2. Verify the student's insulin: carbohydrate ratio. 3. Correctly identify the number of grams of carbohydrate intake. 4. Demonstrate the correct calculation of the insulin dose. 				

Determining Insulin Dose for Correction of High blood Glucose based on Carbohydrate Intake	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> 1. Carbohydrate Table (1 serving = 15 Gm of fruit, starch, or milk group) 2. Paper and pencil/pen 				

Determining Insulin Dose for Correction of High blood Glucose based on Carbohydrate Intake	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
3. Calculator (optional)				
Steps: <ol style="list-style-type: none"> Describe the time when bolus insulin is usually given. Verify the student's insulin: carbohydrate ratio. Correctly identify the number of grams of carbohydrate intake. Demonstrate the correct calculation of the insulin dose. 				

Determining Insulin Dose for Correction of High Blood Glucose based on Correction Formula or "Sliding Scale"	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> High blood glucose correction formula or "sliding scale" from provider Paper and pen/pencil Calculator (optional) 				
Steps: <ol style="list-style-type: none"> Confirm that it has been at least 2 hours since the student's last carbohydrate intake or insulin dose before giving insulin. If using "sliding scale": find the blood sugar range containing the student's current blood sugar and prescribed insulin dose, if any. If using correction formula: correctly calculate the insulin dose needed to correct the current blood sugar. If appropriate for student, add correction dose to bolus for carbohydrate to be eaten, determining total amount to be given as one injection. 				

Insulin Pen	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> Insulin pen with cartridge or disposable pre-filled pen as provided Pen needles Alcohol wipes Needle remover 				
Steps: <ol style="list-style-type: none"> Verify the correct dose per physician order. Check expiration date and date first used. 				

Insulin Pen	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
<ol style="list-style-type: none"> 3. If NPH, 75/25, 70/30 are being given, gently rock the pen back and forth 3-4 times to mix the insulin before injection. 4. Wipe rubber diaphragm with alcohol and attach pen needle. 5. Perform an “air shot” of 2 units before dialing in desired insulin dose. (If pen or cartridge is new, may require 6-8 units to obtain a steady stream of insulin). 6. Verify the number dialed into the window of the pen. 7. Select and prepare the injection site, based on planned site rotation and in accordance of the DMMP or local policy. 8. Administer the injection using a 90⁰ angle. Leave the needle in for 6+ seconds after the push button is fully depressed. 9. Remove the pen needle using the needle remover and discard in appropriate container. 10. Write the number on the date log. 11. Notify personnel as appropriate. 12. Confirm appropriate action per IHCP. 13. Store the pen in use at room temperature. 14. Replace the pen when empty or when it has reached the time limit specified by the manufacture. 				

Insulin (Syringe and Vial)	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: <ol style="list-style-type: none"> 1. Insulin vial 2. Insulin syringe 3. Alcohol wipes 4. Sharps container 				
Steps: <ol style="list-style-type: none"> 1. Check the vial for correct insulin type according to physician order. 2. Roll cloudy insulin gently 3-4 times between palms to evenly suspend. 3. Verify the correct dose per physician order. 4. Draw up the correct dose into the syringe having eliminated air bubbles. 5. Double-check/verify the dose. 6. Select and prepare the injection site, based on planned site rotation and in accordance of the DMMP or local policy Administer injection using a 90⁰ angle. 				

Insulin (Syringe and Vial)	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
7. Do not re-cap the needle. 8. Discard the used syringe in a sharps container. 9. Document the injection appropriately. 10. Notify personnel as appropriate. 11. Assure appropriate action per IHCP.				

Glucagon	Demo Date	Return Demo Date	Return Demo Date	Return Demo Date
States name and purpose of procedure				
Identify Supplies: 1. Glucagon emergency kit 2. Alcohol wipes				
Steps: 1. Instruct helper to call 911. (If alone, call 911 first, then proceed.) 2. Check for expiration date on kit. 3. Check for glucagon dose, ½ or 1 mg. (marked clearly on kit). 4. Remove the flip-top seal from the glucagon vial. 5. Remove the needle cover from the syringe and inject the entire contents into the vial. 6. Shake the vial gently until the solution is clear. 7. Draw up the glucagon into the syringe, hold the needle upright, tap, and push out air. 8. Prepare the site with alcohol (if quickly available). 9. Insert the needle into the appropriate site (buttock, arm, or thigh) at 90° angle and inject the glucagon. 10. Return the used syringe temporarily to red/orange box until it can be properly discarded. 11. Keep the student positioned on their side in case of vomiting, staying with the student until EMS arrives. 12. Notify parent/personnel/provider as appropriate. 13. Confirm other appropriate action per IHCP.				

Instructor/ Reviewer Signature

Date



Appendix E: Diabetes Medications

- Medications Used to Treat/Prevent High Blood Glucose in Diabetes, page 89
- Storing Insulin at Room Temperature, page 92

MEDICATIONS USED TO TREAT/PREVENT HIGH BLOOD GLUCOSE IN DIABETES

INSULINS						
Name of Insulin	Class	Onset	Peak	Duration	Appearance	How to Blend
Humalog® <i>Lispro</i>	Rapid	10-15 min	90-150 min	3-4 hrs	clear	n/a
Novolog® <i>Aspart</i>	Rapid	10-15 min	60-180 min	3-5hrs	clear	n/a
Apidra® <i>Glulisine</i>	Rapid		40-120 min	3-4hrs	clear	n/a
Regular	Fast	30-60 min	2-4 hrs	6-9 hrs	clear	n/a
NPH	Intermediate	2-4 hrs	6-9 hrs	12-15hrs	cloudy	roll
Lantus® <i>Glargine</i>	Very long	2 hrs	6hrs (minimal)	10-24 hrs	clear	n/a
Levemir® <i>Detemir</i>	Long	2 hrs	5-6hrs.	10-20 hrs	Clear	n/a
70/30 (N+Novolog)	Pre-mixed	30-60 min	2-4 and 6-8 hr	12-15 hrs	cloudy	roll
75/25 (N+Humalog)	Pre-mixed	10-15 min			cloudy	roll
50/50 (N+ Humalog)	Pre-mixed	30-60 min			cloudy	roll

ORAL DIABETES MEDICATION FOR TYPE 2 DIABETES*

Biguanides

Generic (Brand)	Daily Dosage	Onset	Duration	When Taken	Frequency
Metformin (Glucophage) (Sometimes called Metformin IR "immediate release)	500 – 2550mg	< 1 hour	6 hours	With breakfast and/or dinner (may also be taken at lunch)	1 to 3 times/day
Metformin Extended Release (Glucophage XR, SR, 24, Duramet)	500 – 2000mg		Maximum concentration occurs within 4-8 hours	With evening meal	1 time/day (can be split if patient prefers)
Liquid Metformin (Riomet)	500-2550mg (500mg/mL)	< 1hr	6 hours	With breakfast and/or dinner (may also be taken at lunch)	1 to 3 times/day

Thiazolidinediones (TZD's)

Generic (Brand)	Daily Dosage	Onset	Duration	When Taken	Frequency
Rosiglitazone (Avandia)	4-8mg		>24 hours	1 or 2 times daily with or without food	1-2 times/day
Pioglitazone (Actos)	15-45mg		>24 hours	With or without food	1 time/day

Meglitinides

Generic (Brand)	Daily Dosage	Onset	Duration	When Taken	Frequency
Repaglinide (Prandin)	1.5 – 16mg	Immediately	1 – 30 minutes before meals	At mealtimes (skip if not eating)	1-3 times/day
Nateglinide (Starlix)	60 – 360mg	Immediately	1 – 30 minutes before meals	At mealtimes	1-3 times/day

Alpha-Glucosidase Inhibitors					
Generic (Brand)	Daily Dosage	Onset	Duration	When Taken	Frequency
Acarbose (Precose)	75 – 300mg	Immediate	6 hours	Before first bite of each main meal	3 times/day
Miglitol (Glyset)	75 – 300mg	Immediate	6 hours	Before first bite of each main meal	3 times/day

Incretin Enhancers					
Alogliptin (Nesina)	6.25-25mg/day	Tablet 6.25, 12.5, 25 mg	24 hours	Any time of day	1 time/day
Sitagliptin (Januvia)	100 mg/day	Tablet- 25, 50, 100 mg	24 hours	Any time of day	1 time/day
Saxagliptin (Onglyza)	2.5 – 5 mg/day	Tablet- 2.5, 5 mg	24 hours	Any time of day	1 time/day
Linagliptin (Tradjenta)	5 mg/day	Tablet 5 mg	24 hours	Any time of day	1 time/day

Sodium-Glucose Cotransporter Inhibitor (SGLT2)					
Canagliflozin (Invokana)	100-300mg/day	Tablet- 100 mg, 300 mg	24 hours	Before first meal of day	1 time/day
Dapagliflozin (Farxiga)	5-10mg/day	Tablet 5 mg, 10 mg	24 hours	Before first meal of day	1 time/day

Combination Medications for Type 2 Diabetes*				
Brand	Medications	Daily Dosage	When Taken	Frequency
Glucovance	Glyburide + Metformin	Glyburide – up to 20mg Metformin – up to 2000mg	With meal on a full stomach	1-2 times/day
Avandamet	Avandia + Metformin	Avandia – up to 8mg Metformin- up to 2000mg	With meal on a full stomach	1-2 times/day
Metaglip	Metformin + Glipizide	Metformin – up to 2000mg Glipizide – up to 20mg	With meal on a full stomach	1-2 times/day
Janumet	Sitagliptin + Metformin	Januvia –up to 100 mg Metformin-up to 2000 mg	With meal on a full stomach	2 times/day
Janumet XR	Sitagliptin + MetforminER	Januvia –up to 100 mg Metformin-up to 2000 mg	With meal on a full stomach	1 time/day
Kombiglyze	Saxagliptin + Metformin XR	Saxagliptin – up to 5mg Metformin – up to 2000 mg	With meal on a full stomach	1 time/day usually in evening
Jentadueto	Linagliptin + Metformin	Linagliptin – up to 5 mg Metformin - up to 2000 mg	With meal on a full stomach	2 times/day
Oseni	Alogliptin + Pioglitazone	Alogliptin- up to 25 mg Pioglitazone up to 45 mg	May be taken with or without food	1 time/day
Actoplus Met	Pioglitazone + Metformin	Pioglitazone-up to 45mg/day Metformin- up to 2550mg/day	With meal on a full stomach	1-2 times/day
Prandimet	Repaglinide + Metformin	Repaglinide-10mg Metformin – 2500 mg	0-30 minutes before meal	2-3 times/day at meals (skip if not eating)
Duetact	Pioglitazone + Glimiperide	Pioglitazone- up to 30 mg/day Glimiperide- up to 4 mg/day	With first main meal	1 time/day

OTHER INJECTABLES FOR TYPE 2 DIABETES*

Incretin Mimetics					
Brand	Dosage	Route	Duration	When Taken	Frequency
Exenatide (Byetta)	5-10mcg/day	SQ pen injection	10 hours	Before AM and evening meals	2 times/day
Exenatide QWK (Bydureon)	2 mg/week	SQ injection (vial, diluent-filled syringe, connector and needles supplied)	7 days	Any time of day	1 time/week
Liraglutide (Victoza)	0.6-1.8mg/day	SQ pen injection	24 hours	Any time of day	1 time/day

* These drugs are used in Type 2, hybrid, and other forms of diabetes but are not appropriate primary therapy in Type 1 diabetes in children or adults.

STORING INSULIN AT ROOM TEMPERATURE

Product Name	Product Type	Room Temperature (up to 86°F Unless Otherwise Stated)	Manufacture
<i>Rapid-Acting</i>			
Humalog	Vial Cartridge KwikPen	28 days 28 days 28 days	Lilly
Novolog	Vial Cartridge FlexPen Pump	28 days 28 days 28 days Up to 6 days	Novo Nordisk
Apidra	Vial SoloStar Pen	28 days up to 77°F 28 days up to 77°F	Sanofi-Aventis
<i>Short-Acting</i>			
Regular Humulin Novolin	Vial Vial	28 days 42 days	Lilly Novo Nordisk
<i>Intermediate-Acting</i>			
NPH Humulin Novolin	Vial Pen Vial	28 days 14 days 42 days	Lilly Novo Nordisk
<i>Insulin Mixtures</i>			
70/30 (NPH/Regular) Humulin 70/30 Novolin 70/30	Vial Pen Vial	28 days 10 days 42 days	Lilly Novo Nordisk
Humalog Mix 50/50	Vial KwikPen	28 days 10 days	Lilly
Humalog Mix 75/25	Vial KwikPen	28 days 10 days	Lilly
Novolog Mix 70/30	Vial FlexPen	28 days 14 days	Novo Nordisk
<i>Long-Acting</i>			
Lantus	Vial SoloStar Pen	28 days 28 days	Sanofi-Aventis
Levemir	Vial FlexPen	42 days 42 days	Novo Nordisk

IMPORTANT!

Do not use insulin that looks discolored, clumped after rolling, or crystallized. Do not use insulin that has been frozen or exposed to excess heat. Discard and obtain a fresh vial or pen.

An insulin pen should not be returned to the refrigerator after first use. Store at room temperature as above.



Appendix F: Additional Guidelines

- Diabetes Management During Pregnancy*, page 93
- Students With Chronic Illnesses: Guidance for Families, Schools, and Students, page 101

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Joslin Diabetes Center and Joslin Clinic Guideline for Detection and Management of Diabetes in Pregnancy

9/10/2010: Revised 06-15-11

The Joslin Guideline for Detection and Management of Diabetes in Pregnancy is designed to assist internal medicine specialists, endocrinologists and obstetricians in individualizing the care of and setting goals for women with pre-existing diabetes who are pregnant or planning pregnancy. It is also a guide for managing women who are at risk for or who develop Gestational Diabetes Mellitus (GDM). This Guideline is not intended to replace sound medical judgment or clinical decision-making. Clinical judgment determines the need for adaptation in all patient care situations; more or less stringent interventions may be necessary.

The objectives of the Joslin Guideline for Detection and Management of Diabetes in Pregnancy are to support clinical practice and to influence clinical behaviors in order to improve clinical outcomes and assure that patient expectations are reasonable and informed. Guidelines are developed and approved through the Clinical Oversight Committee that reports to the Chief Medical Officer of the Joslin Diabetes Center. The Guideline is established after careful review of current evidence, medical literature and sound clinical practice. This Guideline will be reviewed periodically and modified as clinical practice evolves and medical evidence suggests.

SCREENING FOR GESTATIONAL DIABETES MELLITUS

See *Screening Strategy to Detect GDM* Algorithm

PRECONCEPTION CARE

Pre-existing type 1 or type 2 diabetes

Glucose Goals Prior to Conception	<ul style="list-style-type: none"> • Fasting and pre-meal blood glucose: Plasma* 80-110 mg/dl • 1 hour postprandial blood glucose: 100-155 mg/dl • A1C < 7%; and as close to normal as possible without resulting severe hypoglycemia • Avoid severe hypoglycemia
Counseling	<ul style="list-style-type: none"> • Educate women of childbearing age about the importance of near normal blood glucose control prior to conception • Refer to a maternal fetal-medicine and/or endocrinologist/diabetes specialist for counseling, assessment of maternal and fetal risk and guidance in achieving management goals. This includes all women who are planning pregnancy and women who are not planning pregnancy but are using inadequate contraception and have an A1C greater than 7%. • Assess diabetes self-management, including meal plan, insulin care and use, activity program, medication schedule, self-monitoring of blood glucose (SMBG), treatment for hypo- and hyperglycemia, and sick day management, using diabetes educators (DE) as appropriate. Review maternal and fetal health issues. • Begin a multivitamin with 400 mcgs folic acid to supplement average daily intake of 400 mcgs for a total daily intake of 800 mcg to 1 mg of folic acid to decrease the risk of neural tube defects. Patients with a prior pregnancy affected with a neural tube defect should take folic acid 4 mgs daily. Check a B12 level in patients consuming more than 1 mg folic acid, as high dose folic acid may mask B12 deficiency. • Strongly advise smoking and alcohol cessation • Refer overweight and obese women with and without known diabetes or polycystic ovary syndrome (PCOS) for medical nutrition therapy with a goal of 5-10% weight loss based on Institute of Medicine (IOM) 2009 recommendation.
Medical Assessment	<ul style="list-style-type: none"> • Medical and obstetrical history: including comprehensive review of diabetes history and management • Eye evaluation: dilated comprehensive eye exam and pregnancy clearance by an ophthalmologist; should also include a discussion about the risk of developing and/or the progression of diabetic retinopathy during pregnancy • Renal evaluation: spot urine microalbumin and serum creatinine; protein/creatinine ratio if spot urine microalbumin >300 mcg/mg • Thyroid evaluation: TSH level • GYN evaluation: pelvic exam, Pap smear up to date • Cardiac evaluation: if ≥ 35 years of age with one or more additional risk factors (hypertension, smoking, family history of CAD, hypercholesterolemia, microalbuminuria or nephropathy) - recommend one or more of the following: EKG, echocardiogram, exercise tolerance test
Diabetes Medications	<ul style="list-style-type: none"> • Discontinue oral antihyperglycemic therapy; start insulin. An exception is metformin, which may be continued during the first trimester in patients with PCOS or type 2 diabetes, and anovulatory infertility. At the first prenatal visit the patient should begin increasing doses of insulin as necessary to control blood glucose while metformin is tapered off or discontinued. Metformin should not be used beyond the first trimester or in lieu of insulin until randomized controlled studies evaluating safety and efficacy have been completed. <ul style="list-style-type: none"> ○ Metformin crosses the placenta and achieves therapeutic levels in the fetus. Presently, there are no long term randomized controlled safety data in infants whose mother's were treated with metformin in pregnancy. • Oral medications have not been adequately studied for the treatment of preexisting type 2 diabetes in pregnancy. • The rapid-acting insulin analogs lispro and aspart lower postprandial blood glucose and decrease the risk of nocturnal hypoglycemia and may be useful therapeutic agents. Patients on lispro and aspart prior to conception may continue them during pregnancy. Patients on regular insulin may be switched to lispro or aspart if 1-hour postprandial blood glucose levels are above target and the patient is also experiencing pre-meal or nocturnal hypoglycemia.

	<ul style="list-style-type: none"> • Glargine, a long-acting insulin analog, is not recommended in women who are planning a pregnancy or who are currently pregnant. There is no information on its safety in pregnancy. A specific concern in the pregnant population is related to the 6 to 8 fold increased IGF-1 receptor affinity and mitogenic potency compared with human insulin. • There is no information on the safety of using the two new insulin analogs, glulisine and detemir, in pregnancy. We cannot recommend their use at this time except in clinical trials. • The rapid-acting insulins, lispro or aspart may be delivered either through multiple daily injections (MDI) or an insulin pump. • There is inadequate safety information about the use of exenatide and liraglutide in pregnancy. They should therefore not be used in pregnancy.
Other Medications	<p>Hypertension and/or microalbuminuria management:</p> <ul style="list-style-type: none"> • ACE-inhibitors must be stopped before pregnancy due to the increased risk of birth defects in the 1st trimester and the risk of fetal injury or demise with 2nd or 3rd trimester use. ARBs should be stopped before conception because safety data for 1st trimester use is limited. <ul style="list-style-type: none"> ○ The non-dihydropyridine calcium channel blocker diltiazem in extended release forms may be a useful substitute for ACE-Is and ARBs. <p>Diabetic nephropathy/chronic renal disease management:</p> <ul style="list-style-type: none"> • Sometimes the benefits of preconception use of ACE-inhibitors for renal protection may outweigh the mildly increased risk of birth defects. In this case, ACE-inhibitors should be stopped as soon as pregnancy is diagnosed in the first trimester. <p>Hyperlipidemia management:</p> <ul style="list-style-type: none"> • Stop all cholesterol-lowering agents before conception, including statins • Hypertriglyceridemia—omega 3 fatty acids may be started or continued in pregnancy

DIABETES MANAGEMENT DURING PREGNANCY

Self Monitoring of Blood Glucose and Urine Ketones	<p><u>Pre-existing diabetes and GDM</u></p> <ul style="list-style-type: none"> • For gestational diabetes, check glucose levels 4 times/day: before breakfast and 1 hour post-meals • For pre-existing diabetes, check glucose levels pre-meals and 1 hour post-meal • Nocturnal monitoring (~3 AM) may be necessary on an intermittent basis • Check fasting urine ketones daily 																								
Treatment Goals	<p><u>Pre-existing Diabetes</u></p> <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">Plasma glucose* Hadlock AC < 70th percentile</th> <th style="text-align: center;">Plasma glucose* Hadlock AC ≥ 70th percentile</th> </tr> </thead> <tbody> <tr> <td>• Fasting and pre-meal plasma glucose</td> <td style="text-align: center;">60-99 mg/dl</td> <td style="text-align: center;">60-79 mg/dl</td> </tr> <tr> <td>• 1-hour post-meal or peak post-prandial plasma glucose</td> <td style="text-align: center;">100-129 mg/dl</td> <td style="text-align: center;">90-109 mg/dl</td> </tr> <tr> <td>• Urine ketones</td> <td style="text-align: center;">negative</td> <td style="text-align: center;">negative</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Normalization of hemoglobin A1C to < 6% if possible without resulting severe hypoglycemia • Use standard hypoglycemia treatment for blood glucose less than 60 mg/dl (15 grams of carbohydrate – recheck in 15 minutes; repeat with 15 grams of carbohydrate if blood glucose is still less than 60 mg/dl) • Avoidance of severe hypoglycemia (episode in which patient experiences coma, seizure or suspected seizure, or impairment sufficient to require the assistance of another person). Blood glucose goals must be relaxed for patients with hypoglycemia unawareness or recurrent hypoglycemia. <hr style="border-top: 1px dashed black;"/> <p><u>Gestational Diabetes</u></p> <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">Plasma glucose* Hadlock AC < 70th percentile</th> <th style="text-align: center;">Plasma glucose* Hadlock AC ≥ 70th percentile</th> </tr> </thead> <tbody> <tr> <td>• Fasting and premeal blood glucose</td> <td style="text-align: center;">60-95 mg/dl</td> <td style="text-align: center;">60-79 mg/dl</td> </tr> <tr> <td>• 1-hour post meal or peak post prandial</td> <td style="text-align: center;">100-129 mg/dl</td> <td style="text-align: center;">90-109 mg/dl</td> </tr> <tr> <td>• Urine ketones</td> <td style="text-align: center;">negative</td> <td style="text-align: center;">negative</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Initiate insulin therapy if above levels are not maintained • Use standard hypoglycemia treatment for blood glucose less than 60 mg/dl (15 grams of carbohydrate – recheck in 15 minutes; repeat with 15 grams of carbohydrate if blood glucose is still less than 60 mg/dl) 		Plasma glucose* Hadlock AC < 70 th percentile	Plasma glucose* Hadlock AC ≥ 70 th percentile	• Fasting and pre-meal plasma glucose	60-99 mg/dl	60-79 mg/dl	• 1-hour post-meal or peak post-prandial plasma glucose	100-129 mg/dl	90-109 mg/dl	• Urine ketones	negative	negative		Plasma glucose* Hadlock AC < 70 th percentile	Plasma glucose* Hadlock AC ≥ 70 th percentile	• Fasting and premeal blood glucose	60-95 mg/dl	60-79 mg/dl	• 1-hour post meal or peak post prandial	100-129 mg/dl	90-109 mg/dl	• Urine ketones	negative	negative
	Plasma glucose* Hadlock AC < 70 th percentile	Plasma glucose* Hadlock AC ≥ 70 th percentile																							
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• Urine ketones	negative	negative																							
Diabetes Monitoring and Visits	<p><u>Pre-existing Diabetes</u></p> <ul style="list-style-type: none"> • Medical visits (endocrinologist preferred) every 1-4 weeks, with additional phone contact as needed, depending on level of self-management skills and stability of blood glucose control. At each visit, review SMBG and urine ketone results, measure blood pressure, measure urine protein and ketones by dipstick • Check A1C level every 4-8 weeks • Education using a diabetes educator (DE), preferably a Certified Diabetes Educator (CDE), as needed; medical nutrition therapy (MNT) by registered dietitian (RD) • Ophthalmology exam early in first trimester; follow-up depending on findings of this exam • Consider providing mental health counseling to assist women and / or their partners cope with the psychological and relationship changes that may result from pregnancy. 																								

	<p><u>Gestational Diabetes</u></p> <ul style="list-style-type: none"> • Medical visits (endocrinologist preferred) every 1-4 weeks, with additional phone contact as needed, depending on level of self-management skills and stability of blood glucose control. At each visit, review SMBG and urine ketone results, measure blood pressure, measure urine protein and ketones by dipstick. • If newly diagnosed with gestational diabetes, patient should be started on insulin, not metformin, if medication is required. • Education using DE (preferably a CDE) as needed for review of SMBG to increase adherence; MNT by registered dietitian (RD) • Insulin is preferred over glyburide in GDM as studies comparing glyburide to insulin were not powered to evaluate neonatal outcomes. There was a trend to greater infant birth weights when mothers were treated with glyburide compared to insulin. • When insulin is not an option, glyburide may be used.
Diabetes Medications	<p><u>Preexisting Diabetes</u></p> <ul style="list-style-type: none"> • The only diabetes medication currently used throughout pregnancy is insulin (see Preconception Care).
Hypertension Management	<ul style="list-style-type: none"> • Maintaining blood pressure in non-pregnant patients at $\leq 130/80$ decreases end organ damage. • Target blood pressure is 110-129 systolic and 65-79 diastolic in women with chronic hypertension during pregnancy. Antihypertensives are initiated in pregnant patients with known or suspected chronic hypertension if blood pressure is $\geq 130/80$ three times during pregnancy. • Pre-eclampsia needs special treatment; therefore, these guidelines and treatment strategies do not apply to pre-eclampsia for which other treatment options are preferred, or to gestational hypertension when high blood pressure exposure is limited • Antihypertensives that are used during pregnancy are: <ul style="list-style-type: none"> ➢ Alpha methyldopa (category B) ➢ Beta-blockers (acebutolol, sotalol – category B; betaxolol, bisoprolol, labetalol, levatol, metoprolol, nadolol, timolol – category C; atenolol – category D – should not be used as it may cause fetal growth restriction) ➢ Calcium channel blockers (all category C) (The nondihydropyridine calcium channel blocker diltiazem in extended-release form may be preferred in patients with microalbuminuria or nephropathy.) ➢ Hydralazine (category C)

*Laboratory methods measure plasma glucose. Most glucose monitors approved for home provide readings equivalent to plasma values. Plasma glucose values are 10-15% higher than whole blood glucose values. It is important for people with diabetes to know whether their meters and strips record whole blood or plasma results.

MEDICAL NUTRITION THERAPY (MNT)

Recommendations are the same for pre-existing diabetes and GDM except where noted.

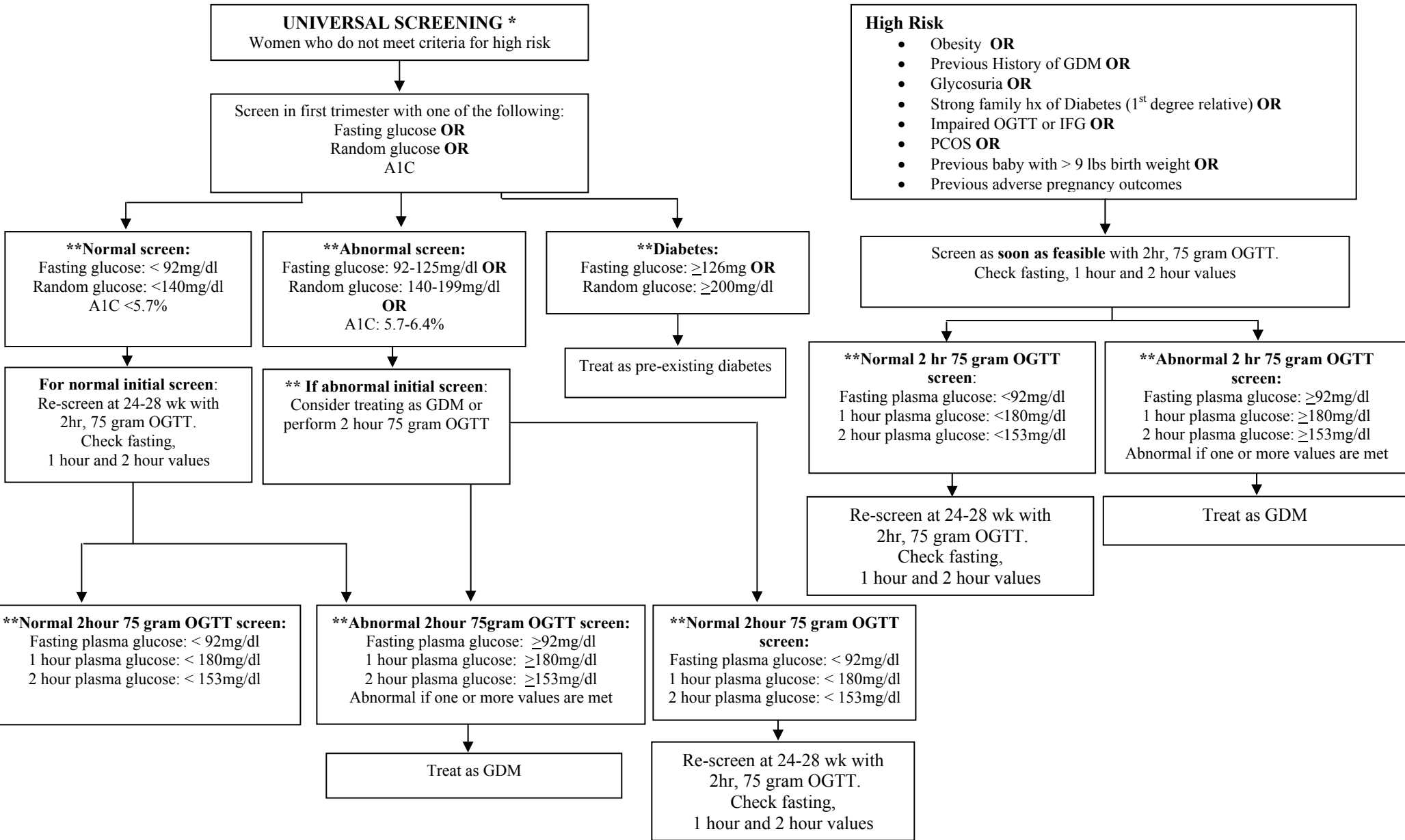
Counseling and Education	<ul style="list-style-type: none"> • All pregnant women should receive MNT counseling by a registered dietitian (RD), (CDE preferred) • All pregnant women should receive SMBG training by a DE (CDE preferred) • Daily food records and SMBG records are required to assess effectiveness of MNT • Carbohydrate counting skills are taught for either a consistent carb intake or a personalized insulin to carb ratio so the patient can adjust insulin based on carbohydrate intake • At least 3 encounters with a CDE are recommended: <ul style="list-style-type: none"> ○ Visit 1 (60 – 90 min individual or group visit with RD) for assessment and meal planning. This could include SMBG instruction if RD has received appropriate training. ○ Visit 2 (30 – 45 min) with RD or RN 1 week after initial visit to assess and modify plan ○ Visit 3 (15 – 45 min) with RD or RN in 1 – 3 weeks to further assess and modify plan, as needed. • Additional visits every 2 – 3 weeks and prn with RD or RN until delivery, and one visit 6 – 8 weeks after delivery 			
Calories	WHO BMI range (kg/m ²)	Energy Needs (kcal/kg) °Based on Pregravid kg	Total Weight Gain Range (lbs) Twin	Rates of weight Gain (lb/week) 2 nd and 3 rd trimesters
	Underweight <18.5	36-40	28-40	1.0 (1-3)
	Normal weight 18.5-24.9	30	25-35 37-54	1.0 (0.8-1)
	Overweight 25.0-29	24	15-25 31-50	0.6 (0.5-0.7)
	Obese ≥ 30.0	**	11-20 25-42	0.5 (0.4-0.6)
<p>For singleton pregnancy, add an additional 340 kcal/day to calculated needs in 2nd trimester and 452 kcal/day in 3rd trimester, or additional calories consistent with target weight gain. For twin pregnancy, add an additional 500 kcals to calculated needs after 1st trimester. For multiple pregnancies, add 500 kcal in the 1st trimester. (**Provisional guidelines for twin pregnancies per Institute of Medicine (IOM)).</p> <p>* Insufficient information was available to develop a provisional guideline for underweight women with multiple fetuses. ** Insufficient information to address energy needs (kcal/kg) in the obese category</p>				

Distribution of Calories	<ul style="list-style-type: none"> Individualize distribution of calories based on usual intake, preferences and medication regimen <ul style="list-style-type: none"> 6 – 8 small meals/snacks is recommended. Smaller frequent meals decrease postprandial hyperglycemia <p>Weight should be monitored at each visit; track patient's weight gain on prenatal weight gain chart</p>		
Carbohydrate	<u>GDM</u>	<u>Pre-Existing Diabetes</u>	
	40 – 45% total calories*	40% – 55% total calories	
	Breakfast	15 – 30 grams* +	Individualized as per usual intake and BG levels
	Other meals	45 grams lunch and dinner	Individualized as per usual intake and BG levels
	HS snack	15 – 30 grams carbohydrate	15 – 30 grams carbohydrate
	*Pregnant women should consume a minimum of 175 grams of carbohydrate per day + May be increased if insulin is added		
Fiber	<ul style="list-style-type: none"> Calculate 14 grams of fiber per 1000 kcals per day (25-30 grams/day) based on provider assessment 		
Protein	<ul style="list-style-type: none"> Calculate 1.1 grams of protein per kg per day, based on provider assessment 		
Fat	<ul style="list-style-type: none"> <u>Pre-existing diabetes</u>: 30 – 40% of total calories, with <10% total calories from saturated fat <u>GDM</u>: 30-40% total calories with <10% total calories from saturated fat Encourage use of monounsaturated and polyunsaturated fats instead of saturated fats 		
Nutritive and Non-nutritive Sweeteners	<ul style="list-style-type: none"> The safety of non-nutritive sweeteners has not been established. 		
Vitamin/ Mineral Supplements	<p>Prenatal multivitamin and mineral supplement including:</p> <ul style="list-style-type: none"> Iron (27 mg/day) Folic acid 400 mcgs to supplement average daily dietary intake of 400 mcgs for a total daily intake of 800 mcgs to 1 mg daily to decrease risk of neural tube defects (begin 400 mcg prior to conception) Additional calcium supplementation may be needed to meet daily requirement of 1000 mg per day (1300 mg per day if under age 19yrs). Begin prior to conception. Vitamin D 600 IUs/day. 		
Caffeine	<ul style="list-style-type: none"> Limit to <200 mg per day. Excess caffeine consumption during pregnancy may increase the risk of miscarriage. 		
Physical Activity	<ul style="list-style-type: none"> Regular physical activity is recommended after clearance by provider <ul style="list-style-type: none"> Benefits include reducing insulin resistance, postprandial hyperglycemia and excessive weight gain Hypoglycemia is more likely with prolonged exercise (>60 minutes) Encourage activity after meals to reduce postprandial hyperglycemia 		
Alcohol and Tobacco Use	<ul style="list-style-type: none"> Alcohol and tobacco use should be avoided during pregnancy. 		

POST-PARTUM CARE

- Breastfeeding is encouraged in patients with pre-existing or gestational diabetes
- Enalapril and captopril may be used to treat hypertension and albuminuria in nursing mothers of full-term infants
- Appointments with the following specialists should be completed 6-8 weeks post-partum: ophthalmology, RD or RN and endocrinology.
- For women who develop GDM:
 - A 2-hour 75 g OGTT should be checked at 6 weeks to evaluate for persistent diabetes
 - Normal: fasting glucose level <100mg/dl
 - Impaired fasting glucose: fasting glucose level 100-125mg/dl
 - Diabetes: fasting glucose level ≥126mg/dl
 - Impaired glucose tolerance: 2 hr OGTT value 140-199mg/dl
 - Diabetes: 2 hr OGTT value ≥ 200mg/dl
 - Counsel women with GDM on the role of lifestyle management and weight loss to reduce the risk of future type 2 DM (of note: approximately 50% of women with GDM will develop overt type 2 diabetes in the next 7 to 10 years)
 - Review nutrition guidelines and establish exercise goals. For women with BMI greater than 25 (this may be lower in Asians) target a 5-7% weight loss from the preconception weight.
- Discuss family planning/contraceptive issues. Depo-Provera and progestin-only oral contraceptives are less preferred in patients who have had gestational diabetes, as they can accelerate the development of type 2 diabetes. In patients with pre-existing diabetes, Depo-Provera may worsen glycemic control. The intrauterine device (IUD) is preferred in monogamous partnerships because it is a metabolically neutral and highly effective form of contraception.
- Assist women with gestational diabetes with the transfer of care back to the primary care physician for longer term diabetes screening (including yearly fasting glucose, 1 year post partum and every 3 years afterwards 75 gram 2hour OGTT), risk reduction and for lifestyle management.

Gestational Diabetes Mellitus
 Screening Strategy to Detect GDM
 Risk assessment should be done at first prenatal visit



**Plasma values, based on International Association of Diabetes and Pregnancy Study Groups Consensus Panel (IADPSG)

Glossary

Hadlock AC: formula to identify macrosomia established by Hadlock et al

ACE Inhibitor: angiotensin converting enzyme inhibitor

ARBs: angiotensin receptor blockers

BMI: body mass index

CAD: coronary artery disease

CDE: Certified Diabetes Educator

DE: diabetes educator; nurse or dietitian with advanced education in diabetes management

GDM: gestational diabetes mellitus

IFG: impaired fasting glucose

IGF: receptor: Insulin-like growth factor receptor

IOM: Institute of Medicine

MDI: multiple daily injections

MNT: Medical Nutrition Therapy

OGTT: oral glucose tolerance test

PCOS: polycystic ovarian syndrome

SMBG: self-monitoring of blood glucose

TSH: thyroid stimulating hormone

WHO: World Health Organization

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Pregnancy Guideline Task Force

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Students With Chronic Illnesses: Guidance for Families, Schools, and Students

Chronic illnesses affect at least 10 to 15 percent of American children. Responding to the needs of students with chronic conditions, such as asthma, allergies, diabetes, and epilepsy (also known as seizure disorders), in the school setting requires a comprehensive, coordinated, and systematic approach. Students with chronic health conditions can function to their maximum potential if their needs are met. The benefits to students can include better attendance, improved alertness and physical stamina, fewer symptoms, fewer restrictions on participation in physical activities and special activities, such as field trips, and fewer medical emergencies. Schools can work together with parents, students, health care providers, and the community to provide a safe and supportive educational environment for students with chronic illnesses and to ensure that students with chronic illnesses have the same educational opportunities as do other students.

Family's Responsibilities

- Notify the school of the student's health management needs and diagnosis when appropriate. Notify schools as early as possible and whenever the student's health needs change.
 - Provide a written description of the student's health needs at school, including authorizations for medication administration and emergency treatment, signed by the student's health care provider.
 - Participate in the development of a school plan to implement the student's health needs:
 - Meet with the school team to develop a plan to accommodate the student's needs in all school settings.
 - Authorize appropriate exchange of information between school health program staff and the student's personal health care providers.
- Communicate significant changes in the student's needs or health status promptly to appropriate school staff.
 - Provide an adequate supply of student's medication, in pharmacy-labeled containers, and other supplies to the designated school staff, and replace medications and supplies as needed. This supply should remain at school.
 - Provide the school a means of contacting you or another responsible person at all times in case of an emergency or medical problem.
 - Educate the student to develop age-appropriate self-care skills.
 - Promote good general health, personal care, nutrition, and physical activity.

School District's Responsibilities

- Develop and implement districtwide guidelines and protocols applicable to chronic illnesses generally and specific protocols for asthma, allergies, diabetes, epilepsy (seizure disorders), and other common chronic illnesses of students.
- Guidelines should include safe, coordinated practices (as age and skill level appropriate) that enable the student to successfully manage his or her health in the classroom and at all school-related activities.
- Protocols should be consistent with established standards of care for students with chronic illnesses and Federal laws that provide protection to students with disabilities, including ensuring confidentiality of student health care information and appropriate information sharing.
- Protocols should address education of all members of the school environment about chronic illnesses, including a component addressing the promotion of acceptance and the elimination of stigma surrounding chronic illnesses.



National Asthma Education and
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- Develop, coordinate, and implement necessary training programs for staff that will be responsible for chronic illness care tasks at school and school-related activities.
- Monitor schools for compliance with chronic illness care protocols.
- Meet with parents, school personnel, and health care providers to address issues of concern about the provision of care to students with chronic illnesses by school district staff.

School's Responsibilities

- Identify students with chronic conditions, and review their health records as submitted by families and health care providers.
- Arrange a meeting to discuss health accommodations and educational aids and services that the student may need and to develop a 504 Plan, Individualized Education Program (IEP), or other school plan, as appropriate. The participants should include the family, student (if appropriate), school health staff, 504/IEP coordinator (as applicable), individuals trained to assist the student, and the teacher who has primary responsibility for the student. Health care provider input may be provided in person or in writing.
- Provide nondiscriminatory opportunities to students with disabilities. Be knowledgeable about and ensure compliance with applicable Federal laws, including Americans With Disabilities Act (ADA), Individuals With Disabilities Education Act (IDEA), Section 504, and Family Educational Rights and Privacy Act of 1974 (FERPA). Be knowledgeable about any State or local laws or district policies that affect the implementation of students' rights under Federal law.
- Clarify the roles and obligations of specific school staff, and provide education and communication systems necessary to ensure that students' health and educational needs are met in a safe and coordinated manner.
- Implement strategies that reduce disruption in the student's school activities, including physical education, recess, offsite events, extracurricular activities, and field trips.

- Communicate with families regularly and as authorized with the student's health care providers.
- Ensure that the student receives prescribed medications in a safe, reliable, and effective manner and has access to needed medication at all times during the school day and at school-related activities.
- Be prepared to handle health needs and emergencies and to ensure that there is a staff member available who is properly trained to administer medications or other immediate care during the school day and at all school-related activities, regardless of time or location.
- Ensure that all staff who interact with the student on a regular basis receive appropriate guidance and training on routine needs, precautions, and emergency actions.
- Provide appropriate health education to students and staff.
- Provide a safe and healthy school environment.
- Ensure that case management is provided as needed.
- Ensure proper record keeping, including appropriate measures to both protect confidentiality and to share information.
- Promote a supportive learning environment that views students with chronic illnesses the same as other students except to respond to health needs.
- Promote good general health, personal care, nutrition, and physical activity.

Student's Responsibilities

- Notify an adult about concerns and needs in managing his or her symptoms or the school environment.
- Participate in the care and management of his or her health as appropriate to his or her developmental level.

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