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Diabetes in School Children

Recommendations and Resource Guide for School Personnel

Table of Contents

Introduction 3

Section 1: Diabetes Overview
National and State Diabetes Burden Data Resources 6
Diabetes Primer 7

Section 2: Actions for School Personnel, Parents/Guardians and Students
Actions for the School District Administration 49
Actions for the Principal or School Administration 51
Actions for the Certified School Nurse 54
Actions for the Trained Diabetes Personnel 59
Actions for the Teacher 62
Actions for the School Psychologist, Counselor and Social Worker ... 65
Actions for the Physical Education Teacher, Coach and Athletic Trainer 67
Actions for the Food Service Manager and Lunchroom Staff 70
Actions for the Transportation Manager 73
Actions for the Bus Driver 75
Actions for the Parents/Guardians 77
Actions for the Student with Diabetes 80

Section 3: Tools for Effective Diabetes Management
Sample Diabetes Medical Management Plan 84
Sample Individualized Healthcare Plan 95
Sample Emergency Care Plan 97
Sample Individualized Transportation Plan 101
Sample 504 Plan 106

Section 4: School Responsibilities under Federal and State Law
Federal Laws 115
State Laws and Regulations 121

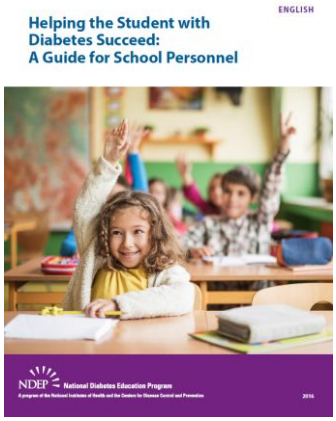
Section 5: Glossary of Diabetes Terms

Introduction

For students with diabetes, major advances in diabetes management, medical research, and technology mean a brighter and healthier future. Research shows that well-managed blood glucose levels not only can help students stave off the long-term complications of diabetes but also help them feel better, happier, and more productive at school. In a supportive school environment, where school personnel understand the needs of students with diabetes and can respond appropriately in emergency situations, students can manage their diabetes effectively throughout the school day and at school-sponsored activities.

Where does information in this guide come from?

The information in this guide is based on the document, *Helping the Student with Diabetes Succeed: A Guide for School Personnel* (2016 edition), which was developed by the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health.



This Pennsylvania guide was developed by tailoring and adding material to the national guidance—ensuring that our recommendations both reflect national best practices and comply with Pennsylvania state laws and education policies.

What is the purpose of this guide?

Diabetes in School Children: A Recommendation and Resource Guide for Pennsylvania School Personnel was developed to educate school personnel about effective diabetes management and to share a set of practices that enable schools to ensure a safe learning environment for students with diabetes, particularly those who use insulin to manage the disease. The school health team and the training approach for school-based diabetes management explained in this guide build on what schools already are doing to support children with chronic diseases.

The practices shared in this guide are not necessarily required by the federal laws enforced by the U.S. Department of Education and/or the U.S. Department of Justice for each student with diabetes. This guide can be used, however, in determining how to address the needs of students with diabetes. The individual situation of any particular

student with diabetes will affect what is legally required for that student. In addition, every school will have its own policies, plans, and collectively bargained provisions that may impact the administration of diabetes care at the local level.

This guide is based on national best practices for creating and ensuring a safe, nurturing learning environment for students with diabetes. This guide is also designed to define and clarify schools' diabetes management roles and responsibilities. Accordingly, an entire section of this guide is devoted to summarizing state and federal laws related to diabetes management in schools.

Organization of the School Guide

Organized in several major sections, the guide includes background information and tools for school personnel to help students manage diabetes effectively.

Section 1: Diabetes Overview provides key information about diabetes, how the disease is managed, health care and education plans for students with diabetes, and the essential elements for planning and implementing effective diabetes management in school. The Diabetes Overview also addresses psychosocial issues, the importance of diabetes self-management and the typical ages at which students are able to perform various diabetes care tasks.

Users of previous editions of the School Guide will find updated information on:

- Diabetes equipment, supplies, and smartphone technology for blood glucose monitoring and insulin administration;
- Meal planning, carbohydrate (carb) counting, and insulin-to-carb ratios; and
- Resources and materials related to topics in the Diabetes Overview.

The School Guide should be available to all school personnel who may be responsible for the safety of students with diabetes.

Section 1 also lists resources to locate Pennsylvania and United States diabetes statistics.

Section 2: Actions for School Personnel, Parents/Guardians and Students defines the roles and responsibilities of administrators, school nurses, key school staff members, the parents/guardians, and the student with diabetes—the members of the school health team. The Actions pages should be distributed to all school personnel who may be responsible for the safety of students with diabetes throughout the school day and at school-sponsored activities.

Section 3: Tools for Effective Diabetes Management contains important tools for helping schools implement effective diabetes management:

- Sample Diabetes Medical Management Plan (DMMP)
- Sample Individualized Healthcare (IHP)
- Sample Emergency Care Plan (ECP)
- Sample 504 Plan
- Sample Individualized Transportation Plan

Section 4: School Responsibilities Under Federal and State Law provides an overview of the federal and state laws that address schools' responsibilities to students with diabetes, including confidentiality requirements. The U.S. Department of Education prepared the overview on federal laws. In applying the laws, schools must consider each student on an individualized basis; what is appropriate for one student may not be appropriate for another student.

Section 5: Glossary of Diabetes Terms includes a useful glossary of key diabetes terms.

Section 1: Diabetes Overview

Diabetes is one of the most common chronic diseases in school-aged children, affecting about 208,000 young people in the United States. According to recent estimates, about 23,500 youths are diagnosed with type 1 and type 2 diabetes each year.

Diabetes is a serious chronic disease in which blood glucose (sugar) levels are above normal due to defects in insulin production, insulin action, or both. Diabetes is the sixth leading cause of death by disease in the United States. Long-term complications of diabetes include heart disease, stroke, blindness, kidney failure, nerve disease, gum disease, and amputation of the foot or leg. Although there is no cure, diabetes can be managed and complications can be delayed or prevented.

National and State Diabetes Burden Data Resources

National diabetes health statistics can be accessed at the Centers for Disease Control and Prevention, Diabetes Data and Statistics website http://www.cdc.gov/diabetes/data/index.html or by contacting 1-800-CDC-INFO.

Pennsylvania diabetes health statistics can be accessed through the Pennsylvania Department of Health, Bureau of Health Statistics and Research web page, including the Enterprise Data Dissemination Informatics Exchange (EDDIE) at www.statistics.health.pa.gov/Pages/default.aspx. EDDIE is an extensive and versatile online interactive system that allows users to create various state and local health statistical output on resident live births, teen pregnancy, deaths, infant deaths, cancer incidences, behavioral health risks, STDs, and population in different formats (tables, charts, maps, and county assessments/profiles) over time (in single and multiple-year output) for the purpose of trend analysis, public health assessment and surveillance support.

The Pennsylvania Department of Health, Division of School Health, collects information on diabetes in schools and can be accessed at http://www.health.pa.gov/My%20Health/School%20Health/Pages/Quick%20Links/Chronic%20Disease/Diabetes.aspx.

The Pennsylvania Department of Health, Diabetes Prevention and Control Program (DPCP), publishes a biannual statistical report that features vital statistics (births to mothers with pre-pregnancy or gestational diabetes and diabetes-related mortality), Behavioral Risk Factor Surveillance System (BRFSS) estimates, statistics from the Pennsylvania Health Care Cost Containment Council (diabetes-related hospital admissions and discharges), and other sources to share with diabetes stakeholders. The most current Burden of Diabetes in Pennsylvania report and future burden reports can be found on the DPCP website at http://www.statistics.health.pa.gov/HealthStatistics/OtherHealthStatistics/Documents/2010_Diabetes_Burden_Report.pdf.

Diabetes Primer

Defining Diabetes

Diabetes is a chronic disease in which blood glucose (sugar) levels are above normal. People with diabetes have problems converting food to energy. After a meal, food is broken down into a sugar called glucose, which is carried by the blood to cells throughout the body. Insulin, a hormone made in the pancreas, allows glucose to enter the cells of the body where it is used for energy.

People develop diabetes because the pancreas produces little or no insulin or because the cells in the muscles, liver, and fat do not use insulin properly. As a result, the glucose builds up in the blood, is transported into the urine, and passes out of the body. Thus, the body loses its main source of fuel even though the blood contains large amounts of glucose.

When insulin is no longer made, it must be obtained from another source, such as insulin injections or an insulin pump. When the body does not use insulin properly, people with diabetes may take insulin or other blood glucose-lowering medications. Neither insulin nor other medications, however, are cures for diabetes; they only help to manage the disease.

Taking care of diabetes is important. Over the years, ongoing high blood glucose, also called hyperglycemia, can lead to serious health problems. If not managed effectively, diabetes can affect the blood vessels, eyes, kidneys, nerves, gums, and teeth, making it the leading cause of adult blindness, kidney failure, and non-traumatic lower limb amputations. Diabetes also increases a person's risk for heart disease and stroke.

Some of these problems can occur in teens and young adults who develop diabetes during childhood. The good news is that research shows these problems can be greatly reduced, delayed, or possibly prevented through intensive treatment that keeps blood glucose levels near normal.

Type 1 Diabetes

Type 1 diabetes, formerly called juvenile diabetes, is a disease of the immune system, the body's system for fighting infection. In people with type 1 diabetes, the immune system attacks the beta cells (the insulin-producing cells of the pancreas) and destroys them. Because

the pancreas can no longer produce insulin, people with type 1 diabetes need to take insulin daily to live.

Type 1 diabetes can occur at any age, but onset of the disease occurs most often in children and young adults. Most cases of diabetes in children under age 10 are type 1 diabetes. In adults, type 1 diabetes accounts for 5 to 10 percent of all cases of diagnosed diabetes.

Symptoms
The symptoms of type 1 diabetes are due to an increase in the level of glucose in the blood and include:

- Increased thirst and urination
- Unexplained weight loss
- Blurred vision
- Feeling tired all the time

These symptoms may be mistaken for severe flu or another rapid-onset illness. If not diagnosed and treated with insulin, the student with type 1 diabetes can lapse into a life-threatening condition known as diabetic ketoacidosis or DKA. Signs of DKA include:

- Vomiting
- Sleepiness
- Fruity breath
- Difficulty breathing
- If untreated, coma and death.

Risk Factors
Although scientists have made much progress in predicting who is at risk for type 1 diabetes, they do not yet know what triggers the immune system's attack on the pancreas' beta cells. They believe that type 1 diabetes is due to a combination of genetic and environmental factors that are beyond the individual's control. Researchers are working to identify these factors and to stop the autoimmune process that leads to type 1 diabetes.

Type 2 Diabetes

Type 2 diabetes, formerly called adult-onset diabetes, is the most common form of the disease in adults. People can develop it at any age, even during childhood. A progressive disease, type 2 diabetes usually begins with insulin resistance, a condition in which cells do not use insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. Over time, however, the pancreas loses its ability to secrete enough insulin in response to meals or to control blood glucose levels overnight or during periods of fasting.

Managing type 2 diabetes requires maintaining a healthy weight and weight loss, if overweight. Lifestyle changes such as making healthy food choices and getting regular physical activity are essential. In addition, people with type 2 diabetes may take insulin and/or other blood glucose-lowering medications to manage their diabetes.

Type 2 diabetes used to be found mainly in overweight or obese adults age 40 or older. Now, as more children and adolescents in the United States have become overweight and inactive, type 2 diabetes is occurring in young people.

Symptoms

Symptoms of type 2 diabetes may be similar to those of type 1 diabetes. A person may feel very tired or thirsty and have to urinate often due to high blood glucose levels. Additional Type 2 diabetes symptoms include:

- Unexplained weight loss
- Blurred vision

High blood pressure or elevated blood lipids (cholesterol) are associated with insulin resistance. In addition, physical signs of insulin resistance may appear, such as acanthosis nigricans, a condition in which the skin around the neck, armpits, or groin looks dark, thick, and feels velvety. Often, this condition is mistaken for poor hygiene.

Some children or adolescents (and adults) with type 2 diabetes may have no recognized symptoms when they are diagnosed. For that reason, it is important for the parents/guardians to know the risk factors of type 2 diabetes and to talk to their health care professionals about screening children or teens who are at high risk for type 2 diabetes.

Risk Factors

The key risk factors for type 2 diabetes in youth include being overweight or obese and having a family member who has type 2 diabetes. In addition, type 2 diabetes is more common in certain racial and ethnic groups such as African Americans, Hispanics/Latinos, American Indians, Alaska Natives, Asian Americans, and Pacific Islanders, including Native Hawaiians. Other risk factors include having a mother who had diabetes during her pregnancy; having high blood pressure, high cholesterol, abnormal lipid levels, polycystic ovary syndrome; and being inactive.

For children and teens at risk, health care professionals can encourage, support, and educate the entire family to make lifestyle changes that may delay—or prevent—the onset of type 2 diabetes. Changes include reaching and maintaining a healthy weight by making healthy food choices and engaging in regular physical activity.

Gestational Diabetes

Diabetes can develop during pregnancy, which is called gestational diabetes, and is caused by the hormones of pregnancy. These hormones can cause insulin resistance or a shortage of insulin. Although gestational diabetes usually goes away after the baby is born, a woman who has had it is at increased risk for developing diabetes later in life. In addition, the offspring of a pregnancy affected by gestational diabetes is at increased risk for obesity and developing type 2 diabetes.

Effective Diabetes Management at School

Effective diabetes management is crucial:

- For the immediate safety of students with diabetes;
- For the long-term health of students with diabetes;
- To ensure that students with diabetes are ready to learn and participate fully in school activities; and
- To minimize the possibility that diabetes-related emergencies will disrupt classroom activities.

Diabetes management is needed 24 hours a day, 7 days a week. Many students will be able to handle all or almost all of their nonemergency diabetes care tasks by themselves. Others, because of age, developmental level, or inexperience, will need help from school personnel. In addition to the routine care required to meet daily needs, diabetes emergencies may happen at any time. School personnel need to be prepared to provide diabetes care at school and at all school-sponsored activities in which a student with diabetes participates.

Elements of Effective Diabetes Management in Schools

Students with diabetes need supportive environments to help them take care of their diabetes while they are under school jurisdiction (e.g., throughout the school day and at school functions). The key elements of effective diabetes management in school, include:

- Assembling a school health team;
- Developing the student’s written plans of care (health and education);

- Designating and training school personnel;
- Maintaining optimal blood glucose control;
- Implementing student self-management, when appropriate;
- Recognizing and treating hypoglycemia;
- Recognizing and treating hyperglycemia;
- Operating monitoring equipment;
- Administering medications, such as insulin and glucagon;
- Following an individualized meal plan;
- Promoting regular physical activity;
- Planning for special events, field trips, and extracurricular activities;
- Planning for disasters and emergencies; and
- Dealing with emotional and social issues.

Each of these elements of effective diabetes management in schools is explored in more detail in the remainder of this section.

Assembling a School Health Team

Collaboration and cooperation are key elements in planning and implementing successful diabetes management at school. As is true for students with other chronic diseases, students with diabetes are more likely to succeed in school when the student's school health team and the student's personal diabetes health care team work together.

To work collaboratively, a school health team should be assembled that includes people who are knowledgeable about diabetes, the school environment, and federal and state education and nursing laws. School health team members should include, as applicable:

- Student with diabetes;
- Parents/guardians;
- Certified school nurse (school nurse) and other school health personnel;
- Administrators;
- 504/IEP coordinator;
- Office staff;
- Student's teacher(s);
- School psychologist or guidance counselor;
- Trained diabetes personnel;
- Coach, lunchroom, and other school staff members; and transportation director/bus drivers.

The school health team is distinct from the student's personal diabetes health care team. Members of the student's personal diabetes health care team include: the student with diabetes, the parents/guardians,

and the student's doctor, nurse, registered dietitian nutritionist, diabetes educator, and other health care providers involved in the student's care.

The school health team members work together to implement the medical orders in the Diabetes Medical Management Plan (DMMP) developed by the student's personal diabetes health care team, using the strategies outlined by the school nurse in the Individualized Health Care Plan (IHP). In addition, the school health team should be part of the group that develops and implements the student's Section 504 Plan, other education plan, or individualized education program (IEP). These plans are developed to address students' needs for services to manage diabetes safely and effectively in school, as required under Section 504 of the Rehabilitation Act of 1973 or the Individuals with Disabilities Education Act (IDEA).

Developing the Student's Written Plans of Care (Health and Education)

Health care plans outline how each student's diabetes will be managed. These written plans help diabetic students, their families, school personnel, and the student's personal diabetes health care team to know what is expected of each of them. These expectations should be laid out in writing in the following plans of care:

Diabetes Medical Management Plan (DMMP), prepared by the student's personal diabetes health care team, contains the medical orders tailored for each student. The student's health care provider must sign this plan. The DMMP is the basis for all of the health care and education plans designed to help the student manage diabetes effectively at school. Although the DMMP is not required by Section 504, ADA, or IDEA, the information it contains can be useful in addressing the requirements of these Federal laws for the student with diabetes.

The school nurse uses the information in the DMMP to develop the student's Individualized Health Care Plan and the Emergency Care Plans. The existence of such plans should be referenced in, but not incorporated into, any Section 504 Service Agreement, other education plan, IEP or Individualized Transportation Plan.

Information in the DMMP may include:

- Date of diagnosis;
- Contact information (parents/guardians and student's physician/health care provider);

- Specific medical orders for checking blood glucose, administering insulin and other medications, and carbohydrate (carb) counting;
- Assessment of student's self-care skills for performing diabetes care tasks;
- Typical signs, symptoms, and prescribed treatment for hypoglycemia and hyperglycemia;
- Student's diabetes equipment and supplies, including blood glucose meter, insulin delivery devices, glucagon, and continuous glucose monitoring systems (CGM);
- Use of smartphone and/or other monitoring technology;
- Additional monitoring and treatment for ketones;
- Meal and snack plan;
- Physical activity; and
- 72-hour disaster, lockdown, or emergency plan.

The student's personal diabetes health care team should complete and approve the DMMP before the student returns to school, immediately after diagnosis, or when a student transfers to a new school. The DMMP should be reviewed and updated each school year or upon a change in the student's prescribed care plan, level of self-management, school circumstances (e.g., a change in schedule), or at the request of the student or his or her parents/guardian.

Individualized Healthcare Plan (IHP) is developed by the school nurse in collaboration with the student's personal diabetes health care team to implement the student's DMMP and is required by professional standards of practice. The IHP uses the nursing process (assessment, diagnosis, planning, implementation and evaluation) to determine a plan of action that meets the health care needs of a student while under school jurisdiction and is based on the student's DMMP. While parental involvement is not required, it is strongly encouraged.

Although the IHP is not required by Section 504, ADA, or IDEA, the information it contains can be useful in addressing the requirements of these Federal laws for the student with diabetes.

The IHP, sometimes called the nursing care plan, is based on the medical orders in the student's DMMP and incorporates an assessment of the school environment as well as student-specific information (e.g., familial, psychosocial, and developmental information).

The school nurse uses the information in the DMMP and the nurse's additional assessment findings to outline the diabetes management strategies and personnel needed to meet the student's health goals.

The school nurse reviews the IHP with the student and the parents/guardian before it is implemented and establishes a timeline to revisit the plan periodically to evaluate progress toward desired health goals throughout the school year.

Information in the IHP may include:

- Plan for maintaining the student's blood glucose within the target range specified in the DMMP (including strategies for blood glucose monitoring, administering insulin, treating hypoglycemia and hyperglycemia, adhering to the student's meal plan, and participating in physical activity)
- Supplies needed and where they will be kept
- Use of smartphone, school phone, CGM, or computer to log data and/or to notify the school nurse and/or parents/guardians of blood glucose levels
- Need for free access to the restroom and water
- Nutritional needs, including provisions for meals and snacks
- Participation in all school-sponsored activities and field trips, with coverage provided by trained diabetes personnel
- Guidelines for communicating with the family and the student's personal diabetes health care team
- List of trained diabetes personnel and the diabetes care tasks they will perform
- Plan and timeline for training and supervising trained diabetes personnel
- Plan and timeline to train other school personnel (e.g., teachers, physical education instructors, food service, and transportation personnel)
- Timeframe for ongoing review of student outcomes
- Strategies to ensure the student is not subject to inappropriate penalties for health care appointments and to provide accommodations during the school day
- Plan for the student who independently manages diabetes at school including notification of the school nurse with blood glucose levels and medication dosages
- Maintenance of confidentiality and the student's right to privacy

Emergency Care Plan (ECP) is based on the medical orders in the student's DMMP and IHP. The school nurse develops the ECP. The plans for individual students summarize how to recognize and treat hypoglycemia and hyperglycemia and what to do in an emergency. The ECP should be distributed to all school personnel who have responsibility for students with diabetes throughout the school day and during school-sponsored activities.

Prepare the Student's Education Plan (As Needed)
School health team members should be part of the group that plans how the DMMP will be implemented and be part of the group that determines the student's eligibility under Section 504, the Americans with Disabilities Act, and/or IDEA. The school health team members should also be part of the group that determines the student's needs for services to manage diabetes safely and effectively in school.

The information collected about needed services should be included in any Section 504 Plan, other education plan, or IEP developed for the student and should be distributed to all school personnel who will be involved with implementing these plans.

Section 504 Plan is the commonly used term for a plan of services developed under Section 504 of the Rehabilitation Act. For a student with diabetes, the plan would be developed and reviewed by a team that usually includes: the school nurse, parents/guardians, 504 coordinator, school administrator, school psychologist or guidance counselor, and teacher.

An IEP is required for students with disabilities who receive special education and related services under IDEA. For a student with diabetes, the IEP would be developed and reviewed by the IEP team, including: the parents/guardians; at least one regular education teacher and one special education teacher of the student; a qualified school district representative such as the IEP coordinator or school administrator; the school nurse; an individual who can interpret the instructional implications of the student's needs; and, at the discretion of the parents/guardians or school district, other personnel with knowledge or special expertise regarding the student—usually the, school psychologist or guidance counselor, and/or trained diabetes personnel.

The information in the DMMP and IHP should be used in developing either a Section 504 Plan or an IEP, but it is not a substitute for these plans.

- Individual students with diabetes have different needs, but their education plans are likely to address the following common elements:
- Where and when blood glucose monitoring and treatment will take place
- Identity of trained diabetes personnel—the staff members who are trained to perform or assist with diabetes care tasks such as monitoring blood glucose, administering insulin and glucagon,

and treating hypoglycemia and hyperglycemia (24 P.S. § 14-1414.3)
- Location of the student's diabetes management supplies
- Use of smartphone, school phone, insulin pump, CGM, or computer to log data and/or to notify the school nurse or parents/guardians of blood glucose levels
- Need for easy access to the restroom and water
- Nutritional needs, including provisions for meals and snacks
- Full participation in all school-sponsored activities and field trips, with coverage provided by trained diabetes personnel (24 P.S. § 14-1414.3)
- Alternative times and arrangements for academic exams if the student is experiencing hypoglycemia or hyperglycemia
- Permission for absences without penalty for health care appointments or illness
- The opportunity to make up school work missed due to health care appointments or prolonged illness, including appropriate arrangements for meeting educational needs during or following an illness
- Maintenance of confidentiality and the student's right to privacy
- Plan for the student who independently manages diabetes at school including notification of the school nurse with blood glucose levels and medication dosages

The information in a student's IHP can be used in developing a Section 504 Service Agreement or Individual Education Program (IEP). The IHP is not required by federal law, but it can be useful in addressing the requirements of federal laws related to school responsibilities for children with diabetes. The DMMP is not a substitute for the education plans required under federal law.

In order to allow for timely changes to the IHP and ECP it is not recommended that they be attached to the IEP and 504 Service Agreement. Rather, schools should reference these documents as "Other information essential for the development of this IEP." For example, John's IHP is located in the nurse's office.

A student's IEP or Section 504 Service Agreement should be developed, modified, and implemented with input from the appropriate team, including parents/guardians, and the student, where appropriate, in accordance with all applicable state and federal laws and regulations.

Individualized Transportation Plan - This plan is recommended to assist in identifying appropriate transportation services for students with special health care needs.

Plan	Contents	Who Prepares It
Diabetes Medical Management Plan (DMMP)	**Medical orders:** all aspects of routine and emergency diabetes care	**Student's personal diabetes health care team**
Individualized Health Care Plan (IHP)	**School nursing care plan:** how diabetes care, as prescribed in the Diabetes Medical Management Plan, will be delivered in the school	**School nurse**
Emergency Care Plans for Hypoglycemia and Hyperglycemia	**Tool for school staff:** how to recognize and treat hypoglycemia or hyperglycemia and what to do in an emergency	**School nurse**
Section 504 Plan, other education plan, or individualized education program (IEP)	**Education plans:** address each student's needs for services to manage their diabetes safely and effectively in school, where required under Section 504, the Americans with Disabilities Act, or the Individuals with Disabilities Education Act	**504 team** **IEP team**

Designating and Training School Personnel

Diabetes management training for school personnel is essential to facilitate appropriate care for students with diabetes. Trained school personnel can help to ensure that students with diabetes are safe, ready to learn, and able to participate in all school-sponsored events.

All school personnel should receive, on an annual basis, the appropriate level of diabetes care training suited to their responsibilities for students with diabetes. School personnel who have been designated to administer diabetes medication, use monitoring equipment, and/or provide other diabetes care *must* receive annual training.

In Pennsylvania, the school nurse is the key school staff member who leads and coordinates the provision of health care services for a student with diabetes at school and while the student is under school jurisdiction. The school nurse, in consultation with the principal, may identify, train, and coordinate the provision of care by trained diabetes personnel, including the determination of which diabetes care tasks may be completed.

Nonmedical school personnel—called "trained diabetes personnel" in this guide—may be trained and supervised to perform diabetes care tasks safely in the school setting. Trained diabetes personnel may be identified from existing school staff who are willing to serve in this role. School staff shall have the right to decline this responsibility.

When trained diabetes personnel carry out tasks specified in the student's health care plans, under no circumstances should they be required to make independent decisions about the daily, ongoing management of a student with diabetes.

Diabetes management training must be facilitated by a licensed health care practitioner with expertise in the care and treatment of diabetes. Training should occur at the beginning of each school year and should be repeated when an enrolled student is first diagnosed with diabetes or when a student with diabetes enrolls in the school. Periodic refresher training is recommended.

Three levels of training are needed to keep students with diabetes safe at school. Training should be designed to include the elements outlined below using standardized training materials.

Level 1 training is for all school personnel and should cover:

- An overview of diabetes
- How to recognize and respond to low blood glucose (hypoglycemia) and high blood glucose (hyperglycemia)
- Whom to contact for help in an emergency

Level 2 training is for classroom teachers and all school personnel who have responsibility for the student with diabetes throughout the school day (e.g., physical education, music and art teachers and other personnel such as lunchroom staff, coaches, and bus drivers) and should cover:

- Content from Level 1 with specific instructions for what to do in case of an emergency
- Roles and responsibilities of individual staff members (see Actions for School Personnel, Parents/Guardians, and Students)
- Expanded overview of diabetes (types of diabetes, the role of blood glucose monitoring and the importance of balancing insulin/ medication with physical activity and nutrition and how it is done)
- Procedures and brief overview of the operation of devices (or equipment) commonly used by students with diabetes

- Impact of hypoglycemia or hyperglycemia on behavior, learning, and other activities
- The student's Emergency Care Plan, Individualized Health Care Plan, 504 Service Agreement, other education plan, IEP or Individualized Transportation Plan
- How to activate Emergency Medical Services in case of a diabetes emergency
- What to do during a schoolwide emergency (e.g., lockdown or evacuation)
- Tips and planning needed for the classroom and for special events
- Overview of the legal rights of students with diabetes in the school setting

Level 3 training is annual training required for school staff members designated as trained diabetes personnel who will perform or assist the student with diabetes care tasks when designated by the school nurse. Level 3 training involves an education module provided by the Departments of Health and Education or education from a licensed health care practitioner with expertise in the care and treatment of diabetes, such as the school nurse or a diabetes educator and should cover:

- All information from Level 1 and Level 2 training
- General training on diabetes care tasks specified in the student's DMMP:
    - Blood glucose monitoring
    - Insulin administration
    - Glucagon administration
    - Ketone testing (urine and blood)
    - Basic carbohydrate counting
- Student-specific training, when addressing each diabetes care task, includes:
    - Clear identification and understanding of the tasks as outlined in the student's DMMP
    - Each student's symptoms and treatment for hypoglycemia and hyperglycemia
    - Step-by-step instructions and return demonstration on how to perform the task(s) using the student's equipment and supplies
    - Clear parameters on when to perform the task, when not to do so, and when to ask for help from a health care professional
- How to document all care tasks performed

- Plan for ongoing evaluation of trained diabetes personnel's performance

A certified diabetes educator, or another qualified health care practitioner with expertise in the care and treatment of diabetes develops the instruction on performing the care tasks, provides for demonstration and return demonstration of the tasks, and evaluates the trained diabetes personnel's competency. A school nurse or qualified healthcare practitioner, in consultation with the school nurse establishes a plan for ongoing coordination of diabetes care to occur throughout the school year. A qualified health care practitioner also documents the instruction and competency evaluation. The school nurse provides ongoing monitoring of competency.

Diabetes Management Training Resources

There are many resources available for training school nurses and staff about diabetes management.

The National Association of School Nurses offers a live and online continuing education program for school nurses. This program, called Helping Administer to the Needs of the Student with Diabetes in School (H.A.N.D.S.SM), equips the school nurse with current diabetes knowledge and provides tools and resources to facilitate effective diabetes management for students at school. It is presented by a school nurse with a specific interest in diabetes and a certified diabetes educator.

The American Diabetes Association offers Diabetes Care Tasks at School: What Key Personnel Need to Know, a curriculum containing a set of training modules and corresponding DVD video segments. These materials are designed for use by the school nurse or other diabetes-trained health care practitioners when training a school's trained diabetes personnel. Training resources are also available.

The Joslin Diabetes Center's Diabetes Education Program for School Nurses offers a one-day program, designed by the American Diabetes Association and the Joslin Diabetes Center, to provide school nurses with up-to-date diabetes information to create a safe learning environment for students with diabetes.

JDRF offers the School Advisory Toolkit for Families, a guide which includes collaborative methods for educators and parents of children with type 1 diabetes to ensure that every child enjoys the best possible school experience.

A number of state programs have developed training curricula based on the American Diabetes Association's curriculum, including California, New York, Texas, and Virginia.

Some manufacturers of blood glucose meters, CGMs, insulin pens, and insulin pumps provide training materials, including apps specific to their products. Visit manufacturers' websites for more information.

Level 1. Diabetes Overview and How to Recognize and Respond to an Emergency Situation	
Who	**All school personnel**
What	• General overview of diabetes • How to recognize and respond to signs and symptoms of hypoglycemia and hyperglycemia • Whom to contact for help in an emergency
Level 2. Diabetes Basics and What to Do in an Emergency Situation	
Who	**Classroom teachers and all school personnel who have responsibility for the student with diabetes during the school day**
What	• Content from Level 1 • Specific instruction on the Emergency Care Plans for Hypoglycemia and Hyperglycemia • How to activate Emergency Medical Services in case of a diabetes emergency • Roles and responsibilities of individual staff members • Expanded overview of diabetes • Impact of hypoglycemia or hyperglycemia on behavior and learning • Tips and planning needed for the classroom and for special events • The student's health care and education plans • Legal rights of students with diabetes
Level 3. General and Student-Specific iabetes Care Tasks	
Who	**Trained diabetes personnel**
What	• Content from Level 1 and Level 2 training • General training on diabetes care tasks specified in the student's Diabetes Medical Management Plan • Student-specific training, using the student's equipment and supplies for each diabetes care task

Maintaining Optimal Blood Glucose Control

The goal of effective diabetes management is to keep blood glucose levels within a target range determined by the student's personal diabetes health care team. Optimal blood glucose control helps to promote normal growth and development and to prevent the immediate dangers of blood glucose levels that are too high or too low. Maintaining blood glucose levels within the target range also can help to optimize the student's ability to learn by avoiding the effects of hypoglycemia and hyperglycemia on cognition, attention, and behavior. In the long term, effective diabetes management helps to

prevent or delay the serious complications of diabetes such as heart disease, stroke, blindness, kidney failure, gum disease, nerve disease, and amputations of the foot or leg.

The key to maintaining optimal blood glucose control is to carefully balance food intake, physical activity, insulin, and/or other medication. As a general rule, food makes blood glucose levels go up. Physical activity, insulin, and diabetes medications make blood glucose levels go down. Several other factors, such as growth and puberty, physical and emotional stress, illness, or injury, also can affect blood glucose levels.

With all of these factors coming into play, maintaining optimal blood glucose control is a constant juggling act—24 hours a day, 7 days a week.

One of the most important diabetes management tasks is to check (or monitor) blood glucose levels throughout the day using a blood glucose meter or a continuous glucose monitor (CGM). Students who use a CGM also use a blood glucose meter to verify CGM readings.

The student's personal diabetes health care team may order blood glucose checks with a meter several times during the school day. Some students may maintain a record of blood glucose results in their blood glucose meter or through other monitoring technology such as a smartphone or a logbook.

Blood glucose levels may need to be checked before and after eating snacks and meals, before and after physical activity, or when there are symptoms of hypoglycemia or hyperglycemia. In some students, symptoms may be subtle; blood glucose levels should be checked whenever symptoms are suspected. Some students can check their own blood glucose levels. Other students need supervision. Still others need to have this task performed by a school nurse, licensed supplemental health staff or trained diabetes personnel.

All students, even those who can independently perform blood glucose monitoring, may need assistance when experiencing low blood glucose.

Students must be able to check their blood glucose levels and respond to levels that are too high or too low as quickly as possible. If recommended by the student's personal diabetes health care team, it is medically preferable to permit students to check blood glucose levels

and respond to the results in the classroom or wherever they happen to be. When in doubt, taking immediate action is important to prevent hypoglycemia and to prevent the student from missing class time.

Advantages of Checking Blood Glucose Levels Any Time and Any Place
• The student can confirm a low blood glucose level immediately. As a result, the student is less likely to experience a seizure or a coma. • The student is safer when he or she does not have to go to a designated place and does not have to delay treatment for low or high blood glucose levels. • The student spends less time out of class. • The student gains independence in diabetes management when the blood glucose meter is easily accessible and monitoring can be conducted as needed. • The student can achieve better blood glucose control to prevent onset of severe symptoms of high and low blood glucose levels and decrease the risk of long-term **complications of diabetes**. • When the student can check at any time and in any place, blood glucose monitoring is handled as a normal part of the school day.

Blood Glucose Meter

A blood glucose meter is a small portable machine used to check blood glucose levels. Before using the blood glucose meter, wash and dry hands and the test site. Insert the test strip into the meter. Using a lancet (a small needle inserted in a spring-loaded device), perform a finger stick by pricking the side of the fingertip. Apply a drop of blood to the test strip. The meter then gives the blood glucose level as a number on its digital display.

Heat and humidity may affect blood glucose meters and test strips and may reduce the accuracy of blood glucose readings. This is especially important when blood glucose is checked outside (e.g., on the practice field). Consult the manufacturer's instructions regarding the operation and storage environment for the student's blood glucose meter.

Continuous Glucose Monitor (CGM)

Some students use a CGM, a device that records blood glucose levels throughout the day. The CGM works through a sensor inserted under the skin that measures interstitial glucose (the glucose found in the fluid between cells) levels at regular intervals and sends the current equivalent glucose level wirelessly to a monitor. The monitor may be part of the insulin pump or a separate device, which may include a smartphone that is carried or worn by the student in a pocket, backpack or purse.

The CGM sets off an alarm when blood glucose levels are too high or too low, or when they are increasing or decreasing at a rapid rate.

Never ignore a CGM alarm. Appropriate action should be taken in accordance with the student's Diabetes Medical Management Plan (DMMP).

Some CGMs can transmit data remotely to multiple devices at the same time via smartphone technology. The school nurse, licensed supplemental health staff, trained diabetes personnel, the student's health care providers as well as the parents/guardians can have access to the CGM data and alarms in real time at locations remote from the student.

At this time, treatment decisions and diabetes care plan adjustments should not be based solely on CGM results. The sensor's glucose levels should be confirmed with a blood glucose meter whenever the reading suggests insulin needs to be given or hypoglycemia needs to be treated. The CGM is a useful tool for identifying trends and can enhance the ability of the student's personal diabetes health care team to make needed adjustments to the student's diabetes care plan. Refer to the manufacturer's instructions on how to use the student's device.

Plan for Disposal of Sharp Objects and Materials That Come Into Contact With Blood

Checking blood glucose does not present a danger to other students or staff members when there is a plan for proper disposal of lancets and other materials that come into contact with blood. The school health team should agree on the plan, which should be consistent with standard precautions and local waste disposal laws.

Sharp objects (sharps) such as lancets and needles may be disposed of in a heavy-duty plastic or metal container with a tight-fitting lid that may be kept at school or in the student's personal container. Some students may leave the lancet in their lancet device and bring it home for disposal. These arrangements should be agreed upon in advance by the school health team. Used blood glucose test strips and other materials may be discarded in the regular trash. Check with the local health department about health and safety requirements in your area.

"Universal precautions," as defined by the Centers for Disease Control and Prevention, are a set of precautions designed to prevent transmission of human immunodeficiency virus (HIV), hepatitis B virus (HBV), and other bloodborne pathogens when providing first aid or health care. Universal precautions involve the use of protective barriers such as gloves, gowns, aprons, masks, or protective eyewear, which can reduce the risk of exposure of the health care worker's skin

or mucous membranes to potentially infective materials. Under universal precautions, it is recommended that all health care workers take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices. For additional information about Universal Precautions, visit CDC online at: www.cdc.gov/niosh/topics/bbp/universal.html.

The Pennsylvania Department of Health developed *Guidelines on Bloodborne Pathogens for the Public Sector* in response to Act 96 of 2001, which is known as the Bloodborne Pathogen Standard Act. The guidelines apply to all employers and employees in the public sector who are not covered by federal standards of the Occupational Safety and Health Administration (OSHA). They address all actual or potential occupational exposures to blood or other infectious materials in a public sector healthcare facility, home healthcare organization or other facility providing health care-related services. The guidelines can be accessed on the School Health section of the Pennsylvania Department of Health's web site at www.health.pa.gov/My%20Health/School%20Health/Pages/Quick%20Links/Environmental/Bloodborne-Pathogens.aspx.

Implementing Student Self-Management

Diabetes care depends upon self-management. The student's competence and capability for performing diabetes-related care tasks should be specified in the Diabetes Medical Management Plan (DMMP) and then applied to the school setting by the school health team, as outlined in the student's Individualized Health Care Plan and any education plan.

Although students must receive assistance with and supervision of their diabetes care when needed, it is equally important to enable students to take on the responsibility of diabetes self-management with ongoing guidance and support from the parents/guardians, the student's personal diabetes care team, and the school health team. The age for transfer of responsibility from caregiver to student varies from student to student and from task to task because students develop and mature at different rates.

Students' abilities to participate in self-care also depend upon their willingness to do so. It is medically preferable that students be permitted to perform diabetes care tasks in the classroom, at every campus location, or at any school activity.

In order for students attending schools in Pennsylvania to be allowed to self-manage their diabetes, the following written acknowledgements must be in place:

- Statement from the student's health care practitioner
- Request from parents/guardians
- Acknowledgement by the school nurse that the student has demonstrated that they are capable of self-administration of their medications and use of monitoring equipment
- Acknowledgment by the student that they have received instructions in diabetes self-management from their health care practitioner and that they will not allow other students' access to their medications or monitoring equipment

The school may revoke or restrict self-management privileges due to the student's noncompliance with school rules or the provisions of health or education plans of care or the unwillingness or inability to safeguard their medication and monitoring equipment. If this privilege is revoked or restricted, the school must ensure that the medication and/or monitoring equipment are readily accessible.

Although the age at which students are able to perform diabetes care tasks are highly individualized and differ for each student, their ability and levels of self-care generally occur as follows:

- Toddlers and preschool-aged children are unable to perform diabetes care tasks independently and will need an adult to provide all aspects of diabetes care. Many of these young children will have difficulty recognizing hypoglycemia, so it is important that the caregiver be able to recognize and provide prompt treatment. Children in this age range, however, usually can determine which finger to prick, choose an injection site, and are generally cooperative.
- Some elementary school-aged children are able to perform their own blood glucose monitoring, but most will require supervision. Older elementary school-aged children are beginning to self-administer insulin with supervision but may not yet have the cognitive capacity to adjust insulin doses based on blood glucose readings. Understanding the complex interactions among insulin, nutrition, and physical activity on blood glucose levels may not develop until early adolescence. Unless students have hypoglycemic unawareness (inability to tell when their blood glucose level is low), most should be able to let an adult know when they are experiencing hypoglycemia; however, this can depend on the distractions that are occurring in the school environment and the student's overall level of well-being.

- Middle- and high school-aged children should be able to provide self-care depending upon the length of time since diagnosis and level of maturity, but they always will need help when experiencing hypoglycemia. As older children mature, they should be encouraged and empowered to perform diabetes care tasks on their own.

Ultimately, each person with diabetes becomes responsible for all aspects of self-care, including blood glucose monitoring and insulin administration. Regardless of their level of self-management, however, all students with diabetes may require assistance when blood glucose levels are out of the target range. Regardless of their age, there are times when all students who have diabetes need someone else to help them with their diabetes care tasks. Learning to ask for support and help is an important element of learning self-advocacy as a person living with diabetes.

Recognizing and Treating Hypoglycemia (Low Blood Glucose)
Hypoglycemia, also called "low blood glucose" or "low blood sugar," is a serious condition associated with diabetes that can happen very suddenly and requires immediate treatment. It can impair a student's cognitive abilities and adversely affect academic performance. Hypoglycemia can affect attention, mood, and ability to follow directions and therefore can be mistaken for misbehavior.

Hypoglycemia occurs when a student's blood glucose level falls too low and is usually a result of:

- Administering too much insulin
- Missing or delaying meals or snacks
- Not eating enough food as prescribed in the meal plan
- Participating in extra, intense, or unplanned physical activity
- Being ill, particularly with gastrointestinal illness
- A combination of these factors

For most students, a blood glucose level of 70 mg/dL or less is considered hypoglycemia. Low blood glucose levels are more likely to occur before lunch, at the end of the school day, during or after physical education classes, or in the event of unanticipated physical activities.

Hypoglycemia, which is not always preventable, is the greatest immediate danger to students with diabetes. Hypoglycemia usually can be treated easily and effectively. However, if it is not treated promptly,

hypoglycemia can lead to unconsciousness and seizures and can be life threatening.

Early recognition of hypoglycemia symptoms and prompt treatment in accordance with the student's DMMP are critically necessary to prevent the onset of severe symptoms that may place the student in danger.

This information, contained in the student's Emergency Care Plan, should be provided to all school personnel who have responsibility for the student with diabetes during the school day.

Symptoms of Hypoglycemia

Students should **never** be left alone or sent anywhere alone when experiencing hypoglycemia. Symptoms of hypoglycemia are different for each student, and they may vary from episode to episode. Symptoms of mild/moderate hypoglycemia and severe hypoglycemia may include one or more of the following:

Hypoglycemia Symptoms		
Mild to Moderate		**Severe**
• Shakiness/jitteriness • Sweating • Hunger • Pallor • Headache • Blurry vision • Sleepiness • Dizziness • Lightheadedness • Confusion • Disorientation	• Loss of coordination • Irritability or nervousness • Argumentativeness • Combativeness • Changed personality • Changed behavior • Inability to concentrate • Weakness • Lethargy	• Inability to eat or drink • Loss of consciousness • Unresponsiveness • Seizure activity or convulsions (jerking movements)

It is important that school staff are aware of a student's usual initial signs or symptoms of hypoglycemia, so that they respond promptly.

Not all students, especially young children, will recognize hypoglycemia symptoms with every episode. Some children and adolescents may have hypoglycemia unawareness. In other words, they do not experience early physical warning signs such as shaking, jitteriness, or sweating, and the only clue that their blood glucose levels are low is sudden behavior change. Even students who usually recognize when their blood glucose is low may sometimes have a sudden "low" without the initial symptoms. Although symptoms of hypoglycemia may vary from student to student, each student will tend to have the same symptoms each time hypoglycemia occurs.

Therefore, all school personnel should know how to recognize hypoglycemia and know what to do if they observe its onset.

Treatment of Hypoglycemia

In the event of suspected or actual hypoglycemia, treat the student immediately, and do not leave the student alone or send the student to another location. No student should ever be charged with accompanying another student who is experiencing hypoglycemia to another location.

As soon as the student exhibits symptoms treat the situation as a hypoglycemic emergency as outlined in the student's Emergency Care Plan. Immediately contact the school nurse, licensed supplemental health staff or trained diabetes personnel who will check the student's blood glucose level and treat the student for hypoglycemia. If the school nurse, licensed supplemental health staff or trained diabetes personnel are not available, or if the blood glucose level cannot be checked, school personnel should treat the student for hypoglycemia as outlined in the Emergency Care Plan. Symptoms will progress if not treated immediately. When in doubt, always treat for hypoglycemia.

The following checklist provides a generally accepted approach for the treatment of mild to moderate hypoglycemia. Each student's specific hypoglycemia treatment plan is provided in the student's DMMP and ECP.

Checklist for Treatment of Mild to Moderate Hypoglycemia Symptoms
☐ As soon as symptoms are observed, notify the school nurse or trained diabetes personnel. Check the student's blood glucose level to determine if it is low.
☐ If the blood glucose level is below the level in the Emergency Care Plan for Hypoglycemia (usually 70–80 mg/dL), or if the student has symptoms, give the student a **quick-acting glucose** product equal to 15 grams of carbohydrate (or the amount specified in the emergency care plan) such as: • 4 **glucose tablets** or 1 tube of glucose gel or • 4 ounces of fruit juice (not low-calorie or reduced-sugar) or • 4–6 ounces (half a can) of soda (not low-calorie or reduced-sugar)
☐ Wait 15 minutes, then recheck the blood glucose level.
☐ Repeat the steps above if the blood glucose level is below the level indicated in the Emergency Care Plan for Hypoglycemia.
☐ Contact the student's parents/guardians if indicated in the Emergency Care Plan for Hypoglycemia.
☐ Once blood glucose returns to normal, as designated in the student's Emergency Care Plan for Hypoglycemia, check the blood glucose level 1 hour later. If needed, provide an additional source of carbohydrate (e.g., whole grain crackers, graham crackers, granola bar, yogurt, fruit) if a meal or snack is not planned.

Severe hypoglycemia is rare at school and generally can be prevented with prompt treatment of mild to moderate symptoms of low blood glucose. When hypoglycemia symptoms are severe, the school nurse, licensed supplemental health staff or trained diabetes personnel must be notified and must respond immediately. Symptoms of severe hypoglycemia may include:

- Inability to eat food or drink fluids
- Unconsciousness or unresponsiveness
- Seizure activity or convulsions (jerking movements)

At this point, school personnel should never attempt to give the student food or a drink or to put anything in the mouth, because it could cause choking.

Severe hypoglycemia is treated by administering glucagon by injection. Glucagon is a hormone that raises blood glucose levels by causing the release of glycogen (a form of stored carbohydrate) from the liver. Glucagon is given by the school nurse, licensed supplemental health staff or trained diabetes personnel. Although it may cause nausea and vomiting when the student regains consciousness, glucagon is a potentially life-saving treatment that cannot harm a student. The school nurse, licensed supplemental health staff and/or trained diabetes personnel must know where the student's glucagon emergency kit is stored, have access to it at all times, and be familiar with the glucagon instructions before an emergency arises.

Checklist for Treatment of Severe Hypoglycemia
☐ Position the student on his or her side to prevent choking.
☐ Contact the school nurse or trained diabetes personnel immediately.
☐ Do not attempt to give anything by mouth.
☐ The school nurse or trained diabetes personnel should administer glucagon, as indicated in the student's Emergency Care Plan for Hypoglycemia.*
☐ Call 911 (Emergency Medical Services).
☐ Call the student's parents/guardians.
☐ Stay with the student until Emergency Medical Services arrive.
☐ Notify the student's personal diabetes health care team.
*If administration of glucagon is not authorized by the student's Diabetes Medical Management Plan or Emergency Care Plan for Hypoglycemia, or if it is not available, staff should call 911 immediately.

The parents/guardians should supply the school with a glucagon emergency kit if prescribed. The kit usually contains a bottle (vial) of glucagon in powder form and a prefilled syringe with special liquid; the two ingredients should only be mixed just before a glucagon injection is given. The glucagon emergency kit may be stored at room temperature. The school nurse, licensed supplemental health staff

and/or trained diabetes personnel should also be aware of the expiration date on the kit and notify the student's parents/guardians when a new kit is needed.

Recognizing and Treating Hyperglycemia (High Blood Glucose)
Hyperglycemia means blood glucose levels are above the target range, as specified in the student's DMMP. Almost all students with diabetes will experience blood glucose levels above their target range at times throughout the day. For many students, these elevations in blood glucose will be only minimally above the target range (less than 250 mg/dL) and are short in duration. Other students may experience daily spikes of the blood glucose level that are high (in excess of 250 mg/dL) and of longer duration.

Hyperglycemia does not usually result in a medical emergency. It is usually the result of:

- Too little insulin or other blood glucose-lowering medications
- Malfunction in the insulin pump or infusion set
- Food intake that has not been covered adequately by insulin or other blood glucose-lowering medications
- Decreased physical activity
- Illness
- Infection
- Injury
- Severe stress or emotional upset

Symptoms of Hyperglycemia
High blood glucose symptoms may include one or more of the following:

Hyperglycemia Symptoms	
• Thirst	• Change in appetite
• Dry mouth	• Blurry vision
• Frequent or increased urination	• Fatigue

Onset of hyperglycemia may occur over several hours or days. In the short term, hyperglycemia can impair cognitive abilities and adversely affect academic performance. In the long term, moderately high blood glucose levels can increase risk for serious complications such as heart disease, stroke, blindness, kidney failure, nerve disease, gum disease, and amputations.

Treatment of Hyperglycemia

As soon as symptoms of hyperglycemia are suspected, notify the school nurse, licensed supplemental health staff or trained diabetes personnel. Treatment of hyperglycemia begins with checking the student's blood glucose level to determine if it is above the target range. When checking blood glucose at a time not specified in the DMMP, treatment decisions should take into account the time and amount of the student's last carbohydrate intake or insulin dose.

In accordance with the Emergency Care Plan, the student's urine or blood should be checked for ketones, the chemicals the body makes when there is not enough insulin in the blood and the body must break down fat for energy. The urine ketone test involves dipping a special strip into the urine, waiting a specified amount of time, and then comparing the resulting color to a color chart. The blood ketone test is done with a finger stick using a special meter and a test strip, similar to checking blood glucose. If the test indicates ketones are present, notify the parents/guardians. Students with type 2 diabetes usually still make a reasonable amount of insulin, and therefore, ketone checks may not be prescribed.

Checklist for Treatment of Hyperglycemia
Refer to the student's DMMP for specific instru tions.
☐ Check the blood glucose level to determine if it is high.
☐ Check urine or blood for ketones.
☐ Calculate the **Insulin Correction Dose** needed.
☐ Administer supplemental insulin dose in accordance with the student's Emergency Care Plan for Hyperglycemia. (If student uses an insulin pump, see instructions below.)
☐ Give extra water or non-sugar-containing drinks (as needed).
☐ Allow free and unrestricted access to the restroom and to liquids, as high blood glucose levels can cause increased urination and may lead to dehydration if the student cannot replace the fluids.
☐ Recheck blood glucose every 2 hours to determine if it is decreasing to target range.
☐ Restrict participation in physical activity as specified in the DMMP. However, if the student is not nauseous or vomiting and moderate to large ketones are not present, light physical activity might help to lower the blood glucose level.
☐ Notify parents/guardians as specified in the DMMP.
For Students Using an Insulin Pump:
• If student uses a pump, check to see if pump is connected properly and functioning by giving a **correction bolus** through the pump and checking blood glucose level 1 hour later.
• If moderate or large ketones are present, change pump site and treat ketones with an injection of insulin by syringe or insulin pen.
• For infusion site failure: Insert new infusion set and/or replace reservoir, or give insulin by syringe or insulin pen.
• For suspected pump failure: Suspend or remove pump and give insulin by syringe or insulin pen.

Ketones and Diabetic Ketoacidosis
While hyperglycemia does not usually result in a medical emergency, the following situations may lead to a breakdown of fat, causing ketones to form along with the hyperglycemia:

- Significant or prolonged insulin deficiency from failure to take any insulin or the correct amount of insulin
- An insulin pump or infusion set malfunction causing an interruption in insulin delivery
- Physical or emotional stress that increases the release of hormones that work against the action of insulin
- Infection or illness, particularly with diarrhea and/or vomiting

Ketones are usually associated with high blood glucose levels but also may occur when a student is ill and blood glucose levels fall below the student's target range. At first, ketones will be cleared by the kidneys into the urine, but as their production increases, they build up in the bloodstream causing diabetic ketoacidosis (DKA), a medical emergency.

Diabetic ketoacidosis develops over hours to days and is associated with hyperglycemia, a buildup of ketones (ketosis) in the blood, and dehydration. As a result of these conditions, the classic signs of diabetic ketoacidosis include:

- Severe abdominal pain
- Nausea and vomiting
- Fruity breath
- Heavy breathing or shortness of breath
- Chest pain
- Increasing sleepiness or lethargy
- Depressed level of consciousness.

As soon as these symptoms are observed, the school nurse, licensed supplemental health staff or trained diabetes personnel should call 911, the parents/guardians, and the student's health care provider. Stay with the student until Emergency Medical Services arrive.

Administering Medications, such as Insulin
Students with type 1 diabetes—and many students with type 2 diabetes—need to administer or be given insulin at regular times during the school day. Students may need to take insulin to cover meals and/or snacks and may need additional or corrective dosages of insulin to treat hyperglycemia as specified in the DMMP. It is medically preferable that the student be allowed to self-administer insulin in the classroom or wherever they happen to be.

The DMMP, which will be different for each student, specifies the dosage, delivery system, and schedule for insulin administration. The Individualized Health Care Plan (IHP) and the student's education plan, based on the DMMP, should specify who will administer prescribed insulin and under what circumstances.

Some students who need insulin during the school day are able to administer it on their own; others will need supervision; and yet others will need someone to administer the insulin for them. The school nurse, licensed supplemental health staff and/or trained diabetes personnel should assist with insulin administration in accordance with the student's health care plans and education plans.

A licensed health care practitioner with expertise in the care and treatment of diabetes, such as a certified diabetes educator, should train diabetes personnel to administer insulin.

Types of Insulin

Today, new types of insulin and new delivery systems help keep blood glucose levels within the target range. These options, however, require more frequent blood glucose monitoring and more assistance for the student with diabetes.

Insulin has three characteristics:

- **Onset** is the length of time before insulin reaches the bloodstream and begins lowering blood glucose levels.
- **Peak** is the time at which insulin is at its maximum strength in terms of lowering blood glucose levels.
- **Duration** is the number of hours during which insulin continues to lower blood glucose levels.

Insulin is classified in four types by how it works:

- **Rapid-acting** begins to work about 15 minutes after injection, peaks in about 1 hour, and continues to work for 2 to 4 hours.
- **Short-acting** usually reaches the bloodstream within 30 minutes after injection, peaks anywhere from 2 to 3 hours after injection, and is effective for approximately 3 to 6 hours.
- **Intermediate-acting** generally reaches the bloodstream about 2 to 4 hours after injection, peaks 4 to 12 hours later, and is effective for about 12 to 18 hours.
- **Long-acting** reaches the bloodstream several hours after injection and tends to lower glucose levels fairly evenly over a 24-hour period.

Types of Insulin Plans

Insulin therapy plans are tailored to the individual student's insulin needs as well as the student's health literacy and numeracy (i.e., ability to understand the prescribed plan). Two common plans are the basal/bolus insulin plan and the fixed dose insulin therapy plan.

Basal/Bolus Insulin Plan (Adjustable Insulin Therapy)

Most students with type 1 diabetes use a basal/bolus insulin plan. This type of insulin plan, sometimes referred to as adjustable insulin therapy, reproduces or mimics the way a normally functioning pancreas produces insulin.

A coordinated combination of different types of insulin is used to achieve target blood glucose levels at meals and snacks, during periods of physical activity, and through the night.

Basal insulin is long-acting or intermediate-acting insulin delivered once or twice a day. This type of insulin is used to control blood glucose levels overnight and between meals.

Bolus insulin refers to a dose of rapid-acting or short-acting insulin that is given to cover the carbohydrate in a meal or snack and to lower blood glucose levels that are above target.

Students using a basal/bolus insulin plan require multiple injections during the school day, or they receive their insulin through a programmable insulin pump.

Fixed Dose Insulin Therapy

Other students may take the same doses of insulin each day with rapid-acting, short-acting, intermediate-acting, or long-acting insulin. This type of plan is sometimes referred to as fixed dose insulin therapy.

Insulin Storage

The shelf life of insulin after opening varies according to the type of insulin, the type of container (vial or pen cartridge), and how insulin is administered (through a syringe, a pen, or a pump). Review the product storage instructions on the manufacturer's package insert and check the expiration date.

In general, most opened vials of insulin may be left at room temperature (below 86 degrees Fahrenheit) for 30 days and then discarded. Most opened disposable pens or pen cartridges may be left

at room temperature for less than 30 days, depending on the type of insulin and the type of pen or cartridge. Unopened vials or pen cartridges should be stored in a refrigerator. They may be used until their expiration date and then must be discarded.

Insulin Delivery

The three most common ways to administer insulin are with a syringe, an insulin pen, or an insulin pump. The manufacturers of insulin, insulin syringes, insulin pens, and insulin pumps have websites where school personnel can learn more about these products.

Insulin syringes, available in several sizes, make it easy to draw up the proper dosage. Shorter, smaller needles make injections easy and relatively painless.

An insulin pen holds a cartridge of insulin. Insulin pens are convenient and appropriate when students need a single type of insulin. During the school day, pens are used most often with rapid-acting insulin to cover a meal or to treat a high blood glucose level. Generally, a user will follow these steps:

- Screw the needle onto the tip of the pen just before use.
- Dial the pen to 2 units.
- Hold the pen upright and press the button on the pen to discard the air and fill the needle with insulin.
- Repeat if needed until a drop of insulin appears.
- Dial the pen to the prescribed dose and inject the insulin.
- Remove the pen needle and dispose of it in a sharps container.

An insulin pump is a computerized device that is programmed to deliver small, steady doses of insulin throughout the day; additional doses are given to cover food intake and to lower high blood glucose levels. Most pumps now receive blood glucose values directly from the meter, but if not, the student must enter the blood glucose value as well in order for the pump to calculate the bolus dose.

Rapid-acting insulin is used in the insulin pump. Students using the insulin pump will not be taking any long-acting insulin. Therefore, a pump malfunction or extended disconnection from the pump (longer than 2 hours) increases the student’s risk of developing DKA more quickly. The parents/guardian should provide the school with a backup supply of syringes and rapid-acting insulin or insulin pens in the event of a pump failure. Keep supplies in a secure location.

There are several types of insulin pumps. School personnel can be trained on each student's pump by contacting the pump manufacturer or the student's diabetes health care team.

Some pumps look like a pager, and students usually wear it on their waistband, belt, or in their pocket. The pump holds a reservoir of insulin attached to an infusion set that leaves a very small needle or plastic cannula (a tiny, flexible plastic tube) under the skin. Infusion sets are started with a guide needle, then the cannula is left in place and taped with dressing, and the needle is removed. The cannula usually is changed every 2 or 3 days or when blood glucose levels remain above the target range or ketones are present. Routine site changes are a responsibility of the family and generally are done at home.

Other pumps look like a pod or a patch. These pumps are attached directly to the skin, and a guide needle inserts the cannula under the skin automatically. The student usually wears the pod on his or her abdomen, buttocks, leg, or arm. The pod contains the insulin (there is no tubing). The pod-type pump is controlled by a small hand-held computer device that is kept nearby. This type of insulin pump needs to be changed every 2 to 3 days.

Some pumps have the data from continuous blood glucose monitoring displayed on the pump screen. In some pumps, technology has been developed to allow communication between the pump and the CGM, enabling the insulin pump to rely on CGM information to reduce or stop insulin delivery if a low glucose level is anticipated. Some of the newer CGM have transmitters that display blood glucose values on tablets, smartphones, and computers.

If a student uses a CGM, verify a low blood glucose level with a finger stick. Treat the student for hypoglycemia, if needed, as prescribed in the student's DMMP.

Trained diabetes personnel who have been designated to administer the student's insulin must be knowledgeable about and trained in using and operating each student's insulin delivery system in the event that a school nurse or licensed supplemental health staff is not available.

Why Do Many Students and Families Prefer Insulin Pump Therapy?
• Users are freed from multiple daily insulin injections. • The pump delivers insulin in a way that is similar to what the body does naturally. • Users may achieve improved blood glucose control. • Basal insulin delivery can be fine-tuned to the user's needs, allowing for adjustments for the differences in insulin sensitivity that change over the course of 24 hours. • The pump uses frequent pulses of rapid-acting insulin, allowing for more consistent action on blood glucose than with intermediate- or long-acting insulin. • Users may be able to participate in unplanned physical activity without eating extra food. • The pump is durable and contains many child safeguards. • The pump can be preprogrammed with **insulin-to-carbohydrate ratios** and blood glucose correction factors. • When additional insulin, called a bolus, is needed to balance the carbohydrates in a meal or snack, or when blood glucose levels are high, the pump calculates the bolus dosage after the student enters the number of grams of carbohydrates to be eaten. • Innovations in pump and sensor technologies are allowing for automation of insulin delivery by the pump.

Following an Individualized Meal Plan

Current nutrition recommendations for students with diabetes are designed to provide maximum flexibility to meet each student's nutritional needs, appetite, eating habits, and schedules. Insulin regimens are then individualized to fit each student's lifestyle. The student's diabetes care plan, as set out in the DMMP and IHP, must be followed to avoid hypoglycemia or hyperglycemia.

The nutritional needs of students with diabetes do not differ from the needs of students without diabetes. All students need a variety of healthy foods to maintain normal growth and development. The meal plan recommended for students with diabetes is usually healthy for everyone. The major difference is that the timing, amount, and content of the food that students with diabetes eat, especially the carbohydrates (or carbs), are carefully matched to balance the action of the insulin and/or other diabetes medications that they take.

Although there usually are no forbidden foods for people with diabetes, students are advised to avoid "liquid carbs" such as sugar-containing soda and juices (including 100 percent fruit juice) and regular pancake syrup. The liquid carbs raise blood glucose rapidly, contain large amounts of carbs in small volumes, are hard to balance with insulin, and provide little or no nutrition. (Sugar-containing drinks are used, however, in treating hypoglycemia.)

Many students with type 2 diabetes follow a meal plan designed to help them achieve a healthy weight. These students may be prescribed a calorie target for the day as well as consistent carb amounts to aim for at each meal and snack to help manage their weight and blood

glucose. Ensuring that healthy foods such as whole grains, low-fat protein and dairy, and fruits and vegetables are available is critical to their diabetes management.

With passage of the Healthy, Hunger-Free Kids Act in 2010, schools have been assisting students in achieving a more healthful diet. This legislation has resulted in sweeping changes in school meal programs, including more whole grains, fruits and vegetables, milk choices limited to low-fat or fat-free, and maximum calorie levels for all school meals based on grade level.

Carbohydrate Counting and Identifying the Carb Content in Foods and Beverages

Carbohydrate (carb) counting is the most popular meal planning approach for children and youth. This approach involves identifying and calculating the number of grams of carbohydrate the student eats and drinks in a meal or snack. Sources of carbs include: starches (breads, crackers, cereal, pasta, rice), fruits and vegetables, dried beans and peas, milk, yogurt, and sweets.

The food service manager or staff and/or the school nurse should provide the carb content of foods and beverages to the parents/guardians and the student. If the nutrient analysis is not available, the school nurse and parents/guardians should work with the district food service office to obtain this critical information.
If the food service manager or the school district does not have this information, there are additional resources to help identify the carb content in foods and beverages. The school can identify a registered dietitian nutritionist (RDN) to work with the food service staff to make this information available. To locate an RDN in your area, visit the Academy of Nutrition and Dietetics website at Find an Expert, www.eatright.org/find-an-expert.

The U.S. Department of Agriculture (USDA) maintains a "National Nutrient Database", ndb.nal.usda.gov/ndb/, containing nutrient information on well over 8,000 foods and beverages. The Food and Drug Administration (FDA) requires "Nutrition Facts" labels on packages for most prepared foods such as breads, cereals, canned and frozen foods, snacks, desserts, drinks, etc. These labels include the carbohydrate content as well as other nutrient values for each serving in the package.

Meal Planning Approaches
Most students with diabetes have an individualized meal plan using a method of carbohydrate counting. The meal plan takes into account the student's nutritional needs, insulin plan, oral medications, and physical activity level.

There are two methods of meal planning using carb counting: (1) following a consistent carb intake meal plan and (2) adjusting insulin for changing carb intake. This information will be provided in the student's DMMP.

Method 1—Following a Consistent Carb Intake Meal Plan. Students who follow a consistent carb meal plan aim for a set amount of carb grams at each meal and snack and do not adjust their mealtime insulin for the amount of carb intake (e.g., 60 grams of carbs at each lunch). The student's personal diabetes health care team helps determine the amount of carbs that is right for each student at each meal. This method of meal planning is often used by students who take an intermediate-acting insulin in the morning or students who receive a preset amount of rapid- or short-acting insulin at lunch.

Students who follow a consistent carb meal plan need to maintain consistency in the timing and content of meals and snacks. The student should eat lunch at the same time each day. Snacks often are necessary to achieve a balance with the peak times of insulin action and with physical activity.

Method 2—Adjusting Insulin for Changing Carb Intake. Students who use multiple daily injections or an insulin pump usually use this method of meal planning. This method requires adjusting insulin doses to cover the amount of carbs the student will consume by using an insulin-to-carb ratio and an insulin correction factor (sometimes called an insulin sensitivity factor). These factors are individualized for each student and specified in the DMMP. This method gives the student with diabetes more flexibility with eating and requires a good understanding of the student's insulin therapy and carb counting.

See the worksheet examples in Advanced Insulin Management: Using Insulin-to-Carb Ratios and Correction Factors for instructions on how to compute the insulin dose using a student's insulin-to-carb ratio and insulin correction factor. Some students now may use a blood glucose meter that performs bolus calculations automatically. Insulin-to-carb

ratios and insulin correction formulas are pre-programmed into the device.

Other Dietary-Related Medical Conditions
A small percentage of students with diabetes may have other medical conditions that require dietary restrictions. For example, some students with type 1 diabetes may have celiac disease. They should not 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 pastas, cereals, and processed foods. These dietary restrictions should be outlined in the student's DMMP. School food service staff will also need to be made aware of a student's need for gluten-free meals.

Some students with type 2 diabetes may need to limit fat for control of weight and/or lipids. Still others may need to limit salt intake to help manage high blood pressure.

Promoting Regular Physical Activity
Physical activity is a critical element of effective diabetes management. Everyone can benefit from regular physical activity, but it is even more important for students with diabetes. In addition to maintaining cardiovascular fitness and managing weight, physical activity can help lower blood glucose levels.

Students with diabetes should participate fully in physical education classes and team or individual sports. To maintain blood glucose levels within the target range during extra physical activity, students will need to adjust their insulin and food intake. To prevent hypoglycemia, they also may need to check their blood glucose levels more frequently before, during, and after engaging in physical activity. The student's DMMP should specify when physical activity should be restricted because the blood glucose level is either too high or too low or if ketones are present.

Physical education teachers, sports coaches, and staff supervising recess must be able to recognize the symptoms of hypoglycemia and be prepared to call for help in case of a hypoglycemia emergency. The student's Emergency Care Plan, a quick-acting source of glucose, and the student's blood glucose meter should always be available, along with plenty of water.

Students using pager-type insulin pumps may disconnect from the pump for sports activities; the pod-type pump remains attached. If

students keep the pump on, they may set a temporary reduced insulin delivery rate or suspend use of insulin while they are playing. School personnel should provide the student with a safe location for storing the pump when the student does not wear it. The student's DMMP and IHP should include specific instructions for pump use during physical activity.

Maintaining a Healthy Weight

Maintaining a healthy weight is very important for students with diabetes to help manage blood glucose levels and to establish habits for managing their weight as they grow older. Healthy habits include being active every day and choosing healthy foods for meals and snacks.

More children and adolescents in the U.S. are either overweight or obese than ever before. This excess weight is placing more students at risk for type 2 diabetes. School personnel can help all students reach and maintain a healthy weight by encouraging them to make healthful lifestyle choices while they are young. They also can provide nonfood rewards and encourage healthy foods for class parties.

Working with the school wellness committee and the school-parents organization (e.g., Parent Teacher Association [PTA]/Parent Teacher Organization [PTO]), the parents/guardians can help by encouraging schools to offer healthy food choices at breakfast and lunch and in vending machines, to sell nonfood items for school fundraisers, and to include physical education in the school curriculum. All foods sold at school during the school day now need to meet nutrition standards. The Smart Snacks in School regulation applies to foods sold a la carte, in the school store, and vending machines.

Tips for Helping Students Reach and Maintain a Healthy Weight
☐ **Be active every day for at least 60 minutes.** Students do not have to join a gym or be on a sports team to stay active. Dancing, riding a bike, walking the dog, or doing any physical activity they enjoy for at least 60 minutes a day will work. Activity can be broken up into three 20-minute sessions or whatever works for the student.
☐ **Limit play time in front of the computer, tablet, smartphone, and TV** to 2 hours per day.
☐ **Limit portion sizes of foods high in fat, sugar, and salt.** Instead of eating a large serving of french fries, students can order a small serving or share a large serving with friends. Try measuring snacks in small portions instead of grazing.
☐ **Cut some calories.** Some healthy ways to cut calories include drinking water instead of sweetened fruit drinks, soda, or sports drinks and eating fruit instead of chips or candy. Encourage students to read food labels or download an app to learn about the number of calories, carbs, and fat in the foods and beverages they consume.
☐ **Eat a healthy breakfast.** Eating a healthy breakfast will help students stay focused during the day and help manage their blood glucose.
☐ **Lose weight slowly.** No more than 1 or 2 pounds of weight loss per month is recommended, because students are still growing. Losing weight slowly may help students keep it off.

Planning for Special Events, Field Trips, and Extracurricular Activities

Meeting the needs of students with diabetes requires advance planning for special events such as classroom parties, field trips, and school-sponsored extracurricular activities held before or after school. With proper planning for coverage by the school nurse, licensed supplemental health staff or trained diabetes personnel and adjustments to insulin dosage and meal plans, students with diabetes can participate fully in all school-related activities. The school food service staff can assist in the planning, especially when a student requires a modified snack or bag lunch for the event.

Although there usually are no forbidden foods in a meal plan for students with diabetes, school parties often include foods high in carbohydrates and fats. Serving more nutritious snacks will be healthier for all students and will encourage good eating habits. The parents/guardians should decide whether the student with diabetes should be served the same food as other students or food provided by the parents/guardian. If possible, give the parents/guardians advance notice about parties so they can incorporate special foods in the student's meal plan or adjust the insulin dosage.

Students often view field trips among the most interesting and exciting activities of the school year. Students with diabetes must be allowed to have these school-related experiences. Although it is not unusual to invite the parents/guardian to chaperone field trips,

parental/guardians' attendance can never be a prerequisite for participation by students with diabetes.

If the parent/guardian is unable to attend, a nurse or trained diabetes personnel (if designated) must accompany the student with diabetes on field trips. They should ensure that all of the student's snacks and supplies for checking blood glucose, administering insulin, and treating hypoglycemia are packed and taken on the trip. Diabetes management strategies for school-sponsored field trips should be included in the student's health care and education plans.

The plan for coverage and care during school-sponsored extra-curricular activities and field trips that take place outside of school hours (while the student is under school jurisdiction) also should be carefully noted in the student's health care and education plans. The school nurse should be provided with information regarding these activities at least two weeks in advance. As with field trips, the school nurse, licensed supplemental health staff or trained diabetes personnel (if designated) must be available at these activities.

Planning for Disasters and Emergencies

The parents/guardians must provide an emergency supply kit for use in the event of natural disasters or emergencies when students need to stay at school. This kit should contain enough supplies for at least 72 hours to carry out the medical orders in the DMMP, including the following items as appropriate:

- Blood glucose meter, testing strips, lancets, and batteries for the meter
- Urine and/or blood ketone test strips and meter
- Insulin, syringes, and/or insulin pens and supplies
- Insulin pump and supplies, including syringes, pens and insulin in case of pump failure
- Container for sharps (e.g. syringes, needles)
- Other medications
- Antiseptic wipes or wet wipes
- Quick-acting source of glucose
- Water
- Carbohydrate-containing snacks with protein
- Hypoglycemia treatment supplies (enough for three episodes): quick-acting glucose and carbohydrate snacks with protein
- Glucagon emergency kit

Dealing with Emotional and Social Issues

Students with diabetes must not only deal with the usual developmental issues of growing up but also with learning to manage this complex chronic disease. Diabetes affects every facet of life, complicating the task of mastering normal developmental challenges.

For the most part, students with diabetes do not want to be singled out or made to feel different from their peers. Diabetes care tasks, however, can set them apart and make them feel angry or resentful about having diabetes. Depression is being recognized as quite common among children and teens and even more so in those with diabetes.

Students react differently to having diabetes. They may be accepting, resentful, open to discussing it, or attempt to hide it. Often, the same student will experience all of these feelings over time. School personnel should be aware of the student's feelings about having diabetes and identify ways to ensure the student is treated the same as others.

Sometimes, students feel pressured to please their care providers, but cannot always comply with their requests. To appease their parents/guardians or members of their personal diabetes health care team, students may report fictitious blood glucose levels and/or ketone results.

Others use their diabetes to assert their independence and control and do not comply with their diabetes care plan. Still other students may be afraid or embarrassed by the potential for hypoglycemia and do not take all their insulin to avoid a low blood glucose. If this is a concern, the parents/guardians and the student's personal diabetes health care team can check the information in the memory of the blood glucose meter or the insulin pump for problems or inconsistencies.

Students with diabetes are at risk for developing eating disorders, and school staff should be aware of this. Some students, particularly females, may omit insulin as a quick way to lose weight, putting them at risk for hyperglycemia and ketoacidosis. Binge eating and bulimia are also seen in students with diabetes. If there are concerns that a student may have an eating disorder, notify the school nurse or the parents/guardians.

Diabetes can be a focal point for conflict within families. It is important to minimize diabetes-specific family conflict to promote optimal health and quality of life outcomes. The student's personal diabetes health care team and school health team must be aware of emotional and behavioral issues and refer students with diabetes and their families for counseling and support as needed.

One of the biggest challenges for students with diabetes is gradually becoming more independent from their parents/guardians. Yet diabetes may compromise independence, because the parents/guardians are concerned about their student's ability to perform self-care tasks and take responsibility for their diabetes. The parents/guardians, who are ultimately responsible for their student's well-being, may be reluctant to allow normal independence in children or teens who have not been able to take care of themselves properly. This parental concern can lead to increasing struggles with dependence, oppositional behavior, and rebellion.

Current research suggests, however, that when parents/guardians provide support and stay involved with their teen's diabetes management tasks throughout adolescence, students achieve better health outcomes. Teamwork or "interdependence" between the parents/guardians and their child is an effective strategy.

To deal with psychosocial aspects of diabetes in students, there are many resources available. When problems are observed, the school health team and the student's diabetes health care team may need to refer the family to a counselor experienced in working with families living with diabetes.

Section 2: Actions for School Personnel, Parents/Guardians, and Students

The health, safety, and educational progress of a student with diabetes depends on cooperation and collaboration among members of the school health team and the student's personal diabetes health care team. Working together, members of the school health team implement the provisions of the student's health care and education plans and provide the necessary assistance in the school setting. Refer to Section 1 for more information on the school health team and the health care and education plans.

The following pages describe the actions and responsibilities of key school staff members, the parents/guardians, and the student. A staff

member may fill more than one role. For example, a teacher or a coach also may be designated as trained diabetes personnel.
The recommended actions do not represent legal checklists of what school personnel must do to comply with relevant Federal and State laws. Rather, they are steps that administrators, school nurses, school personnel, the parents/ guardians, and students should take to help ensure effective diabetes management at school.

How to Use the Actions Section
Copy and distribute the Actions sheets on the following pages to the appropriate staff members, the parents/guardians, and students with diabetes who are able to take responsibility for their self-management.

Make copies of the Actions sheets for substitute personnel so that they understand their respective roles in diabetes management.

Review the Actions sheets with school personnel during Level 2 and Level 3 diabetes management training to ensure that all staff members understand their roles and responsibilities.

Please print and distribute to the school district administrator.

Actions for the School District Administrator

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

(Includes the superintendent, 504/IEP coordinator, or other school administrator responsible for coordinating school health services)

Understand and ensure compliance with the federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act, the Pennsylvania Nurse Practice Act, the Pennsylvania Public School Code and accompanying regulations.

Provide leadership in developing district policy related to all aspects of diabetes management at school that is consistent with the standards of care recommended for students with diabetes and the law. This includes: availability of the school nurse, licensed supplemental health staff, or trained diabetes personnel (if designated) when the student is at school or participating in activities and events while under school jurisdiction; delegation of responsibilities; required staff training; medication administration; blood glucose monitoring; and activation of Emergency Medical Services (EMS) in case of a diabetes emergency on or off the school campus. Obtain input from local or regional experts on developing appropriate policies.

Support implementation of district policy. Support school district health professionals and other school administrators regarding: 1) development, coordination, and implementation of diabetes management training; 2) ongoing quality control and improvement of these training programs; and 3) development and implementation of a program to monitor the performance of those who receive training.

Allocate sufficient resources to help students with diabetes, e.g., availability of the school nurse, licensed supplemental health staff or trained diabetes personnel (if designated) when the student is at school or participating in activities and events while under school jurisdiction.

Monitor schools attended by students with diabetes for compliance with district policy.

Actions for the School District Administrator, *Continued*

Meet with members of the school health team, as needed. Address issues of concern about the provision of diabetes care by the school district, as appropriate.

Ensure the development and implementation of a system that keeps school nurses informed of the pending enrollment of students with diabetes and any related enrollment changes that may occur throughout the school year and from year to year.

Learn about diabetes by reviewing the materials contained in this guide and by participating in Level 1 training.

Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the principal, school administrator, or designees.

Actions for the Principal or School Administrator

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Understand and ensure compliance with the federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act, the Pennsylvania Nurse Practice Act, the Pennsylvania Public School Code and accompanying regulations.

Participate in developing and implementing school policy related to diabetes management at school.

Implement policy on availability of trained staff for students with diabetes. Address the availability of the school nurse, licensed supplemental health staff, or trained diabetes personnel (if designated) when the student is in school or participating in school-sponsored activities and events. The school nurse, in consultation with the principal or school administrator, may identify staff members to receive training as trained diabetes personnel to assist with or perform designated diabetes care tasks for specific students.

Implement the policy for activation of Emergency Medical Services (EMS) in case of a diabetes emergency on or off the school campus.

Include provisions for students with diabetes in emergency/disaster planning (e.g., lockdown or evacuation).

Develop and implement a system to inform school health services of the pending enrollment of a student with diabetes.

Participate in a meeting with the school health team, which includes the student, the parents/guardians, school nurse, trained diabetes personnel (if designated), office personnel, the 504/IEP coordinator, teacher(s), and other staff members who have responsibility for the student. Plan to schedule and attend a meeting of the school health team before the school year starts, when the student is newly diagnosed, or other times as appropriate, to discuss the health care-

Actions for the Principal or School Administrator, *Continued*

related services the student may need based on the student's Diabetes Medical Management Plan (DMMP).

Allocate sufficient resources for helping students with diabetes in the school setting, including resources for the three levels of diabetes management training described in this guide.

Facilitate diabetes management training for school personnel as suggested in this guide. Work with the school nurse to arrange for a diabetes-trained health care practitioner, such as the school nurse or a certified diabetes educator, to plan and provide the three levels of diabetes management training for school personnel or access training through the on-line module provided by the Departments of Health and Education.

Identify all staff members who have responsibility for the student with diabetes throughout the school day and during extracurricular activities and field trips, while under school jurisdiction. Work with the school nurse to implement the appropriate level of training for staff members and to provide copies of the student's Emergency Care Plan, which contains information about the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) and whom to contact in case of a diabetes emergency.

Alert all school staff members and all substitute personnel who teach or supervise the student with diabetes (including playground monitors, bus drivers, and lunchroom personnel) about the student's needs. Work with the school nurse to familiarize school staff members with the services and emergency procedures contained in the student's health care and education plans.

Learn about diabetes by participating in Level 1 training and by reviewing the information in this guide.

Respond to signs and symptoms of hypoglycemia and hyperglycemia in accordance with the student's Emergency Care Plan. Know when and how to contact the school nurse, licensed supplemental health staff or trained diabetes personnel, where emergency supplies are kept, and the procedures for handling emergencies.

Actions for the Principal or School Administrator, *Continued*

Work with the school health team to ensure implementation of the student's health care and education plans. Monitor compliance with these plans, addressing any concerns raised by the student, the parents/guardians, school nurse, or student's personal diabetes health care team.

Support and facilitate ongoing communication among all members of the school health team.

Promote a supportive learning environment for students with diabetes to manage their diabetes safely and effectively at school. This includes enabling students to: monitor blood glucose levels and administer insulin and other medications as outlined in their plans of care; eat snacks for routine diabetes management and for treating low blood glucose levels; have bathroom privileges and access to drinking water; participate in all school-sponsored activities; and provide accommodations for health care appointments or illnesses.

Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the Certified School Nurse

Actions for the Certified School Nurse (school nurse)

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

When a school nurse is assigned to the school (or school district), he or she is the key school staff member who leads and coordinates the provision of health care services for a student with diabetes at school and at school-related activities. The school nurse, in collaboration with the school administrator, may take the lead in identifying and training diabetes personnel (if designated). The school nurse takes the lead in coordinating the provision of care by trained diabetes personnel (if designated).

Diabetes technology, therapies, and evidence-based practice all are changing rapidly. The school nurse, who provides care to students with diabetes and facilitates diabetes management training for school personnel, has the professional responsibility to acquire and maintain current knowledge and competency related to diabetes management on a regular and ongoing basis.

The school nurse is responsible for the following actions and should review them when notified that a student with diabetes is enrolled in the school, annually, or more often as necessary.

- Understand and ensure compliance with the federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act, the Pennsylvania Nurse Practice Act, the Pennsylvania Public School Code and accompanying regulations.
- Obtain and review the student's current Diabetes Medical Management Plan (DMMP) and other pertinent information from the student's parents/guardians.
- Using the medical orders in the DMMP and information obtained from a thorough nursing assessment, develop an Individualized Health Care Plan (IHP). Promote and encourage independence and self-care consistent with the student's ability, skill, maturity, and development as indicated in the DMMP. After reviewing the IHP with the parents/guardians and student, implement, review, and update the plan throughout the school year as needed.

Actions for the Certified School Nurse (school nurse), *Continued*

- Prepare the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia based on the medical orders in the DMMP. Provide copies of the emergency plans to all school personnel who have responsibility for the student with diabetes throughout the school day and during school-sponsored extracurricular activities and field trips (e.g., teachers, coach, physical education teacher, lunchroom staff, bus driver).
- Facilitate the initial school health team meeting to discuss implementing the student's DMMP and IHP. Participate as a health expert on the teams that develop and implement the student's Section 504 Plan, other education plan, or individualized education program. Monitor compliance with these health care and education plans and facilitate follow-up meetings of the school health team to discuss concerns, receive updates, and evaluate the need for changes to the student's plans, as appropriate.
- The school nurse, in consultation with the principal or school administrator, may identify staff members to receive training as trained diabetes personnel to assist with or perform designated diabetes care tasks for specific students.
- While the chief school administrator is ultimately responsible for coordinating diabetes management training for the trained diabetes personnel (if designated) and all staff members who have responsibility for the student with diabetes, the school nurse may assist with this task. Use the three levels of training described in this guide to design the diabetes management training, and consider using standardized training materials that are available for training school personnel. Determine that all personnel mentioned in the health care and education plans know their roles in carrying out these plans, are trained in how to carry out their roles, and know how their roles relate to each other, when and where to get help, where routine and emergency supplies are kept, and the procedures for handling emergencies.
- Make parents/guardians and the student aware of which school personnel will be informed about the student's diagnosis and who will be trained to provide care.

Actions for the Certified School Nurse (school nurse), *Continued*

- Obtain written authorization from the student's health care practitioner and parents/guardians that trained diabetes personnel (if designated) may administer specified medications.
- Obtain materials and medical supplies necessary for performing diabetes care tasks from the parents/guardians. Arrange a system for notifying the student or the parents/guardians when supplies have expired or need to be replenished.
- Obtain materials for the emergency supply kit from the parents/guardians and designate a storage location for emergency use. The kit should contain enough supplies for at least 72 hours. Notify all school personnel of its location.
- Perform or assist the student with routine and emergency diabetes care tasks, including blood glucose monitoring, urine or blood ketone testing, insulin and other medication administration, carbohydrate counting, and glucagon administration. Be aware of the school's policy on activating Emergency Medical Services in case of a diabetes emergency.
- Maintain accurate documentation of all diabetes care provided at school. Document communications with the student, the parents/guardians, and the student's personal diabetes health care team, and document communications related to the training and supervision of trained diabetes personnel (if designated).
- Provide ongoing education and training as the school year progresses for staff and new staff, as needed, and when the student's DMMP changes.
- Assess competence and provide ongoing supervision of trained diabetes personnel (if designated) in carrying out the health care tasks outlined in the student's health care and education plans.
- Conduct ongoing, periodic assessments of the student with diabetes and update the IHP. Assessments should include self-care abilities, adherence to diabetes care tasks, successes/ barriers to meeting blood glucose target ranges, social-emotional concerns, and readiness for transitions (e.g., high school, college, adulthood). Watch for signs of eating disorders, such as unexplained weight loss, particularly in female students.

Actions for the Certified School Nurse (school nurse), *Continued*

- Obtain written authorization from the student's health care practitioner and parents/guardians regarding whether the student is competent to self-administer the medication or monitoring equipment and practice proper safety precautions for the handling and disposing of the medication and monitoring equipment. Following receipt of this authorization, the school nurse has the student demonstrate competency of self-administer and proper safety precautions.
- Foster a supportive learning environment and treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom. Teasing and bullying should be reported and addressed immediately.
- Distribute the Diabetes Overview in this guide to all school personnel who have responsibility for students with diabetes, and determine that they understand the basic elements of effective diabetes management and know how to recognize and respond to a diabetes emergency.
- Provide education and act as a resource on managing diabetes at school to the student, family, and school staff.
- Act as an advocate for students to help them meet their diabetes health care needs.
- Assist the classroom teacher(s) with developing a plan for substitute teachers.
- Assist the physical education teacher with managing the student's physical activity program at school.
- Visit the classroom teachers routinely to provide support and counseling and to address concerns regarding the impact of diabetes on the student in the classroom.
- Collaborate with coworkers and outside agencies (e.g., school district registered dietitian nutritionist, food service manager, and food service personnel) to obtain nutrition information for the parents/guardians and the student.

Actions for the Certified School Nurse (school nurse), *Continued*

- Communicate with the student's parents/guardians and—with their permission—communicate with the student's personal diabetes health care team about progress as well as any concerns about the student's diabetes management or health status, such as hypoglycemia episodes, hyperglycemia, general attitude, emotional issues, and self-management.
- Respect the student's confidentiality and right to privacy.
- Promote and encourage independence and self-care consistent with the student's ability, skill, maturity, and developmental level.

Please print and distribute to trained diabetes personnel.

Actions for the Trained Diabetes Personnel

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

With proper supervision and training, nonmedical school personnel or unlicensed assistive personnel, called "trained diabetes personnel" in this guide, may be trained and supervised to help students manage their diabetes safely at school. Trained diabetes personnel may include school staff members such as teachers, coaches, and administrators as well as health aides, licensed practical nurses and non-certified registered nurses. One or more school staff members may be trained to perform student-specific diabetes care tasks.

Prior to permitting nonmedical school personnel to administer medications via injection or infusion to a particular student, in addition to other diabetes care tasks, the school must have obtained written authorization from the student's health care practitioner and parents/guardians.

Once it has been determined that a student-specific diabetes care task may be designated, the school nurse, in collaboration with the principal, identifies which school personnel are most appropriate to be trained. A diabetes-trained health care practitioner, such as the school nurse or a certified diabetes educator, develops and implements the training program using standardized training materials such as those described in Train School Personnel. They also evaluate the ability of trained diabetes personnel to perform the task and establish a plan for ongoing coordination throughout the school year.

The school nurse, in collaboration with the school administrator, may take the lead in identifying and training diabetes personnel (if designated). The school nurse takes the lead in coordinating the provision of care by trained diabetes personnel (if designated).The school nurse, another qualified health professional, or at least one of the trained diabetes personnel (if designated) should be onsite during school hours and during school-sponsored activities that take place before or after school, or off campus, in which a student with diabetes participates.

Actions for the Trained Diabetes Personnel, *Continued*

The specific roles and responsibilities of the trained diabetes personnel will be determined by the licensed healthcare practitioner with expertise in the care and treatment of diabetes, in consultation with the school nurse and should be consistent with the student's health care plans (the Diabetes Medical Management Plan is prepared by the student's personal diabetes health care team and the Individualized Health Care Plan, Emergency Care Plan and Individualized Transportation Plan are prepared by the school nurse) and education plan (Section 504 Plan, other education plan, or IEP). All diabetes care tasks should be provided as prescribed by the student's Diabetes Medical Management Plan or physician's orders.

Under no circumstances should a trained diabetes personnel be required to make independent decisions about the daily, ongoing management of a student with diabetes.

Understand your responsibilities under Federal and State laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Participate in school team meetings to discuss implementing the student's health care and education plans.

Successfully complete the Level 3 training described in this guide and demonstrate competency in student-specific diabetes care tasks. Participate in additional education and training, as needed, or if the student's DMMP changes.

Perform or assist the student with routine and emergency diabetes care tasks, including blood glucose monitoring, urine and/or blood ketone testing, insulin and other medication administration, carbohydrate counting, and glucagon administration after receiving training under the direction of the school nurse or other assigned health care professional and as designated in the student's health care and education plans.

Know how to recognize the signs and symptoms of hypoglycemia and hyperglycemia, where routine and emergency supplies are kept, how to implement the student's Emergency Care Plans for Hypoglycemia

Actions for the Trained Diabetes Personnel, *Continued*

and Hyperglycemia, and how to activate Emergency Medical Services (EMS) in case of a diabetes emergency.

Document the diabetes care provided according to standards of nursing practice.

Be available on campus during regular school hours and when the student participates in school-sponsored extracurricular activities held before or after school, as determined by the student's health care and education plans.

Accompany the student on field trips or to off-campus school-sponsored sports events and activities, as determined by the student's health care and education plans.

Know your role in helping the student with diabetes in a disaster, lockdown, or emergency situation.

Communicate directly and regularly with the school nurse or the supervising health care professional. Ask for help or review when uncertain about any task you have been asked to perform.

Consult with the school nurse and appropriate members of the school health team according to the student's health care and education plans and when questions arise or the student's health status changes.

Foster a supportive learning environment and treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom. Teasing and bullying should be reported and addressed immediately.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the teacher.

Actions for the Teacher

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Participate in the school health team meeting(s). The teacher(s) who has primary responsibility for the student participates in the school health team meeting(s) when the student's health care plans (Diabetes Medical Management Plan, Individualized Health Care Plan, and/or Emergency Care Plans for Hypoglycemia and Hyperglycemia) and education plan (Section 504 Plan, other education plan, Individualized Education Program) are discussed.

Work with other members of the school health team to implement the student's health care and education plans.

Consult with the school administration to determine the appropriate level of diabetes management training you should attend for carrying out your responsibilities and complete the training.

Review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes.

Recognize that a change in the student's behavior could be a symptom of blood glucose changes. Be aware that a student with low or high blood glucose levels may have some cognitive impairment that could adversely affect classroom performance, especially in timed-testing situations.

Be prepared to respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) in accordance with the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia. These plans include information on when and how to contact the school nurse or trained diabetes personnel. When experiencing hypoglycemia, the student should never be left alone, sent anywhere alone, or sent with another student.

Actions for the Teacher, *Continued*

Be aware of the school's policy for activating Emergency Medical Services (EMS) in case of a diabetes emergency. Know where supplies to treat low blood glucose are kept and where students with diabetes normally keep their supplies.

Know your role in helping the student with diabetes in a disaster, lockdown, or emergency situation.

Provide a supportive learning environment for students with diabetes to manage their diabetes safely and effectively at school. This includes enabling students to: check blood glucose; use smartphones and other monitoring technology; administer insulin and other medications; eat snacks for routine diabetes management and for treatment of low blood glucose levels; have bathroom privileges; have access to drinking water; and participate in all school-sponsored activities.

Provide accommodations for students with diabetes such as alternative times and arrangements for exams and permission for absences—without penalty—for health care appointments and illness, as indicated in the student's health care and education plans.

Provide the student with opportunities to make up missed classroom assignments or exams due to diabetes-related care or illness, and assist the student in understanding skills and concepts missed due to such absences.

Recognize that eating meals and snacks on time is a critical component of diabetes management. Failure to eat lunch on time or not having enough time to finish a meal could result in low blood glucose levels, especially if a student has missed a morning snack or has had a physically strenuous or otherwise active morning at school.

Provide information for substitute teachers about the day-to-day and emergency needs of the student. Leave a copy of the Emergency Care Plans for Hypoglycemia and Hyperglycemia readily available.

Notify the parents/guardians in advance of changes in the school schedule, such as class parties, field trips, and other special events.

Communicate with the school nurse, trained diabetes personnel (if designated), or parents/guardians regarding the student's progress or any concerns about the student.

Actions for the Teacher, *Continued*

Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom. Teasing and bullying should be reported and addressed immediately.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the school psychologist, counselor, and social worker.

Actions for the School Psychologist, Counselor, and Social Worker

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Work with the school health team to implement the student's health care and education plans. Health care plans include the Diabetes Medical Management Plan, Individualized Health Care Plan, and Emergency Care Plans for Hypoglycemia and Hyperglycemia; the education plan includes the Section 504 Plan, other education plan, or individualized education program.

Consult with the school administration to determine the appropriate level of diabetes management training you should attend for carrying out your responsibilities and complete the training.

Review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes.

Be prepared to respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) in accordance with the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia. These plans include information on when and how to contact the school nurse or trained diabetes school personnel. Be aware of the school's policy for activating Emergency Medical Services (EMS) in case of a diabetes emergency.

Participate in school health team meetings and communicate with the school nurse, trained diabetes personnel, and parents/guardians regarding the student's progress or any concerns about the student.

Work with school staff to promote a supportive learning environment for students with diabetes. Communicate with the school nurse regarding any concerns about the student.

Actions for the School Psychologist, Counselor, and Social Worker, *Continued*

Ensure that the student with diabetes is treated the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom. Teasing and bullying should be reported and addressed immediately.

Be aware of and be prepared to respond to the emotional needs of the student. Students react differently to having diabetes. Some are accepting and open to discussing it; others are resentful and may attempt to hide it. Often, a student will experience both types of feelings. Be aware of the student's feelings about having diabetes and identify ways to ensure the student is treated the same as other students.

Recognize that students with chronic illnesses such as diabetes may rebel by discontinuing all or part of their medical regimen. For example, some adolescents may stop testing their blood glucose or give their parents/ guardians and health care providers incorrect information about their blood glucose levels. Adolescents with diabetes may also burn out from the daily demands of diabetes self-management. For teens who rebel or have "diabetes burnout," a temporary period of increased support and involvement by parents/guardians and school personnel can help to maintain the teen's health while providing needed respite from the burden of diabetes management.

Watch for signs of eating disorders, such as unexplained weight loss, particularly in female students.

Be aware that some students may not wish to share information about their diabetes with other students or school staff, particularly if it makes them feel different from others.

Promote and encourage independence and self-care consistent with the student's ability, skill, maturity, and development.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the physical education teacher; coach; athletic trainer; and, if appropriate, playground/ campus supervisor.

Actions for the Physical Education Teacher, Coach, and Athletic Trainer

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Work with other members of the school health team to implement the student's health care and education plans. Health care plans include the Diabetes Medical Management Plan, Individualized Health Care Plan, and Emergency Care Plans for Hypoglycemia and Hyperglycemia; the education plan includes the Section 504 Plan, other education plan, or individualized education program.

Consult with the school administration to determine the appropriate level of diabetes management training you should attend for carrying out your responsibilities and complete the training.

Review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes. (See Promote Regular Physical Activity.)

Be aware and informed that the student wearing an insulin pump may need to disconnect temporarily from the pump during physical activities. Allow students with diabetes to wear their insulin pump and/or sensor and medical ID during physical activity.

Designate a safe place for students to keep their diabetes supplies, including their insulin pump, if they remove it during physical activity.

Make sure blood glucose monitoring equipment and a quick-acting form of glucose are available at all activity sites.

Include the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia and diabetes supplies in the first aid pack that goes out to physical education activities, practices, and games.

Actions for the Physical Education Teacher, Coach, and Athletic Trainer, *Continued*

Allow the student to monitor blood glucose levels and/or administer insulin, as outlined in the student's health care plans and education plans. Allow the student to wear their medical ID during physical activity.

Recognize that a change in the student's behavior could be a symptom of blood glucose changes.

Understand and be aware that hypoglycemia (low blood glucose) can occur during and after physical activity.

Know the signs and symptoms of hypoglycemia and hyperglycemia as listed in the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia.

Be prepared to respond immediately to take initial actions to treat hypoglycemia and hyperglycemia. Allow students to discontinue physical activity if hypoglycemia is suspected. If treatment for hypoglycemia is required, do not allow the student to engage in physical activity until blood glucose has returned to his/her target range.

Take initial actions to treat hypoglycemia by providing the student with immediate access to a quick-acting form of glucose in accordance with the student's Emergency Care Plan for Hypoglycemia. This plan includes information on when and how to contact the school nurse or trained diabetes personnel. Be aware of the school's policy for activating Emergency Medical Services (EMS) in case of a diabetes emergency.

Provide input to the student's school health team as needed.

Communicate with the school nurse and/or trained diabetes personnel (if designated) regarding any observations or concerns about the student.

Provide information to the substitute physical education teacher about the day-to-day and emergency needs of the student. Leave copies of the Emergency Care Plans for Hypoglycemia and Hyperglycemia and supplies readily available.

Actions for the Physical Education Teacher, Coach, and Athletic Trainer, *Continued*

Encourage the same level of participation in physical activities and sports for students with diabetes as for other students, except to meet medical needs.

Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks during physical activity. Teasing and bullying should be reported and addressed immediately.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the food service manager.

Actions for the Food Service Manager and Lunchroom Staff

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Understand your own and your staff's responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Ensure that you and your staff work with the school health team to implement the student's health care and education plans. Health care plans include the Diabetes Medical Management Plan, Individualized Health Care Plan, and Emergency Care Plans for Hypoglycemia and Hyperglycemia; the education plan includes the Section 504 Plan, other education plan, or individualized education program.

Obtain a copy of the student's meal plan from the health care plans developed by the student's personal diabetes care team and the school nurse. Accommodate student's special dietary needs when medically necessary.

Communicate to staff that eating meals and snacks on time and having sufficient time to finish eating are critical components of diabetes management. If students with diabetes fail to eat lunch on time, they could develop hypoglycemia (low blood glucose), especially if they have missed a morning snack or have had a physically strenuous or otherwise active morning at school. Under certain circumstances, supervisory lunch personnel may need to encourage the student to go to the front of the line and eat appropriate foods.

Obtain a copy of the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia for treating low blood glucose and high blood glucose and keep them in a known yet secure place in the lunchroom.

Consult with the school administration to determine the appropriate level of diabetes management training that you and your staff should attend for carrying out your responsibilities and complete the training.

Actions for the Food Service Manager and Lunchroom Staff, *Continued*

Ensure that you and your staff review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes.

Provide breakfast and lunch menus and a meal schedule in advance to the student's parents/guardians, including grams of carbohydrates. Advise the parents/guardians of any unannounced menu substitutions.

Inform the parents/guardians prior to the beginning of the school year if district policy requires a physician order for the student to obtain extra selections of a particular food item.

Review the signs and symptoms of hypoglycemia and hyperglycemia with your staff so they can recognize that a student's behavior change could be a symptom of blood glucose changes.

Be sure that you and your staff are prepared to respond immediately to the signs and symptoms of hypoglycemia and hyperglycemia, and take appropriate action in accordance with the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia. Know when and how to contact the school nurse or trained diabetes personnel for help. Be aware of the school's policy for activating Emergency Medical Services (EMS) in case of a diabetes emergency.

Ensure that you and your staff know where supplies are kept to treat hypoglycemia (e.g., with the student or in another place). Supplies may include: 4 glucose tablets or 1 tube of glucose gel or 4 ounces of fruit juice (not low-calorie or reduced-sugar) or 4 to 6 ounces of soda (not low-calorie or reduced-sugar).

Provide input to the school health team when requested.

Communicate with the school nurse and/or trained diabetes personnel (if designated) regarding the student's progress or any concerns about the student.

Ensure that your staff treats the student with diabetes the same as other students, except when necessary to respond to their medical needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood

Actions for the Food Service Manager and Lunchroom Staff, *Continued*

glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom. Teasing and bullying should be reported and addressed immediately.

Ensure that your staff respects the student's confidentiality and right to privacy.

Please print and distribute to the transportation manager and bus drivers.

Actions for the Transportation Manager

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Inform drivers about which students on their bus routes have diabetes in a way that protects the student's right to privacy and confidentiality. Bus drivers who are responsible for implementing an IEP have the right to access that document.

Ensure that drivers understand their responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Consult with the school administration to determine the appropriate level of diabetes management training that drivers should attend for carrying out their responsibilities and ensure that they complete the training.

Ensure that drivers obtain a copy of the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia and keep them on the bus in a known, yet secure place. Ensure that substitute drivers have access to the plans.

Ensure that drivers recognize that a student's behavior change could be a symptom of blood glucose changes.

Ensure that drivers are prepared to respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) and take initial actions in accordance with the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia. These plans include information on when and how to contact the school nurse, trained diabetes personnel (if designated), and Emergency Medical Services (EMS).

Ensure that you and drivers know where supplies are kept to treat hypoglycemia (e.g., with the student or on the bus). Supplies may include 4 glucose tablets, 1 tube of glucose gel, 4 ounces of fruit

Actions for the Transportation Manager, *Continued*

juice (not low-calorie or reduced-sugar), or 4 to 6 ounces of soda (not low-calorie or reduced-sugar).

Ensure that drivers understand and are aware that hypoglycemia (low blood glucose) can occur at any time—at the beginning of the day, on a field trip, or when students are going home.

Ensure that drivers allow students with diabetes to eat snacks and drink beverages on the bus because these items may be needed at certain times to help students manage their diabetes. Be aware of other students on the bus with food allergies. Approved snacks should be in the student's Emergency Care Plan or IHP.

Ensure that drivers communicate with the school nurse, trained diabetes personnel (if designated), and other members of the school health team regarding the student's progress as well as any concerns.

Ensure that drivers treat the student with diabetes the same as other students, except when necessary to respond to their medical needs.

Ensure that drivers respect the student's confidentiality and right to privacy.

Please print and distribute to the bus driver.

Actions for the Bus Driver

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

If you are informed that students on your bus route have diabetes, understand that you may have certain responsibilities relating to those students.

Know that federal and state laws may apply to students with diabetes and management of their disease.

Attend diabetes management training required by your supervisor to learn more about diabetes and to understand what you need to do.

Obtain copies of the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia (low blood glucose and high blood glucose) from the school nurse and keep them on the bus in a known yet secure place. Leave the plans readily available for substitute drivers, while maintaining confidentiality.

Understand that a change in the student's behavior could be a symptom that the student's blood glucose is too high or too low.

Understand and be aware that low blood glucose (sugar) is a serious condition that can happen suddenly and requires immediate treatment. It can occur at any time—at the beginning of the day, on a field trip, or when children are going home.

Be prepared to respond immediately to the signs and symptoms of hypoglycemia and hyperglycemia. Look over the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia for instructions on what to do and when and how to contact the school nurse or trained diabetes personnel. Be aware of the school's policy for activating Emergency Medical Services (EMS) in case a student has a diabetes emergency.

Know where supplies are kept to treat hypoglycemia (e.g., with the student or on the bus). Supplies may include: 4 glucose tablets or 1 tube of glucose gel or 4 ounces of fruit juice (not low-calorie or reduced-sugar), or 4 to 6 ounces of soda (not low-calorie or reduced-sugar).

Actions for the Bus Driver, *Continued*

Allow students with diabetes to eat snacks and drink beverages on the bus because these items may be needed at certain times to help students manage their diabetes. Be aware of other students on the bus with food allergies. Approved snacks should be in the student's Emergency Care Plan or IHP.

Communicate with the school nurse, trained diabetes personnel (if designated), and other members of the school health team regarding the student's progress as well as any concerns.

Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks on the bus. Teasing and bullying should be reported and addressed immediately.

Respect the student's confidentiality and right to privacy.

Please print and distribute to the parents/guardians.

Actions for the Parents/Guardians

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Notify the school principal as well as the school nurse, school psychologist or guidance counselor, and teacher(s) that your student has diabetes when the student enrolls in school, is newly diagnosed with the disease, and at the beginning of each school year.

Work with your student's personal diabetes health care team to develop a Diabetes Medical Management Plan that contains the medical orders for your child. Use the sample plan in this guide as an example of the information to include.

Provide written authorization from the student's health care practitioner and parents/guardians that trained diabetes personnel (if designated) may administer specified medications.

Provide written authorization from the student's health care practitioner and parents/guardians if the student is competent to self-administer the medication or monitoring equipment and practice proper safety precautions for the handling and disposing of the medication and monitoring equipment.

Submit the signed Diabetes Medical Management Plan from your student's personal diabetes health care team to the school nurse or other member of the school health team as soon as possible after your student has been diagnosed with diabetes, at the beginning of each school year, and when there are changes to your student's plan. Permit sharing of medical information necessary for your student's safety between the school and your student's health care providers.

Talk with your student's personal diabetes health care team about communicating with the school health team and responding to student emergencies as they occur.

Provide accurate and current emergency contact information to the school, and update the school about any changes.

Obtain completed copies from the school nurse of your student's Emergency Care Plans for Hypoglycemia and Hyperglycemia based on the medical orders in the Diabetes Medical Management Plan. These plans inform school personnel about the symptoms of low and high

Actions for the Parents/Guardians *Continued*

blood glucose, what to do, and whom to contact in case of an emergency. Be aware of the school's policy for activating Emergency Medical Services (EMS) in case of a diabetes emergency.

Attend and participate in the initial and annual meetings of the school health team to discuss implementing the medical orders in your student's Diabetes Medical Management Plan and to review the services your student may need. Participate in developing an IHP, Section 504 Plan, other education plan, or IEP. The education plan is developed to manage the student's diabetes safely and effectively in school, where required under Section 504 of the Rehabilitation Act of 1973 or the Individuals with Disabilities Education Act. The school health team generally includes the student, parents/guardians, school nurse, principal, 504/IEP coordinator, teachers, and other school personnel who have responsibility for your child during the school day.

Be knowledgeable about federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Individuals with Disabilities Education Act and the Pennsylvania Public School Code. Understand the procedures for implementing these laws.

Review the information in this guide about effective diabetes management in the school setting and refer to it to help your student, to promote your student's regular attendance at school, and to work collaboratively with your student's personal diabetes health care team and the school health team.

Provide specific information to the school health team about your student's diabetes and performance of diabetes care tasks at home.

Inform the school nurse or trained diabetes personnel (if designated) about any changes in your student's health status or medical orders.

Consult with the school nurse to monitor supplies and replenish them, as needed; refill or replace supplies that have expired.

Provide and maintain all supplies and equipment necessary to accommodate your student's long-term needs (72 hours) in case of a disaster, lockdown, or emergency.

Actions for the Parents/Guardians, *Continued*

Inform appropriate school staff (principal, teachers, coaches, and others) when your student plans to participate in school-sponsored activities that take place before or after school or off campus so that health care coverage can be coordinated to ensure your student's health and safety.

Respect your student's confidentiality and right to privacy.

Please print and distribute to the student with diabetes.

Actions for the Student with Diabetes

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Find out who is on the school health team—the people who will be helping you with your diabetes care. Know how to contact them if you need help.

Participate in the school health team meetings to talk about your health care and education plans.

Always wear a medical alert ID.

Always carry a quick-acting source of glucose, as recommended by your personal diabetes health care team.

Tell your teachers and other school staff members if you feel symptoms of low or high blood glucose, especially if you need help.

Work with the school health team members if you need help during the school day with checking your blood glucose, getting insulin, or eating the right amount of food at the right time.

Take charge of your diabetes care at school, as allowed in your health care and education plans. This includes being in contact with the school nurse.

Talk with your school health team about which diabetes care tasks you are responsible for and which ones they will help you with. You may be responsible for the following diabetes care tasks:

- Checking and recording blood glucose levels.
    - Figuring out the correct insulin dose you need.
    - Giving yourself insulin.
- Throwing away needles, lancets, and other supplies you have used in a proper container or taking them home with you according to your health care and education plans.
- Eating meals and snacks as planned.
- Figuring out the carbohydrate (carb) content of food.
- Treating low blood glucose with a quick-acting glucose product.
- Keeping diabetes equipment and supplies with you at all times in a secure place.

Actions for the Student with Diabetes, *Continued*

Things You Need to Know:
1. **What** your health care and education plans say about the help you will receive to manage your diabetes at school, which people at school will help you, and what is expected of you. 2. **Whom** to contact (in school and at home) when your blood glucose is too low or too high or when you are not feeling well. 3. **When** you should check your blood glucose levels, receive insulin, have a snack, eat a meal, and ask for help. 4. **Where** your daily and emergency diabetes supplies are stored if you don't carry them, and whom to contact when you need to use the supplies or when you need help.

Section 3: Tools for Effective Diabetes Management

This section contains examples of important tools for helping schools implement effective diabetes management:

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.

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.

Emergency Care Plans for Hypoglycemia and Hyperglycemia, based on the DMMP, summarize how to recognize and treat hypoglycemia and hyperglycemia and whom to contact for help. The school nurse will coordinate development of these plans. Emergency Care Plans for Hypoglycemia and Hyperglycemia 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/guardians as well.

Individualized Transportation Plan is recommended to assist in identifying appropriate transportation services for students with special health care needs.

Section 504 Service Agreement is the commonly used term for a plan of services developed under Section 504 of the Rehabilitation Act. For a student with diabetes, the plan would be developed and reviewed by a team that usually includes: the school nurse, parents/guardians, 504 coordinator, school administrator, school psychologist or guidance counselor, and teacher.

How to Use the Tools for Effective Diabetes Management

- The parents/guardians 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/guardians 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; upon a change in the student's prescribed care regimen, level of self-management, or school circumstances (e.g., a change in schedule); or at the request of the student or parents/guardians 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/guardians 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 for Hypoglycemia and Hyperglycemia 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/guardians.
- During all levels of training, information in the Emergency Care Plans for Hypoglycemia and Hyperglycemia, how to respond and whom to contact for help in an emergency should be reviewed with school personnel.

Diabetes Medical Management Plan (DMMP)

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

This plan should be completed by the student's personal diabetes health care team, including the parents/guardians. 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 information

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: _____

Bus number: _____ OR Parent Transport _____

Contact information

Parent/Guardian 1: _____

Address: _____

Telephone: Home: _____

Work: _____

Cell: _____

Email address: _____

Parent/Guardian 2: _____

Address: _____

Telephone: Home: _____

Work: _____

Cell: _____

Email address: _____

Student's physician/health care provider: _____

Address: _____

Telephone: Work: _____

Emergency number: _____

Email address: _____

Other emergency contacts:

Name: _____Relationship: _____

Telephone: Home: _____

Work: _____

Cell: _____

Checking blood glucose

Brand/model of blood glucose meter: _____

Target range of blood glucose:

Before meals: __ 90–130 mg/dL Other: _____

Check blood glucose level:

__Before breakfast __After breakfast __Hours after breakfast

__2 hours after a correction dose __Before lunch

__After lunch __Before dismissal __Hours after lunch

__Mid-morning __Before PE __After PE

__Before recess __After recess

Other: _____

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

__As needed for signs/symptoms of illness

Preferred site of testing: __Side of fingertip Other: _____

Note: The side of 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 a school nurse or trained diabetes personnel to check blood glucose

__Uses a smartphone or other monitoring technology to track blood glucose values

Continuous glucose monitor (CGM): __ Yes __No
Brand/model: _____
Alarms set for: Severe Low: _____ Low: _____ High: _____
Predictive alarm: Low: _____ High: _____
Rate of change: Low: _____ High: _____
Threshold suspend setting: _____

Additional information for student with CGM

- Confirm CGM results with a blood glucose meter check before taking action on the sensor blood glucose level. If the student has signs or symptoms of hypoglycemia, check fingertip blood glucose level regardless of the CGM.
- Insulin injections should be given at least three inches away from the CGM insertion site.
- Do not disconnect from the CGM for sports activities.
- If the adhesive is peeling, reinforce it with approved medical tape.
- If the CGM becomes dislodged, return everything to the parents/guardians. Do not throw any part away.
- Refer to the manufacturer's instructions on how to use the student's device.

Student's Self-care CGM Skills	Independent?	
The student troubleshoots alarms and malfunctions.	☐ Yes	☐ No
The student knows what to do and is able to deal with a HIGH alarm.	☐ Yes	☐ No
The student knows what to do and is able to deal with a LOW alarm.	☐ Yes	☐ No
The student can calibrate the CGM.	☐ Yes	☐ No
The student knows what to do when the CGM indicates a rapid trending rise or fall in the blood glucose level.	☐ Yes	☐ No

The student should be escorted to the nurse if the CGM alarm goes off.

Other instructions for the school health team:
_____
_____
_____

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.

Notify parents/guardian if blood glucose is under ____mg/dL.

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

Additional treatment:

_____

_____

If the student is unable to eat or drink, is unconscious or unresponsive, or is having seizure activity or convulsions (jerking movement):

Position the student on his or her side to prevent choking.

Give glucagon: __1 mg __ ½ mg Other (dose) _____

Route: __Subcutaneous (SC) __Intramuscular (IM)

Site for glucagon injection: __Buttocks __Arm __Thigh

Other: _____

If student has an insulin pump, disconnect or suspend.

Call 911 (Emergency Medical Services) and the student's parents/guardians.

Contact the 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 correction dose orders).
Notify parents/guardians if blood glucose is over _____ mg/dL.
Allow unrestricted access to the bathroom.
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.

If the student has symptoms of a hyperglycemia emergency, call 911 (Emergency Medical Services) and contact the student's parents/guardians and health care provider. Symptoms of a hyperglycemia emergency include: 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.

Insulin therapy

Insulin delivery device: __ Syringe __Insulin pen __Insulin pump
Type of insulin therapy at school: __ Adjustable (basal-bolus) insulin __Fixed insulin therapy __No insulin

Insulin therapy ***Continued***

Adjustable (Basal-bolus) Insulin Therapy
Carbohydrate Coverage/Correction Dose:
Name of insulin:

_____

Carbohydrate Coverage:

Insulin-to-carbohydrate ratio:

Breakfast: 1 unit of insulin per _____ grams of carbohydrate
Lunch: 1 unit of insulin per _____ grams of carbohydrate
Snack: 1 unit of insulin per _____ grams of carbohydrate

Carbohydrate Dose Calculation Example
$\frac{\textit{Total Grams of Carbohydrate to Be Eaten}}{\textit{Insulin-to-Carbohydrate Ratio}} = ____\ \textit{Units of Insulin}$

Correction dose: Blood glucose correction factor (insulin sensitivity factor) = _____ Target blood glucose = _____ mg/dL

Correction Dose Calculation Example
$\frac{\textit{Current Blood Glucose} - \textit{Target Blood Glucose}}{\textit{Correction Factor}} = ____\ \textit{Units of Insulin}$

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
See the worksheet examples in Advanced Insulin Management: Using Insulin-to-Carb Ratios and Correction Factors for instructions on how to compute the insulin dose using a student's insulin-to-carb ratio and insulin correction factor.

When to give insulin:

Breakfast

__Carbohydrate coverage only

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

__Other: _____

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.

__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-breakfast daily

_____ Units of insulin given pre-lunch daily

_____ Units of insulin given pre-snack daily

Other: _____

Student's self-care insulin administration skills:

__Independently calculates and gives own injections.

__May calculate/give own injections with supervision.

__Requires school nurse or trained diabetes personnel to calculate dose and student can give own injection with supervision.

__Requires school nurse or trained diabetes personnel to calculate dose and give the injection.

Additional information for student with insulin pump

Brand/model of pump: _____

Type of insulin in pump: _____

Basal rates during school:

Time: _____ Basal rate: _____ Time: _____ Basal rate:_____

Time: _____ Basal rate: _____ Time: _____ Basal rate:_____

Time: _____ Basal rate: _____ Time: _____ Basal rate:_____

Other pump instructions:

_____

_____

Type of infusion set: _____

Appropriate infusion site(s): _____

__For blood glucose greater than _____ mg/dL that has not decreased within _____ hours after correction, consider pump failure or infusion site failure. Notify parents/guardians.

__For infusion site failure: Insert new infusion set and/or replace reservoir, or give insulin by syringe or pen.

__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, for _____ hours __No

Set a temporary basal rate: Yes, _____ % temporary basal for _____ hours __No

Suspend pump use: Yes, for _____ hours __No

Student's Self-care Pump Skills	Independent?	
Counts carbohydrates	☐ Yes	☐ No
Calculates correct amount of insulin for carbohydrates consumed	☐ Yes	☐ No
Administers correction bolus	☐ Yes	☐ No
Calculates and sets basal profiles	☐ Yes	☐ No
Calculates and sets temporary basal rate	☐ Yes	☐ No
Changes batteries	☐ Yes	☐ No
Disconnects pump	☐ Yes	☐ No
Reconnects pump to infusion set	☐ Yes	☐ No
Prepares reservoir, pod, and/or tubing	☐ Yes	☐ No
Inserts infusion set	☐ Yes	☐ No
Troubleshoots alarms and malfunctions	☐ 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: __ Parent/Guardian discretion

__ Student discretion

Student's self-care nutrition skills:

__ Independently counts carbohydrates

__ May count carbohydrates with supervision

__ 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 _ every 60 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.

Disaster Plan

To prepare for an unplanned disaster or emergency (72 hours), obtain emergency supply kit from parents/guardians.
__ Continue to follow orders contained in this DMMP.
__ Additional insulin orders as follows (e.g., dinner and nighttime):
_____
_____
__ Other: _____

Trained Diabetes Personnel

If the school chooses to designate nonmedical school staff as trained diabetes personnel for this student, they may administer the following medications:
___ Insulin
___ Glucagon
___ Other (please specify): _____

Signatures

This Diabetes Medical Management Plan (DMMP) 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) _____ DMMP. I also consent to the release of the information contained in this DMMP to all school staff members and other adults who have responsibility for this student and who may need to know this information to maintain my student's health and safety. I also give permission to the school nurse to contact my student's physician/health care provider.

Acknowledged and received by:

_____

Student's Parent/Guardian Date

_____

Student's Parent/Guardian Date

_____

Certified School Nurse Date

Individualized Health Care Plan (IHP)

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Student: _____

School: _____

Grade: _____ School Year: _____

IHP Completed by: _____

IHP Review Dates: _____

Nursing Assessment Review Dates: _____

Nursing Assessment Completed by: _____ Date: _____

Nursing Diagnosis	Sample Interventions and Activities	Date Implemented	Sample Outcome Indicator	Date Evaluated
Managing Potential Diabetes Emergencies (risk for unstable blood glucose)	Establish and document student's routine for maintaining blood glucose within goal range including while at school: • Where to check blood glucose: ☐ Classroom ☐ Health room ☐ Other: _____ • When to check blood glucose: ☐ Before breakfast ☐ Mid-morning ☐ Before lunch ☐ After lunch ☐ Before snack ☐ Before PE ☐ After PE ☐ 2 hours after correction dose ☐ Before dismissal ☐ As needed ☐ Other: _____ • Student's self-care skills: ☐ Independent ☐ Supervision ☐ Full assistance • Brand/model of BG meter: _____ • Brand/model of CGM: _____		**Blood glucose remains in goal range** Percentage of time 0% 25% 50% 75% 100%	

Nursing Diagnosis (continued)	Sample Interventions and Activities (continued)	Date Implemented (continued)	Sample Outcome Indicator (continued)	Date Evaluated (continued)
Supporting the Independent Student (effective therapeutic regimen management)	**Hypoglycemia Management** **STUDENT WILL:** • Check blood glucose when hypoglycemia suspected • Treat hypoglycemia (follow Emergency Care Plans for Hypoglycemia and Hyperglycemia) • Take action following hypoglycemia episode • Keep quick-acting glucose product to treat on spot • Type: _____ • Routinely monitor hypoglycemia trends r/t class schedule (e.g., time of PE, scheduled lunch, recess) and insulin dosing • Report to and consult with parents/guardians, school nurse, HCP, and school personnel as appropriate		**Monitors blood glucose and appropriately responds to results** Percentage of time 0% 25% 50% 75% 100%	
Supporting Positive Coping Skills (readiness for enhanced coping)	**Create Positive School Environment** • Ensure confidentiality • Discuss with parents/guardians and student preferences about how school can support student's coping skills • Collaborate with parents/guardians and school personnel to meet student's coping needs • Collaborate with school personnel to create accepting and understanding environment		**Demonstrates positive coping** Percentage of time 0% 25% 50% 75% 100%	

Emergency Care Plan (ECP)

Adapted from Helping the Student with Diabetes Succeed: A Guide for School Personnel (2016)

Student: _____

Grade/Teacher: _____

Date of Plan: _____

Emergency Contact Information

Parent/Guardian 1: _____

Email Address: _____Home Phone: _____

Work Phone: _____Mobile: _____

Parent/Guardian 2: _____

Email Address: _____Home Phone: _____

Work Phone: _____Mobile: _____

Health Care Provider: _____

Phone Number: _____

Certified School Nurse: _____

Contact Number(s): _____

Trained Diabetes Personnel (if designated): _____

Contact Number(s): _____

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

Causes of Hypoglycemia	Onset of Hypoglycemia
• 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	• Sudden—symptoms may progress rapidly

Hypoglycemia Symptoms	
Circle student's usual symptoms.	
Mild to Moderate	**Severe**
• Shaky or jittery • Sweaty • Hungry • Pale • Headache • Blurry vision • Sleepy • Dizzy • Lightheaded • Confused • Disoriented • Uncoordinated • Irritable or nervous • Argumentative • Combative • Changed personality • Changed behavior • Inability to concentrate • Weak • Lethargic • Other: _____	• 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 side of finger. 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**
☐ Provide quick-acting glucose (sugar) product equal to _____ grams of carbohydrates. Examples of 15 grams of carbohydrates are listed below: • 4 glucose tablets • 1 tube of glucose gel • 4 ounces of fruit juice (not low-calorie or reduced-sugar) • 4–6 ounces (1/2 can) of soda (not low-calorie or reduced-sugar) ☐ Wait 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/guardians. ☐ Once the student's blood glucose returns to normal, check the blood glucose level 1 hour later. Provide an additional source of carbohydrate (e.g., whole grain crackers, graham crackers, granola bar, yogurt, or fruit) if a meal or snack is not planned.	☐ 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 student's parents/guardians. ☐ Stay with student until Emergency Medical Services arrive. ☐ Notify student's health care provider.

Causes of Hyperglycemia	Onset of Hyperglycemia
• Too little insulin or other blood glucose-lowering medications • Insulin pump or infusion set malfunction • Food intake that has not been covered adequately by insulin • Decreased physical activity • Illness • Infection • Injury • Severe physical or emotional stress	• Over several hours or days

Hyperglycemia Symptoms	Hyperglycemia Emergency Symptoms Diabetic ketoacidosis (DKA), which is associated with hyperglycemia, ketosis, and dehydration
Circle student's usual signs and symptoms.	
• Increased thirst and/or dry mouth • Frequent or increased urination • Change in appetite and nausea • Blurry vision • Fatigue • Other: _____	• 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**
☐ Check the blood glucose level. ☐ Check urine or blood for ketones if blood glucose levels are greater than _____ mg/dL. ☐ Calculate the Insulin Correction Dose needed as specified in the DMMP. ☐ Administer supplemental insulin dose: _____. (If student uses a pump, see instructions below.) ☐ 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/guardians if blood glucose is greater than _____ mg/dL or if ketones are present. **For Students Using an Insulin Pump** • If student uses a pump, check to see if the pump is connected properly and functioning by giving a correction bolus through the pump and checking the blood glucose 1 hour later. • If moderate or large ketones are present, treat ketones with a subcutaneous injection of insulin, then change pump site or initiate pump back-up plan. • For infusion site failure: insert new infusion set and/or replace reservoir or pod, or give insulin by syringe or pen. • For suspected pump failure: suspend or remove pump and give insulin by syringe or pen.	☐ Call parents/guardians, student's health care provider, and 911 (Emergency Medical Services) right away. ☐ Stay with student until Emergency Medical Services arrive.

Individualized Transportation Plan (ITP)

Student: _____ Date of Birth: _____
Street Address: _____
School District of Residence: _____
Classroom Location: _____

Section A: Diabetes Specific Considerations

___ Provide copies of the student's Emergency Care Plans for Hypoglycemia and Hyperglycemia to the Bus Driver.
___ Maintain copies in a known yet secure place on the bus. Leave plans readily available for substitute drivers.
___ Determine where student's supplies will be kept on the bus to treat hypoglycemia and hyperglycemia.
___ Allow student with diabetes to eat snacks and drink beverages on the bus. Work with the school nurse to determine appropriate snacks based the needs of other students with food allergies.

Section B: Planning the Least Restrictive Transportation Environment

Can this student be transported by their home school district with their peers?
___ Yes, with no modifications or support
___ Yes, with modifications specified below
___ No, needs special transportation with modification noted below

Change of Route
___ To meet the student's medical/behavioral needs
___ To lessen exposure to traffic
___ Length of time on bus
___ Other: Specify: _____

Environmental conditions
___ Weather factors: Specify _____
___ Street/sidewalk conditions: Specify _____

Change of Pick Up/Drop Off Location
___ Pull in drive to pick up/drop off
___ Pick up/ Drop off on residence side
___ Pick up/ Drop off at school entrance that allows for less congestion or more supervision
___ Other: Specify _____

Required Seating
___ Front of bus
___ Assigned seat
___ Seating with limited access to other riders
___ Away from door or rear window
___ Window Seat
___ Seated with feet on floor or low floor bus
___ Seated out of emergency exits
___ Other: Specify _____

Are assistance/special accommodations necessary in the following areas?

Discharge of Student- Can this student be discharged from the bus without an adult waiting to receive him/her?
___ Yes
___ No

Supervision/Assistance When Taking Transportation
___ To board bus/on steps
___ To remain safe in "danger zone" – from all sides of the bus
___ To cross street or safely navigate into home/school
___ To stay seated upright on the seat in the compartment
___ To maintain appropriate/safe behavior
___ To avoid contact with emergency exits
___ To avoid putting anything out of the windows
___ To navigate emergency exit
___ To leave bus in the event of an emergency (specify procedure above)
___ Other: Specify _____

Communication
___ Verbal
___ ESL
___ Sign Language
___ Communication Board
___ Picture System
___ Gestures
___ Other: Specify _____

Equipment
___ Auditory equipment
___ Stepstool access
___ Safety vest/harness (can be used on traditional bus seat without lap belt or reinforced seat with lap belt)
___ Waist size with outer clothing
___ Waist size without outer clothing
Person(s) responsible for putting vest on/off _____
Person(s) responsible for connecting vest to mount _____
Person(s) responsible for installing mount _____
___ Child safety seat ____ weight ____ height
___ Wheelchair

Person(s) responsible for attaching chair _____
___ Safety items on the bus:
___ Transport of auxiliary equipment according to plans of care.

Specify equipment: _____
___ Child safe belt cutter (needed for students in occupant restraints)
___ Non-latex gloves
___ Evacuation blanket
___ Basic First Aid kit and emergency numbers
___ Belt extender
___ Body fluid clean-up kit
___ Other: Specify _____

Procedural Safeguards for Medical/Behavioral Concerns
___ Emergency Care Plan (attached) with training
___ Behavioral intervention plan (attached) with training
___ Crisis management plan that can be implemented from the bus
___ Do Not Resuscitate (DNR) order
___ Oxygen or ventilator: Specify _____
___ Allergy precautions: Specify _____
___ Asthma or other respiratory conditions: Specify _____
___ Cardiac problems: Specify _____
___ Diabetes: Specify _____
___ Feeding tube or significant swallowing problems: Specify _____
___ Fragile Bones or other orthopedic precautions: Specify _____
___ Medication side effects: Specify _____
___ Seizure precautions: Specify _____
___ Shunt precautions: Specify _____

Section B: Training and Support

Does the student need a test ride? __ Yes __ No
If yes, date to be completed _____

Summary of Transportation Plan (include only the accommodations that are required to transport)
Date provided to Transportation Director/bus company _____

Next Steps Required
Training required for staff, drivers, parents, caregivers, and/or students
Type of training needed _____
Participants _____
Date of Training _____

Notification to Parent/Guardian:
If there are any changes in your student's medical or behavioral status which you believe may merit changes in staffing, precautions to be taken, interventions, restraint, or any other procedure discussed above, contact the building administrator.
Parent/Guardian Name/Phone Number _____
_____

A change in residency (a new address) required a three (3) business day notification to school district supervisor to reevaluate this plan.

_____ _____
Parent/Guardian Signature Date

Individual transportation plan committee participants:

_____ _____
Transportation Personnel/Title Date

_____ _____
Parent/Guardian Date

_____ _____
School Personnel/Title Date

_____ _____
School Personnel/Title Date

To signify that this plan has been reviewed and still remains current as documented, initial and date:
_____/_____ _____/_____ _____/_____ _____/_____
Initials/Date Initials/Date Initials/Date Initials/Date

Section 504 Service Agreement (504 Plan)

Adapted from the American Diabetes Association, Sample Section 504 Plan

This sample Chapter 15 Service Agreement (Section 504 Plan) lists a broad range of services and accommodations that might be needed by a student with diabetes in school. The plan should be individualized to meet the needs, abilities and medical condition of each student and should include only those items in the sample that are relevant to that student. Some student will need additional services and accommodations that have not been included in this sample plan, i.e., for other identified disabilities.

Date: _____ School: _____
Student: _____
Grade: _____ School Year: _____
Homeroom Teacher: _____ Bus Number: __

__ Medical
__ OT/PT
__ Social/Emotional/Behavioral
__ Homebound Instruction

__ Initial Agreement
__ Modified Agreement

Provision of Diabetes Care

Either a school nurse, supplemental staff nurse or trained diabetes personnel (if designated) will be available at the site where the student is at all times during school hours, extracurricular activities and on school sponsored field trips to provide diabetes care in accordance with this Plan and as directed in the DMMP.

Any staff members who have not been designated as trained diabetes personnel and who has primary care for the student shall receive Level 2 training.

Any bus driver who transports the student must be informed of symptoms of high or low blood glucose levels, be provided a copy of the student's ECP and be prepared to act.

Trained Diabetes Personnel

The following school staff members have been designated as trained diabetes personnel for _____ and will have completed Level 3 training by (date) _____:

_____

_____

They may provide the following diabetes care tasks:

_____

_____

Student's Level of Self-Care and Location of Supplies and Equipment

As stated in the attached DMMP and as approved by the school nurse:

The student is able to perform the following diabetes care tasks without assistance or supervision:

_____

_____

_____

and will be permitted to provide this self-care at any time and in any location at the school, on field trips, at sites of extracurricular activities, and on school buses. The student will notify the school nurse of blood glucose results and dosage/times of medication administration: _____

The student needs assistance or supervision with the following diabetes health care tasks:

_____

_____

_____

The student needs a school nurse, supplemental staff nurse or trained diabetes personnel (if designated) to perform the following diabetes care tasks:

_____

_____

_____

The student will be permitted to carry the following diabetes supplies and equipment with him/her at all times and in all locations:

_____

_____

_____

Diabetes supplies and equipment that are not kept on the student and additional supplies and equipment will be kept at:

_____

_____

The parent/guardian is responsible for providing diabetes supplies and food to meet the needs of the student as prescribed in the DMMP.

Snacks and Meals

The school nurse, supplemental staff nurse or trained diabetes personnel (if designated) and food service coordinator will work with the student and his/her parents/guardians to coordinate a meal and snack schedule in accordance with the attached DDMP that will coincide with the schedule of classmates to the closest extent possible. The student shall eat lunch at the same time each day, or earlier if experiencing hypoglycemia. The student shall have enough time to finish lunch. A snack and quick-acting source of glucose must always be immediately available to the student.

The attached DMMP sets out the regular time(s) for snacks, what constitutes a snack, and when the student should have additional snacks. The student will be permitted to eat a snack no matter where the student is.

The parent/guardian will supply snacks needed in addition to or instead of any snacks supplied to all students.

The parent/guardian will provide carbohydrate content information for snacks and meals brought from home.

The school nurse, supplemental staff nurse or trained diabetes personnel (if designated) and food services coordinator will ensure that the student takes snacks and meals at the specified time(s) each day.

Adjustments to snack and meal times will be permitted in response to changes in schedule upon request of parent/guardian.

Exercise and Physical Activity
The student shall be permitted to participate fully in physical education classes and team sports except as set out in the student's DMMP.

Physical education instructors and sports coaches must have a copy of the emergency action plan and be able to recognize and assist with the treatment of low blood glucose levels.

Responsible school staff members will make sure that the student's blood glucose meter, a quick-acting source of glucose, and water is always available at the site of physical education class and team sports practices and games.

Water and Bathroom Access
The student shall be permitted to have immediate access to water by keeping a water bottle in the student's possession and at the student's desk, and by permitting the student to use the drinking fountain without restriction.

The student shall be permitted to use the bathroom without restriction.

Checking Blood Glucose Levels, Insulin and Medication Administration, and Treating High or Low Blood Glucose Levels
The student's level of self-care is set out in section 3 above including which tasks the student can do by himself/herself and which must be done with the assistance of, or wholly by, either a school nurse, supplemental staff nurse or trained diabetes personnel (if designated).

Blood glucose monitoring will be done at the times designated in the student's DMMP, whenever the student feels her/his blood glucose level may be high or low, or when symptoms of high or low blood glucose levels are observed.

Insulin and/or other diabetes medication will be administered at the times and through the means (e.g., syringe, pen or pump) designated in the student's DMMP for both scheduled doses and doses needed to correct for high blood glucose levels.

The student shall be provided with privacy for blood glucose monitoring and insulin administration if the student desires.

The student's usual symptoms of high and low blood glucose levels and how to respond to these levels are set out in the attached DMMP.

When the student asks for assistance or any staff member believes the student is showing signs of high or low blood glucose levels, the staff member will immediately seek assistance from the school nurse, supplemental staff nurse or trained diabetes personnel (if designated) while making sure an adult stays with the student at all times. Never send a student with actual -- or suspected -- high or low blood glucose levels anywhere alone.

Any staff member who finds the student unconscious will immediately contact the school office. The office will immediately do the following in the order listed:

Contact the school nurse, supplemental staff nurse or trained diabetes personnel (if designated) who will confirm the blood glucose level with a monitor and immediately administer glucagon;

Call 911 (office staff will do this without waiting for the school nurse, supplemental staff nurse or trained diabetes personnel, if designated, to administer glucagon); and

Contact the student's parent/guardian and physician at the emergency numbers provided below.

School staff including physical education instructors and coaches will provide a safe location for the storage of the student's insulin pump if the student chooses not to wear it during physical activity or any other activity.

Field Trips and Extracurricular Activities
The student will be permitted to participate in all school-sponsored field trips and extracurricular activities (such as sports, clubs, and enrichment programs) to the maximum extent appropriate to the student's needs, and with all of the accommodations and modifications, including necessary supervision by identified school

personnel, set out in this Plan. The student's parent/guardian, may be requested, but will not be required to accompany the student on field trips or any other school activity.

The school nurse, supplemental staff nurse or trained diabetes personnel (if designated) will be available on site at all school-sponsored field trips and extracurricular activities, will provide all usual aspects of diabetes care (including, but not limited to, blood glucose monitoring, responding to hyperglycemia and hypoglycemia, providing snacks and access to water and the bathroom, and administering insulin and glucagon) as designated, and will make sure that the student's diabetes supplies travel with the student.

Tests and Classroom Work

If the student is affected by high or low blood glucose levels at the time of regular testing, the student will be permitted to take the test at another time without penalty.

If the student needs to take breaks to use the water fountain or bathroom, check blood glucose, or to treat hypoglycemia or hyperglycemia during a test or other activity, the student will be given extra time to finish the test or other activity without penalty.

The student shall be given assistance to help him/her make up any classroom instruction missed due to diabetes care without penalty.

The student shall not be penalized for absences required for medical appointments and/or for illness. The parent will provide documentation from the treating health care professional if otherwise required by school policy.

Communication

The school nurse, supplemental staff nurse, trained diabetes personnel (if designated), and other staff will keep the student's diabetes confidential, except to the extent that the student decides to openly communicate about it with others.

Encouragement is essential. The student be treated in a way that encourages the student to eat snacks on time, and to progress toward self-care with his/her diabetes management skills.

The teacher, school nurse, supplemental staff nurse or trained diabetes personnel (if designated) will provide reasonable notice to parent/guardian when there will be a change in planned activities such as exercise, playground time, field trips, parties, or lunch schedule, so that the lunch, snack plan, and insulin dosage can be adjusted accordingly.

Each substitute teacher and substitute school nurse will be provided with written instructions regarding the student's diabetes care and a list of all school nurses, supplemental staff nurses and trained diabetes personnel (if designated) at the school.

Emergency Evacuation and Shelter-in-Place
In the event of emergency evacuation or shelter-in-place situation, the student's 504 Plan and DMMP will remain in full force and effect.

The school nurse, supplemental staff nurse or trained diabetes personnel (if designated) will provide diabetes care to the student as outlined by this Plan and the student's DMMP, will be responsible for transporting the student's diabetes supplies, and equipment, will attempt to establish contact with the student's parents/guardians and provide updates, and will and receive information from parents/guardians regarding the student's diabetes care.

Parental Notification
Notify Parents/Guardians Immediately in the Following Situations:

Symptoms of severe low blood sugar such as continuous crying, extreme tiredness, seizure, or loss of consciousness.

The student's blood glucose test results are below _____ or are below _____15 minutes after consuming juice or glucose tablets.

Symptoms of severe high blood sugar such as frequent urination, presence of ketones, vomiting or blood glucose level above _____.

The student refuses to eat or take insulin injection or bolus.

Any injury.

Insulin pump malfunctions cannot be remedied.

Other: _____

Emergency Contact Instructions

Call parent/guardian at numbers listed below. If unable to reach parent/guardian, call the other emergency contacts or student's health care providers listed below.

Emergency Contacts (Parent/Guardian)

_____

Parent's/Guardian's Name Home Phone/Work Phone/Cell Phone

_____

Parent's/Guardian's Name Home Phone/Work Phone/Cell Phone

Emergency Contacts (Other)

_____

Name Home Phone/Work Phone/Cell Phone

_____

Name Home Phone/Work Phone/Cell Phone

Student's Health Care Provider(s)

_____

Name Phone Number

_____

Name Phone Number

This Plan shall be reviewed and amended at the beginning of each school year or more often if necessary.

Approved and received:

_____

Parent/Guardian Date

_____

School Administrator and Title Date

_____

School Nurse Date

Section 4:School Responsibilities Under Federal and State Law

The federal laws described in this section apply to a school's responsibility to help students manage diabetes, including confidentiality requirements. A particular student with diabetes could be covered under only one law or more than one law. In addition, there are state laws and school district policies that govern and impact the provision of diabetes care services in schools.

How to Use the Laws Section
Use the section on Federal and State laws for planning and implementing effective diabetes management and for preparing the student's health and education plan(s).

Determine whether applicable local laws impact the rights of the student with diabetes.

Copy and distribute the section on laws to appropriate school personnel.

Review the section on laws when training school personnel on how to comply with the Federal and State laws pertaining to students with diabetes.

Federal Laws

Information provided by the National Diabetes Education Program (NDEP), a joint program of NIH and CDC.

Section 504 of the Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act (ADA)
Section 504 prohibits recipients of Federal financial assistance from discriminating against people on the basis of disability. Title II of the ADA prohibits discrimination on the basis of disability by public entities, regardless of whether the public entities receive Federal financial assistance. Public school districts that receive Federal financial assistance are covered by both Title II and Section 504. As a rule, because Title II does not provide less protection than Section 504, violations of Section 504 by public entities also constitute violations of Title II. To the extent that Title II provides greater protection, schools must also comply with Title II and provide those additional protections. For schools, Section 504 is enforced by the

Office for Civil Rights (OCR) in the U.S. Department of Education (ED). OCR shares Title II enforcement responsibilities with the U.S. Department of Justice (DOJ).

Section 504 outlines a process for schools to use in determining whether a student has a disability and in determining what services a student with a disability needs. This evaluation process must be tailored individually, because each student is different and his or her needs will vary. Diabetes will virtually always be found to be a disability under Section 504 and the ADA, because it substantially limits the functioning of the endocrine system.

Under Section 504 and the ADA, students with disabilities must be given an equal opportunity to participate in academic, nonacademic, and extracurricular activities. This includes, generally, an equal opportunity to attend the school the student would otherwise attend (for example, the local zoned school or school of choice).

In addition, as outlined in ED's Section 504 regulations, in order to ensure equal opportunity, school districts must identify all students with disabilities and provide them with a free appropriate public education (FAPE). Under Section 504, FAPE is the provision of regular or special education and related aids and services designed to meet the individual educational needs of students with disabilities as adequately as the needs of students who do not have disabilities are met. A student does not have to receive special education services, however, in order to receive related aids and services under Section 504.

Section 504 and Title II require schools to consider whether they can reasonably modify policies, practices, or procedures to ensure that a student has an equal opportunity to participate in and benefit from a school's services and programs, including extracurricular activities.

Administering insulin or glucagon, providing assistance in checking blood glucose levels, and allowing the student to eat snacks in school are a few examples of related aids and services or reasonable modifications that schools may have to provide for a particular student with diabetes. State and local laws, including those concerning who can administer medications, cannot interfere with the rights of students with disabilities guaranteed by Section 504 and the ADA. The most common practice is to include these related aids and services as well as any needed special education services in a written document, sometimes called a "Section 504 Plan."

Under Section 504, private schools that receive Federal financial assistance may not exclude an individual student with a disability if the school can, with minor adjustments, provide an appropriate education to that student. Private, nonreligious schools, regardless of Federal funding, are also covered by Title III of the ADA, which is enforced by DOJ and prohibits disability discrimination by certain private entities.

Individuals with Disabilities Education Act (IDEA)
IDEA provides Federal funds to assist State educational agencies and, through them, local educational agencies in making special education and related services available to eligible children with disabilities. IDEA is administered by the Office of Special Education Programs (OSEP) in the Office of Special Education and Rehabilitative Services (OSERS) in the U.S. Department of Education.

A student with a disability must meet the criteria of one or more of 13 disability categories and need special education and related services. The IDEA category of "other health impairment" includes diabetes as one of the health conditions listed. To qualify under IDEA, the student's diabetes also must adversely affect educational performance to the point that the student requires special education and related services, as defined by State law. An example of a student with diabetes who may qualify under IDEA is a student who may have difficulty paying attention or concentrating in the learning environment because of recurring high or low blood glucose levels that adversely affect the student's educational performance.

IDEA requires school districts to find and identify children with disabilities and to provide them a free appropriate public education (FAPE). Under IDEA, FAPE means special education and related services that meet State standards and are provided in conformity with an individualized education program (IEP). The IDEA regulations specify how school personnel and parents, working together, develop and implement an IEP.

Each student's IEP must include the supplementary aids and services to be provided for or on behalf of the student and a statement of the program modifications or supports for school personnel that will be provided for the student to make progress and to be involved in the general education curriculum. Administering insulin or glucagon, providing assistance in checking blood glucose levels, and allowing the student to eat snacks in school are a few examples of related services, supplementary aids and services, or program modifications or supports

that schools could provide for a student with diabetes who is eligible under IDEA.

Generally, if a student with diabetes needs only a related service and not special education services as defined by State law, that student is not a student with a disability under IDEA and therefore is not eligible for any services under IDEA. Such a student will virtually always have a disability under Section 504 and the ADA, however, and would be eligible for services and/or modifications under Section 504 and the ADA. In general and consistent with the Family Educational Rights and Privacy Act (FERPA), IDEA's confidentiality provisions require prior written consent for disclosures of personally identifiable information contained in education records, unless a specific exception applies.

Family Educational Rights and Privacy Act (FERPA)

FERPA generally prohibits schools from disclosing personally identifiable information in a student's education record, unless the school obtains the written consent of the student's parents/guardians or the eligible student (i.e., a student who is 18 years old or older or who attends an institution of postsecondary education). However, there are a number of exceptions to this requirement of prior written consent, several of which are discussed in more detail below. One such exception permits schools to disclose personally identifiable information in a student's education record without obtaining prior written consent to school officials, including teachers, who have been determined to have legitimate educational interests in the information, including the educational interests of the student. Schools that do this must include in their annual notification of FERPA rights to the parents/guardians and eligible students the criteria for determining who constitutes a school official and what constitutes a legitimate educational interest. If the school determines that particular school officials have a legitimate educational interest in information about a student's diabetes, the school may disclose such information to said school officials without obtaining the prior written consent of parents/guardians or, if applicable, the eligible student. This exception for school officials with a legitimate educational interest also applies to a contractor, consultant, volunteer, or other party to whom a school has outsourced institutional services or functions, provided that the outside party:

- Performs an institutional service or function for which the school would otherwise use existing school employees;
- Is under the direct control of the school with respect to the use and maintenance of education records; and

- Is subject to the requirements in FERPA governing the use and redisclosure of personally identifiable information from education records.

Another exception to the requirement of prior written consent permits schools to disclose personally identifiable information from an education record to appropriate parties, including the parents/guardians of an eligible student, in connection with an emergency, if knowledge of the information is necessary to protect the health or safety of the student or other individuals. Under this exception, a school may take into account the totality of the circumstances pertaining to a threat to the health or safety of a student or other individuals. If a school determines that there is an articulable and significant threat to the health or safety of a student or other individuals, it may disclose information from education records to any person whose knowledge of the information is necessary to protect the health or safety of the student or other individuals. If, based on the information available at the time of the determination, there is a rational basis for the determination, the United States Department of Education will not substitute its judgment for that of the school in evaluating the circumstances and making its determination.

Another exception to the requirement of prior written consent permits schools to disclose personally identifiable information from an education record to ED or to the DOJ for the enforcement of Federal legal requirements that relate to federally supported education programs. For example, this exception would permit a school to disclose, without obtaining prior written consent, education records to DOJ so that DOJ can conduct an investigation of the school's compliance with the ADA.

In addition, under FERPA, the parents/guardians or eligible students must be given the opportunity to inspect and review the student's education records. A school must comply with a request for access to the student's education records within a reasonable period of time, but not more than 45 days after it has received the request. FERPA also permits the parents/guardians or eligible students to request that a school correct education records that they believe to be inaccurate or misleading, or in violation of the student's right of privacy. If the school decides not to amend the education records, the school must notify the parents/guardians or eligible students of its decision and the parents/ guardians or eligible students then have the right to a formal hearing.

After the hearing, if the school still decides not to amend the education records, the parents/guardians or eligible students have the right to place a statement with the education records setting forth their views about the contested information or stating why they disagree with the school's decision not to amend the records, or both. Similar requirements also apply to education records collected, maintained, or used under Part B of the IDEA.

How Can I Get Copies of the Federal Laws?
The statutes are found in the United States Code (U.S.C.). The regulations implementing the statutes are found in the Code of Federal Regulations (CFR).
Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. 794, implementing regulations at 34 CFR Part 104.

Title II of the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. 12134 et seq., implementing regulations at 28 CFR Part 35.

To obtain copies of the Section 504 and Title II regulations, you also may contact the Customer Service Team of the Office for Civil Rights, U.S. Department of Education, toll-free at 1-800-421-3481. For TTY, call 1-800-877-8339.

Individuals with Disabilities Education Act, 20 U.S.C. 1400 et seq., implementing regulations at 34 CFR Part 300.

For copies of the IDEA regulations, you also may contact ED Pubs at 1-877-433-7827.

Family Educational Rights and Privacy Act (FERPA), 20 U.S.C.1232g, implementing regulations at 34 CFR Part 99.

How Can I Get More Information?
The Office for Civil Rights (OCR) and the Office of Special Education Programs (OSEP) in the U.S. Department of Education can answer questions and provide technical assistance.

For more information from OCR, contact OCR's Customer Service Team toll-free at 1-800-421-3481. For TTY, call 1-877-521-2172. Information is also available on the OCR website. You may also contact one of OCR's 12 Enforcement Offices around the country. Contact information is available from the OCR Customer Service Team and from the OCR website.

For more information from OSEP, call 202-245-7459. For TTY, call 202-205-5637. Information is also available on OSEP's website.

More information about FERPA is available at ED's Family Policy Compliance Office website. School officials may also direct questions to FERPA@ed.gov.

The Department of Justice (DOJ) can answer questions and provide technical assistance about the Americans with Disabilities Act. For more information, call 1-800-514-0301. For TTY, call 1-800-514-0383. Information is also available on DOJ's ADA website.

State Laws and Regulations

Public School Code of 1949 (PSC)
The PSC requires that every child of school age be provided with school nurse services as part of the school health program. Teachers are mandated to report to the school nurse unusual behavior or changes in physical appearance, attendance habits, or scholastic achievement that may indicate impairment of a child's health. Based upon a teacher's report or on her own initiative, the nurse may advise the parent or guardian of the apparent need for a special medical or dental examination. The parent or guardian must report the results of the examination to the school nurse or school physician. Nurses may similarly arrange special examinations for pupils who deviate substantially from normal growth and development.

While state law and regulations mandate that each school district provide school nurse services, the actual day to day activities of school nurses are assigned by the school districts and the Pennsylvania Department of Health (DOH) prescribes the technical content of the school health services program. The DOH Division of School Health provides the school districts with health services procedural manuals and sets minimum standards for health screenings. Each of the six state health district offices employs a school health consultant to assist schools, parents, and the community at large regarding school health services and programs.

The current nurse to student ratio of 1:1,500 is set forth in Section 1402 of the PSC, which was added by the Act of July 15, 1957. Also, pursuant to the school code, Department of Health Regulations found at 28 PA Code §23.53 clarify that "The school administrator, in determining the number of pupils to be served by a school nurse, shall consider the number of schools, distance between schools, travel

difficulties and special health needs of the area." Therefore, while there are no state mandated ratios for nurses to special needs students – each school district is responsible for meeting the needs of special populations.

Act 86 of 2016 amended the Public School Code (Article XIV; 24 P.S. §§ 14-1401 – 14-1424) with a number of provisions related to diabetes education and care in Pennsylvania schools. More specifically, Act 86 permits school nurses, in consultation with their chief school administrator or a designee, to identify at least one school employee ("Trained diabetes personnel") in each school building attended by a student with diabetes to be designated in a student's service agreement or Individualized Education Program (IEP) to administer diabetes medications, use diabetes monitoring equipment, and provide other diabetes care.

The trained diabetes personnel should not be the school nurse, and does not need to be a licensed health care practitioner. The trained diabetes personnel may decline the responsibility and related directives. A trained diabetes personnel is required to complete annual education in specifically-identified areas through educational modules.

Once a trained diabetes personnel has completed the education requirements, the employee may perform diabetes care and treatment for students. For trained diabetes personnel who is not a licensed health care practitioner to administer diabetes medications via injection or infusion, the following must occur:

1. The trained diabetes personnel must complete annual education by a licensed health care practitioner with expertise in the treatment and care of diabetes;
2. The school entity must receive written authorization from ***both*** the student's health care practitioner and parent or guardian that the trained diabetes personnel, who is not a licensed health care practitioner, may administer specified medications.

Students may also be permitted to possess and use their diabetes medication and monitoring equipment with written authorization from the student's health care practitioner, parents/guardians and written acknowledgment from the school nurse that the student has demonstrated that they are capable of performing these tasks. This privilege may be revoked or restricted due to noncompliance. If revoked or restricted, the school shall ensure that the medication and monitoring equipment is readily accessible to the student.

Nonpublic schools may also comply with these provisions allowing school employees to be designated to provide certain diabetes care tasks and students to possess and self-administer their diabetes medications and monitoring equipment. This provision does not alleviate school districts from providing school nurse services when requested by the nonpublic school. It is recommended that a memorandum of understanding be developed between the two school entities.

Nurse Practice Act and Medical Practice Act

The school nurse and any support personnel who have nursing licenses (e.g., RN or LPN) must meet the standards and regulations of the Pennsylvania Nurse Practice Act, which is the responsibility of the Department of State, Pennsylvania State Board of Nursing. Health workers who are not certified school nurses, including RNs, licensed practical nurses (LPNs) and unlicensed assistive personnel (UAP) must work under the supervision of the school nurse and cannot be assigned a caseload.

A licensed nurse must have an order for medications. Without an order, licensed nurses administering medication are diagnosing and prescribing treatment, which is outside of nursing practice parameters and is within the practice of medicine defined by the Medical Practice Act of 1985. As part of their student services plan schools and school districts must develop policies and procedures for emergency care, and administration of medication and treatment in compliance with the Controlled Substance Drug, Device and Cosmetic Act and guidelines issued by the Department of Health. Parents/guardians should inquire about the policies and practices that are implemented in their schools.

Bloodborne Pathogen Standard Act

The Pennsylvania Department of Health developed *Guidelines on Bloodborne Pathogens for the Public Sector* in response to Act 96 of 2001, which is known as the Bloodborne Pathogen Standard Act. The guidelines apply to all employers and employees in the public sector, including school workers, who are not covered by federal standards of the Occupational Safety and Health Administration (OSHA). Guidelines address all actual or potential occupational exposures to blood or other infectious materials in a public sector healthcare facility, home healthcare organization or other facility providing health care-related services.

Section 5: Glossary of Diabetes Terms

Glossary adapted from the National Diabetes Education Program (NDEP), a joint program of NIH and CDC.

A

Acanthosis Nigricans. A condition in which the skin around the neck, armpits, or groin looks dark, thick, and velvety. Acanthosis Nigricans is a physical sign of insulin resistance.

Americans with Disabilities Act (ADA). A Federal law enacted in 1990 to protect people with disabilities from discrimination. Under this law, diabetes will virtually always be considered a disability.

Autoimmune disease. A disorder in which the immune system mistakenly attacks and destroys body tissue that it believes to be foreign. In type 1 diabetes, an autoimmune disease, the immune system attacks and destroys the insulin-producing beta cells.

B

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 (sugar) in the blood.

Blood glucose meter. A small, portable machine that measures how much glucose is in the blood. After pricking the side of the fingertip with a lancet, a person places a drop of blood on a special test strip that is inserted in the machine. The meter (or monitor) then gives the blood glucose level as a number on the meter's digital display.

Blood glucose monitoring. Checking the amount of glucose in the blood. Also called self-monitoring of blood glucose.

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 above target.

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

C

Carbohydrates or carbs. One of the three 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, and cereals; pasta, rice, and grains; vegetables; milk and yogurt; fruit, juice, and sweetened sodas; and table sugar, honey, syrup, molasses, cakes, pies, and cookies.

Carbohydrate (carb) counting. A popular meal planning approach for people 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.

Changing carb intake meal plan. A method of meal planning used by people with diabetes who use multiple daily insulin injections or an insulin pump. Individuals who use this method do not have to eat the same amount of carbs at every meal or snack but they must adjust insulin doses (with rapid- or short-acting insulin) to cover the amount of carbs consumed. This type of meal plan in conjunction with a basal/bolus insulin plan.

Complications of diabetes. Serious health problems that may occur when a person has diabetes. Short-term complications include hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose). Long-term complications, which may develop when a person has had diabetes for a long time, may include heart disease, stroke,

blindness, kidney failure, gum disease, nerve disease, and amputation of a foot or leg.

Consistent carb intake meal plan. A method of meal planning in which students aim for a set amount of carbs at each meal and snack and do not adjust their mealtime insulin for the amount of carb intake. These students follow a traditional or fixed insulin dose plan.

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 blood glucose levels (the blood glucose found in the fluid between cells) at regular intervals.

Correction factor. The amount of insulin needed to lower blood glucose to the target level (also called insulin correction factor or insulin sensitivity factor).

D

Diabetes. A condition in which the body cannot produce insulin and/or use it properly.

Diabetes educator. A health care practitioner who has expertise in helping people manage their diabetes.

Diabetes Medical Management Plan (DMMP). Describes the medical orders or diabetes care plan developed by the student's personal diabetes health care team and agreed to by the parents/guardians.

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.

E

Education Plan. A plan that addresses the student's needs for services to manage their diabetes safely and effectively in school, as required under Section 504 of the Rehabilitation Act or the Individuals

with Disabilities Act (IDEA). These include the 504 Service Agreement, other education plan, or individualized education program (IEP).

Emergency Care Plans (ECP). Plans that provide school personnel with essential information on how to recognize and respond to symptoms of hypoglycemia and hyperglycemia, whom to contact for help, and what to do in an emergency.

F

Family Educational Rights and Privacy Act (FERPA). A Federal law that, with certain exceptions, prohibits schools from disclosing personally identifiable information in a student's education record, unless the school obtains prior written consent from the student's parents/guardians or from the eligible student (i.e., a student who is 18 years or older or who attends an institution of postsecondary education).

G

Gestational diabetes. A form of diabetes that can develop during pregnancy and is caused by the hormones of pregnancy.

Glucagon. A hormone that raises the level of glucose in the blood. Glucagon, given by injection, is used to treat severe hypoglycemia.

Glucose. A simple sugar found in the foods we eat that is needed to fuel the body. The body carries glucose through the blood to the cells where it is used for energy. In people with diabetes, the cells cannot change the glucose to energy due to lack of insulin or because the insulin the body produces does not work properly.

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

H

Health care plans. Plans that outline each student's individual diabetes management needs. These include the Diabetes Medical Management Plan prepared by the student's personal diabetes health care team and the Individualized Health Care Plan and Emergency Care Plan prepared by the school nurse.

Health care practitioner. As defined in the Pennsylvania Health Care Facilities Act (35 P.S. Section 448.103). An individual who is authorized to practice some component of the healing arts by a license, permit, certificate or registration issued by a Commonwealth licensing agency or board.

Healthy, Hunger-Free Kids Act. A Federal law passed in 2010 focused on improving child nutrition. The law authorizes funding and sets policy for the U.S. Department of Agriculture's core child nutrition programs: the National School Lunch Program, the School Breakfast Program, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), the Summer Food Service Program, and the Child and Adult Care Food Program.

Hormone. A chemical produced by an organ that travels in the blood to affect other organs. Insulin is an example of a hormone.

Hyperglycemia. High blood glucose. Occurs when the level of glucose in the blood is higher than the target range.

Hypoglycemia. Low blood glucose. Occurs when the level of glucose in the blood drops below the target range.

Hypoglycemia unawareness. When people with diabetes do not feel or recognize early physical warning signs of hypoglycemia.

I

Individualized Education Program (IEP). A program designed for a student with a disability covered by the Individuals with Disabilities Education Act (IDEA) and 22 PA Code Ch. 14 (relating to special education services and programs). Each student's IEP must include the supplementary aids and services to be provided for, or on behalf of,

the student, as well as a statement of the program modifications or supports for school personnel that will be provided for the student to make progress and to be involved in the general education curriculum.

Individualized Health Care Plan (IHP). A written plan developed by the school nurse in collaboration with the student's personal diabetes health care team and the family to implement the student's Diabetes Medical Management Plan. Sometimes called the nursing care plan.

Individuals with Disabilities Education Act (IDEA). A Federal law that provides funds to States to support special education and related services for children with disabilities, administered by the Office of Special Education Programs in the U.S. Department of Education. IDEA also contains specific confidentiality protections for student records.

Infusion set. A device that connects the insulin pump device to your body. A needle is housed inside a cannula, a tiny plastic tube that is placed under the skin in the subcutaneous fat. The needle is necessary to puncture the skin to insert the set. After insertion, the needle is removed and the cannula remains in place.

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 manufactured insulin are used in combination to treat people with diabetes.

Insulin injections. Using a needle and a syringe or an insulin pen to put insulin into the body.

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. Additional doses are given when needed to cover food intake and to lower high blood glucose levels. The insulin is delivered through a system of plastic tubing (infusion set) or from a pod worn on the skin and controlled by a hand held remote device.

Insulin resistance. A condition in which the cells in the body do not respond normally to the action of insulin. Many people with type 2 diabetes have insulin resistance.

Insulin-to-carb ratio. Used to determine the number of units of insulin needed to cover the number of grams of carbs in the food a person with diabetes plans to eat.

K

Ketoacidosis. See Diabetic ketoacidosis.

Ketones (ketone bodies). Chemicals made by the body when there is not enough insulin in the blood and the body must break down fat for energy. Ketones are usually associated with high blood glucose, but also may occur when a student is ill and blood glucose levels fall below the student's target range. See also diabetic ketoacidosis (DKA).

Ketosis. A buildup of ketones in the body that may lead to diabetic ketoacidosis. Signs of ketosis are nausea, vomiting, and stomach pain.

L

Lancet. A small needle, inserted in a spring-loaded device, used to prick the skin and obtain a drop of blood for checking blood glucose levels.

M

Medical alert identification. An identification card, necklace or bracelet that indicates a person has diabetes and that gives emergency numbers to call for help.

Mg/dL (milligrams per deciliter). A term used in blood glucose monitoring to describe how much glucose is in a specific amount of blood.

N

Nursing Care Plan. A plan developed by the school nurse that is used to implement the student's diabetes medical management plan. See also Individualized Health Care Plan.

P

Pallor. Abnormal paleness of the skin.

Pancreas. The organ behind the lower part of the stomach that makes insulin.

Peak effect time. Time when injected insulin has its major impact on reducing blood glucose levels.

Personal Diabetes Health Care Team. Includes the student with diabetes, the parents/ guardians, student's doctor, nurse, registered dietitian nutritionist, diabetes educator, and other health care providers involved in the student's care.

Q

Quick-acting glucose. Foods or products containing simple sugar that are used to raise blood glucose levels quickly during a hypoglycemic episode. Examples include 3 or 4 glucose tablets, 1 tube of glucose gel, 4 ounces of fruit juice (not low-calorie or reduced sugar) and 4 to 6 ounces (half a can) of soda (not low-calorie or reduced sugar).

R

Registered dietitian nutritionist (RDN). A food and nutrition expert who translates the science of nutrition into practical solutions for healthy living.

S

School Health Team. Includes the student with diabetes, the parents/guardians, the school nurse and other health care personnel, the staff members designated as trained diabetes personnel (if designated), administrators, the principal, the 504/IEP coordinator, office staff, the student's teacher(s), the school psychologist or guidance counselor, the coach, lunchroom personnel, and other school staff members.

School nurse. The school staff member who promotes the health and safety of students, intervening to manage actual and potential health problems. The school nurse provides case management services and actively collaborates with others to build the student's and family's capacity to manage health issues. In Pennsylvania, only a registered nurse licensed in the commonwealth and properly certificated by the Department of Education as an Education Specialist – School Nurse may use the title "School Nurse".

Section 504 of the Rehabilitation Act (Section 504). A Federal law that prohibits recipients of Federal financial assistance from discriminating against people on the basis of disability.

Service agreement. Student's Section 504 service agreement pursuant to Section 504 of the Rehabilitation Act of 1973 (Public Law 93-112, 29 U.S.C. § 794) and 22 PA Code Ch. 15 (relating to protected handicapped students).

Syringe. A device used to inject medications such as insulin into body tissue.

T

Target or Target range. The ideal range of blood glucose levels as determined by people with diabetes and their diabetes health care team.

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

Trained Diabetes Personnel. Nonmedical personnel who have received in-depth training about diabetes and diabetes management, and can perform student-specific diabetes care tasks, such as blood glucose monitoring; carb counting; insulin administration; recognition and treatment of hypoglycemia and hyperglycemia; and urine or blood ketone testing as designated by the school nurse. They also may be called unlicensed assistive personnel, assistive personnel, paraprofessionals, or trained nonmedical personnel.

Type 1 diabetes. Formerly called juvenile diabetes, a disease of the immune system, the body's system for fighting infection. In people with type 1 diabetes, the immune system attacks the beta cells (the insulin-producing cells of the pancreas) and destroys them. Because

the pancreas can no longer produce insulin, people with type 1 diabetes must take insulin daily to live.

Type 2 diabetes. Formerly called adult-onset diabetes and the most common form of the disease. People can develop it at any age, even during childhood. A progressive disease, type 2 diabetes usually begins with insulin resistance, a condition in which cells do not use insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. Over time, however, the pancreas loses its ability to secrete enough insulin in response to meals or to control blood glucose levels overnight or during periods of fasting.

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Urine ketone testing. Measuring the level of ketones in the urine using test strips.