



Diabetes in School Children

Recommendations &
Resource Guide for School Personnel

2009

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The completion of this important school resource was made possible by national-level efforts to help students with diabetes succeed. Much of the material included in this document was adopted and adapted from the National Diabetes Education Program, a joint program of the National Institutes of Health and the Centers for Disease Control and Prevention.

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Introduction

What is the purpose of this guide?

Diabetes in School Children: Recommendations and Resource Guide for Pennsylvania School Personnel was developed to provide schools with key information, tools, and resources that help them effectively assist students in managing their diabetes. This guide is based on national best practices for creating and ensuring a safe, nurturing learning environment for students with diabetes. School administrators, nurses, teachers, office personnel and other staff, along with parents and students, all play an important role in diabetes management, and important information and tools are included for all of these stakeholders.

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.

How is this guide organized?

This guide is organized into four major sections so that the diverse group of intended users can easily access information and tools relevant to their needs and roles:

SECTION 1: UNDERSTANDING THE DISEASE

The first section of this guide explains two types of diabetes, provides a summary of diabetes risk factors and symptoms, and describes effective diabetes management practices. Section 1 also lists resources to locate Pennsylvania and United States diabetes statistics.

SECTION 2: ADDRESSING STUDENT NEEDS

Section 2 presents diabetes management roles and responsibilities for school personnel, parents, and students. The school personnel section includes separate action sheets for:

- Principals
- School Nurses
- Teachers
- Counselors
- Coaches & Physical Education Instructors
- Food Service Managers & Lunchroom Staff
- Bus Drivers
- Parents/Guardians
- Students with Diabetes

SECTION 3: TOOLS FOR EFFECTIVE DIABETES MANAGEMENT IN SCHOOLS

This section includes useful samples of key tools for effectively managing diabetes in schools:

Sample Individualized Healthcare Plan (Includes Individualized Healthcare Plan Template with Directions)
Sample Emergency Care Plan Template
Sample Diabetes Medical Management Plan
Sample 504 for Student with Diabetes

SECTION 4: SCHOOL RESPONSIBILITIES UNDER LAW

There are federal and state laws that address schools' responsibilities to students with diabetes. These laws are outlined in Section 4 of this guide.

APPENDICES

This section includes a useful glossary of key diabetes terms and an extensive list of credible diabetes resources.

Where does the 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*, which was developed by the **National Diabetes**

Education Program

(NDEP). NDEP is a joint program of the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC). Visit NDEP online at www.ndep.nih.gov.

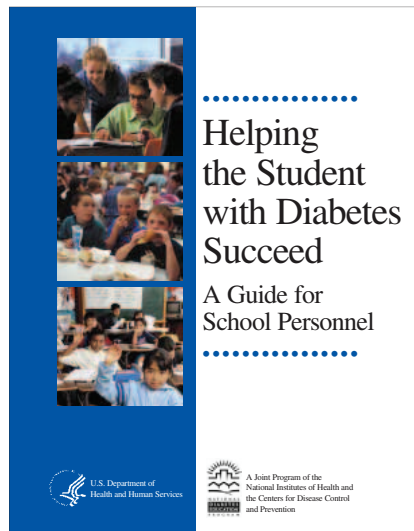
The Pennsylvania guide was developed by tailoring and adding to material in the NDEP Publication—ensuring that

recommendations both reflect national best practices and comply with Pennsylvania state laws and education policies.

Who should I contact if I have questions or comments about this guide?

The Pennsylvania Diabetes Prevention & Control Program (DPCP) is an integral part of the Pennsylvania Department of Health. DPCP strives to reduce the burden of diabetes in Pennsylvania and improve the quality of life of those Pennsylvanians with diabetes by preventing and controlling its complications through federal and state funded initiatives.

DPCP welcomes your comments and questions. Visit the program online at www.health.state.pa.us/diabetes, or contact the program at (717) 787-5876.



Section I Understanding the Disease

National & State Diabetes Burden Data Resources

National diabetes health statistics can be accessed at **Centers for Disease Control and Prevention's, Data and Trends** website <http://apps.nccd.cdc.gov/DDTSTRS/default.aspx> 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's web site, including the Epidemiologic Query and Mapping System (EpiQMS) at www.health.state.pa.us/stats. **EpiQMS** is an extensive and versatile on-line interactive system that allows users to create various state and local health statistical output on resident live births, teen pregnancies, 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 which can be accessed at www.health.state.pa.us/schoolhealth under School Health Statistics.

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 www.health.state.pa.us/diabetes under Publications.

Diabetes Primer

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

Defining Diabetes

Diabetes is a chronic disease in which the body does not make or properly use insulin. Insulin is a hormone needed to convert sugar, starches, and other food into energy. People with diabetes have increased blood glucose (sugar) levels because they lack insulin, have insufficient insulin, or are resistant to insulin's effects. High levels of glucose build up in the blood and spill into the urine; as a result, the body loses its main source of fuel.

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, oral medications may be taken instead of, or in addition to, insulin injections. It is important to note that neither insulin nor other medications are cures for diabetes—they only help control the disease.

Managing diabetes is important. When diabetes is not treated, it can lead to serious health problems. The disease can affect the blood vessels, eyes, kidneys, nerves, gums and teeth, and it is the leading cause of adult blindness, lower limb amputations, and kidney failure. People with diabetes also have a higher risk of 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 that these problems can be greatly reduced or delayed by keeping blood glucose levels near normal.

Types of Diabetes

There are two main types of diabetes: type 1 and type 2. Both types are described in detail in this section. A third type, gestational diabetes, occurs only during pregnancy and may end after delivery. Women who have had gestational diabetes, however, are more likely to develop type 2 diabetes later in life.

Type 1 Diabetes

Type 1 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 it occurs most often in children and young adults.

Symptoms

The symptoms of type 1 diabetes usually develop over a short period of time. They may include one or more of the following:

- Increased thirst and urination
- Constant hunger
- Weight loss
- Blurred vision
- Fatigue

If not diagnosed and treated with insulin, the child with type 1 diabetes can lapse into a life-threatening condition known as diabetic ketoacidosis (KEY-toe-asi-DOE-sis), or DKA.

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 beta cells. They believe that type 1 diabetes is due to a combination of genetic and environmental factors. Researchers are working to identify these factors and to stop the autoimmune process that leads to type 1 diabetes.

Type 2 Diabetes

The first step in the development of type 2 diabetes is often a problem with the body's response to insulin, or insulin resistance. For reasons scientists do not completely understand, the body of a type 2 diabetic cannot use its

insulin very well. This means that the body needs increasing amounts of insulin to control blood glucose. The pancreas tries to make more insulin, but after several years, insulin production may drop off.

Type 2 diabetes used to be found mainly in overweight adults ages 40 or older. Now, as more children and adolescents in the United States become overweight and inactive, type 2 diabetes is occurring more often in young people. To control their disease, children with type 2 diabetes may need to take oral medication, insulin, or both.

Symptoms

The symptoms of type 2 diabetes may be similar to those of type 1. However, some children and adolescents with type 2 diabetes show no symptoms at all when they are diagnosed. So, it is important for parents and caregivers to talk to their healthcare providers about screening young people at high risk for diabetes. Type 2 diabetes symptoms may include one or more of the following:

- Fatigue
- Increased thirst and urination
- Nausea
- Unexplained weight loss
- Blurred vision
- Frequent infections
- Slow healing of wounds or sores

Risk Factors

Being overweight and having a family member who has type 2 diabetes are key risk factors. Additionally, type 2 diabetes is more common in certain racial or ethnic groups, such as African Americans, Hispanic/Latino Americans, Native Americans, and some Asian Americans and Pacific Islander Americans.

Other risk factors may include:

- Elevated blood pressure
- Elevated cholesterol levels
- Females with Polycystic Ovarian Syndrome (PCOS)
- Other clinical conditions associated with insulin resistance (i.e., Acanthosis nigricans, a skin condition characterized by dark thickened velvety patches which may be observed around the neck, under the arms, and in the groin area.)
- Children born to mothers with gestational diabetes are at a higher risk.
-

Effective Diabetes Management

The goal of effective diabetes management is to control blood glucose levels by keeping them within a target range that is determined for each child. The key to optimal blood glucose control is to carefully balance food, exercise, and insulin or medication. As a general rule, food makes blood glucose levels go up, while exercise and insulin make blood glucose levels go down. Other factors, including growth and puberty, illness, mental stress, or injury can also affect blood glucose levels.

Elements of Effective Diabetes Management In Schools

Students with diabetes need supportive environments to help them take care of their diabetes throughout the school day and at school functions. There are several key elements of effective diabetes management in school, including:

- Developing written plans that outline each student's diabetes management
- Monitoring blood glucose
- Understanding hypoglycemia
- Understanding hyperglycemia
- Administering insulin
- Following an individualized meal plan
- Getting regular physical activity
- Planning for special school events
- Planning for disasters and emergencies
- 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.

Implementing Plans

Students with diabetes are more likely to succeed in school when parents, school personnel, and healthcare providers work collaboratively to ensure effective diabetes management. For this reason, school health teams should be assembled in schools, and can include the following members:

- Student with diabetes
- Parents/guardians
- School nurse and other school health personnel
- Principal
- Office staff
- Student's teacher(s)
- Guidance counselor

The school health team works to implement written plans outlining each student's diabetes management. These written plans help diabetic students, their families, school staff, and the student's healthcare provider know what is expected of them in implementing effective diabetes management. Important written plans for effective diabetes management include:

- ***A specific Diabetes Medical Management Plan*** – This plan should be part of the Individualized Healthcare Plan (IHP) and Emergency Care Plan (ECP). This plan is developed by a student's personal healthcare team and family. It outlines the prescribed healthcare regimen and should be signed by the student's physician or another member of the student's personal healthcare team. The Medical Management Plan may include information such as the student's date of diagnosis, current health status, list of diabetes equipment and supplies, specific medical orders, and emergency contact information.
- ***Individualized Healthcare Plan (IHP)*** – This plan is required by professional standards of practice and uses the nursing process (assessment, diagnosis, planning, implementation, and evaluation) to determine a plan of action that meets the healthcare needs of a student during the school day. This plan, initiated by the Certified School Nurse, provides written directions for school health personnel to follow in meeting the individual student's healthcare needs. While parental involvement is not required, it is strongly encouraged.
- ***Emergency Care Plan*** – This plan is based on the information provided in the student's Individualized Healthcare Plan and specifically describes how to recognize hypoglycemia (low blood sugar) and hyperglycemia (high blood sugar) and what to do when signs or symptoms of these conditions are observed in students with diabetes. The school nurse usually coordinates the development of the Emergency Plan, and the plan should be distributed to all school personnel who have responsibility for students with diabetes. School nurses who would like more guidance on the development of Emergency Plans can access plan samples in the National Diabetes Education Program's *Helping the Student with Diabetes Succeed* guide (www.ndep.nih.gov).



• **504 Plan or Individual Education Plan** – This Plan, IEP, or other education plan outlines what medical accommodations, educational aids, and services a student with diabetes may need. The term “504 plan” is used to refer to a plan of services developed under Section 504 of the Rehabilitation Act of 1973. An IEP is required for students who receive special education and related services under the Individuals with Disabilities Education Act of 1990. **See Section 4 of this guide for more information on these and other federal and state laws related to school responsibilities for students with diabetes.** Education plans vary based on each student’s unique needs, but plans for students with diabetes usually include the following components:

- Where and when blood glucose monitoring and treatment will take place
- Identity of licensed school nurses who are authorized to conduct blood glucose assessment, insulin and glucagon administration, and treatment of hypoglycemia and hyperglycemia
- Location of the student’s diabetes management supplies
- Free access to the restroom and water fountain
- Nutritional needs, including provisions for meals and snacks
- Plans to enable full participation in all school-sponsored activities and field trips
- Alternative times for academic exams if the student is experiencing hypoglycemia or hyperglycemia

- Permission for absences, without penalty, for doctors’ appointments and diabetes-related illness
- Maintenance of confidentiality and the student’s right to privacy

The information in a student’s Individualized Healthcare Plan can be used in developing a Section 504 Plan or Individual Education Plan (IEP). The Individualized Healthcare Plan 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 Diabetes Medical Management Plan is not a substitute for the education plans required under federal law.

See Section 3 of this guide for samples of *Diabetes Medical Management Plan, Emergency Care Plan (ECP), 504 Plan for a Child with Diabetes, and Individualized Healthcare Plan (IHP) with directions and templates.*

Monitoring Blood Glucose

Regular monitoring or checking of blood glucose levels is one of the most important parts of diabetes management. Monitoring blood glucose involves pricking the skin with a lancet at the fingertip, forearm, or other test site to obtain a drop of blood. The drop of blood is placed on a special test strip that is inserted in a glucose meter. The meter gives the current blood glucose level.

Medical providers generally recommend that students check their blood glucose levels:

- During the school day
- Usually before eating snacks or lunch
- Before physical activity
- When they have symptoms of high or low glucose

Many students can check their own blood glucose level. Others, however, will need supervision, and some will need to have blood glucose levels checked by a school nurse. **It is critically important for students to be able to check their blood glucose levels and respond to levels that are too high or too low as quickly as possible. Immediate action is important so that the symptoms of hypoglycemia or hyperglycemia do not get worse.** If recommended by the student's healthcare provider, it is medically preferable to permit students to check their blood glucose level and respond to the results any time in the classroom, at any other campus location, or at any school activity. Under the Pennsylvania Nurse Practice Act, there is no provision for a registered nurse (RN) to delegate nursing tasks, such as assessing results of blood glucose testing or administering insulin or glucagon to an unlicensed individual. See Section 4 of this guide for more information about state and federal laws related to the care of students with diabetes.

Blood glucose monitoring does not present a danger to other students or school personnel when there is a plan for proper disposal of lancets and other materials that may come into contact with blood. The family and school should agree on blood glucose monitoring and related disposal plans, which should be compliant with standard universal precautions and local waste disposal laws. The student's healthcare team can provide information about local health and safety requirements or inform families that there are single-use safety lancets available, which a doctor may order for the student with diabetes. The spring-loaded lancet can only be used once – the lancet retracts inside the device and cannot stick another individual.

“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 healthcare. 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 healthcare worker's skin or mucous membranes to potentially infective materials. Under universal precautions, it is recommended that all healthcare 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: http://www.cdc.gov/ncidod/dhqp/bp_universal_precautions.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 healthcare-related services. The guidelines can be accessed on the School Health section of the Pennsylvania Department of Health's web site under Publications and Documents/ Procedures and Guidelines/ Blood-Borne Pathogen Guidelines: <http://www.health.state.pa.us/schoolhealth>.

Treatment of Hypoglycemia

Hypoglycemia means low blood glucose, or low blood sugar. Hypoglycemia, which often cannot be prevented, 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 convulsions and can be life threatening. Early recognition of the symptoms of hypoglycemia and prompt treatment, in accordance with the student's Individualized Healthcare Plan (IHP), are critical for preventing severe symptoms that may place the student in danger.

Possible Causes of Hypoglycemia

Hypoglycemia is usually a result of:

- Administering too much insulin
- Skipping or delaying meals or snacks
- Not eating enough food as prescribed in the meal plan
- Exercising longer and/or more intensely
- A combination of these factors

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:

Mild/Moderate Symptoms	
Shaking	Disorientation
Sweating	Lack of coordination
Hunger	Irritability or nervousness
Paleness	Changed personality
Headache	Inability to concentrate
Blurred vision	Weakness
Sleepiness	Lethargy
Dizziness	Changed behavior
Confusion	
Severe Symptoms	
Inability to swallow	Having a seizure or convulsions
Unconsciousness	

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

Treatment of Hypoglycemia

Prompt treatment for hypoglycemia should be provided in accordance with the student's written plans for diabetes management and emergencies. See the previous section on Written Plans for details on what plans should include and how they should be integrated and implemented to ensure effective diabetes management for students.

Hypoglycemia is generally treated as follows:

- **Mild/Moderate Symptoms** – As soon as symptoms are observed, give the student a quick-acting sugar product, such as:
 - 3 or 4 glucose tablets
 - 3 teaspoons of glucose gel
 - 4 ounces of juice
 - 6 ounces of non-diet soda

It is important to use parent or student preference for treating hypoglycemia whenever possible!

- **Severe Symptoms** – Severe hypoglycemia is rare at school and can generally be prevented with prompt treatment in response to the early signs of low blood glucose. According to state law, a registered nurse or a licensed practical nurse must respond immediately when hypoglycemia is severe. Response to severe hypoglycemia includes:

- Positioning the student on his/her side
- Contacting the school nurse
- Calling 911
- Administration of glucagon by a registered nurse or a licensed practical nurse as prescribed by the student's healthcare provider
- Calling the student's parents/guardians

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 administered when the student's blood glucose level gets so low that the student passes out, experiences seizures, or cannot swallow. Although it may cause nausea and vomiting when the student regains consciousness, glucagon can be a life-saving treatment that cannot harm a student. The student's parents/guardians should supply the school with a glucagon emergency kit. This kit usually contains a vial of glucagon in powder form and a pre-filled syringe with special liquid; the two are mixed just before a glucagon injection is given. Glucagon may be stored at room temperature. The school nurse must have ready access to the glucagon emergency kit at all times. It is important to check expiration dates, to make sure the medication is not out of date.

Treatment of Hyperglycemia

Hyperglycemia means high blood glucose. In the short term, hyperglycemia can impair cognitive abilities and adversely affect academic performance. Over a long period of time, even moderately high blood glucose levels can lead to serious complications including heart disease, blindness, kidney failure, and amputations.

Hyperglycemia may result in acute problems. If a student fails to take insulin, if an insulin pump malfunctions and delivers less insulin, or if physical or emotional stress cause



the insulin not to work effectively, there will be a breakdown of fat causing ketones to form.

Initially, the ketones will be cleared by the kidneys into the urine. But if there are more ketones than the kidneys can handle, they will build up in the blood and may cause **diabetic ketoacidosis (DKA)**. This complication will cause a fruity breath odor, nausea, vomiting, stomach pain, and, if untreated, deep breathing and sleepiness. Students with diabetes who use insulin pumps can go into DKA within hours if their pump is not delivering insulin properly.

DKA can be prevented if the student's urine is checked for ketones during times of illness, particularly when vomiting occurs, or whenever the blood glucose level exceeds the target range indicated in the student's IHP. Some students will have a meter that can check blood ketones. Treatment guidelines for ketones and instructions outlining when to

call parents should be listed in the student's written plans for effective diabetes management. The parent is responsible for supplying ketone test strips. Urine ketone test strips can be purchased in individually foil-wrapped strips. This may be a cost-saving to the parent/family.

Possible Causes of Hyperglycemia

A student's hyperglycemia may be caused by:

- Too little insulin
- Illness
- Infection
- Injury
- Stress or emotional upset
- Ingestion of food that has not been covered by the appropriate amount of insulin
- Decreased exercise or activity
- Insulin pump malfunction
- Infusion set malfunction
- Problems with the insertion site

Symptoms of Hyperglycemia

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

- Increased thirst
- Frequent urination
- Nausea
- Blurry vision
- Fatigue
- Abdominal pain
- Hunger

Treatment of Hyperglycemia

Treatment for hyperglycemia should be provided in accordance with the student's written plans for diabetes management and emergencies. Hyperglycemia treatment may involve the following:

- Providing extra water or sugar free drinks
- Administering supplemental insulin in accordance with the student's IHP
- Ketone testing and follow-up instructions per student's IHP
- Close monitoring of blood glucose levels

Administering Insulin

Students with type 1 diabetes, and some with type 2 diabetes, require the administering of insulin to be given at regular times each day. Some students may need additional or correction doses of insulin to treat hyperglycemia or to cover a rise in blood glucose levels. The Individualized Healthcare Plan (see Section 3 for a sample plan) specifies the dosage, delivery system, and schedule for insulin administration, which will differ for each student. Education plans, such as the 504 or IEP are based on the Individualized Healthcare Plan and should specify the licensed personnel who will administer prescribed insulin according to the State Law. Some students who need insulin during the school day are able to administer it for themselves, others will need supervision and some will need the school nurse to administer the insulin for them.

Under the Pennsylvania Nurse Practice Act, there is no provision for a registered nurse (RN) to delegate nursing tasks, such as assessing blood glucose or administering insulin, to an unlicensed individual. This includes insulin pump management. See Section 4 of this guide for more information about state and federal laws related to the care of students with diabetes.

Individualized Meal Plan

There are usually no forbidden foods for people with diabetes, and the nutritional needs of a student with diabetes do not differ from the nutritional needs of a student without diabetes. Both should eat a variety of healthy foods, with an emphasis on vegetables and fruit to maintain normal growth and development. The major difference is that the **timing, amount, and content of the food that the diabetic student eats are carefully matched to the action of the insulin.**

The student's meal plan is designed to balance nutritional needs with the insulin regimen and physical activity level. The family works with the student's personal healthcare team to create an individualized meal plan based upon carbohydrate counting or an exchange system. Carbohydrate counting involves calculating the number of grams of carbohydrate or choices of carbohydrate the student eats. This information, which can be obtained from nutrition information on food labels, is used to determine

the amount of insulin the student needs to control blood glucose for any given meal or snack.

With some insulin regimens, it is important to maintain consistency in the timing and content of meals and snacks. For example, the student should eat lunch at the same time each day. Snacks are often necessary for children with diabetes and must be eaten to balance the peak times of insulin action. A missed or delayed snack could result in hypoglycemia. The student also must have immediate access to a quick-acting form of glucose, such as juice, glucose tablets or gel, or regular soda to treat hypoglycemia.

The student's written plans for effective diabetes management (e.g., 504, IEP, or other education plan) should show the timing of meals and snacks and include an alternative plan for unusual or unforeseen circumstances.

Regular Physical Activity

Everyone can benefit from regular exercise, but it is even more important for a student with diabetes. Exercise and physical activity are critical parts of diabetes management. In addition to maintaining cardiovascular fitness and controlling weight, physical activity can help to lower blood glucose levels.

Students with diabetes should participate fully in physical education classes and team sports. To maintain blood glucose levels within students' target ranges during extra physical activity, they will make adjustments in their insulin and food intake. Students may also need to check their blood glucose levels more frequently to prevent hypoglycemia.

Physical education instructors and sports coaches must be able to recognize symptoms of hypoglycemia. A quick-acting source of glucose, the student's glucose meter, snacks, and plenty of water should always be available.

Students using insulin pumps may disconnect from the pump for sports activities. Therefore, school personnel should provide students with a safe location for storing the pump when they are not wearing it. The student's IHP and education plan should include specific instructions regarding the student's participation in physical education classes and team sports.

Special School Events

Effectively 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 possible adjustments to the student's insulin regimen and meal plan and coverage by school nurses, students with diabetes can participate fully in all school-related activities without the presence of parents or guardians.

While there are usually no forbidden foods in a meal plan for students with diabetes, school parties often include foods high in carbohydrates and fats. Therefore, parents/guardians should be given advance notice of parties so they can: decide whether the student with diabetes should be given the same food as other students or food the parents provide; incorporate special foods into the meal plan; or adjust the student's insulin regimen. Schools are encouraged to provide more nutritious snacks as they are healthier for all students and help foster good eating habits.

Students often view a field trip as one of the most interesting and exciting activities of the school year, and students with diabetes must be allowed to have these school-related experiences. Students' education plans should carefully describe the plan for coverage and care during school-sponsored activities, which take place while under school jurisdiction during or outside of school hours.

Disasters and Emergencies

Parents/guardians must provide the school with an emergency supply kit so schools are prepared to care for students with diabetes in the event of natural disasters or emergencies. The emergency supply kit should contain enough supplies for 72 hours, including the following items as appropriate:

- Blood glucose meter, testing strips, lancets, and batteries for the meter
- Urine Ketone test strips
- Insulin and supplies
- Insulin pump and supplies, including syringes
- Other medications
- Antiseptic wipes or wet wipes

- Fast-acting source of glucose
- Carbohydrate-containing snacks
- Hypoglycemia food supplies (should be appropriate to child's IHP): quick-acting sugar and carbohydrate/protein snacks
- Glucagon emergency kit

Emotional and Social Concerns

Students with diabetes must deal with the usual developmental issues of growing up, in addition to learning to manage their complex disease. **Children react differently to having diabetes.** They may be accepting, resentful, open to discussing it, or eager to hide it. Often, the same child will experience all of these feelings over time. For the most part, children 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 their disease. School personnel should be aware of the student's feelings about having diabetes and identify ways to ensure that the student is treated the same as others.

Diabetes can also be a focal point for conflict within families. One of the biggest tasks for children and adolescents is to become increasingly independent from their parents. However, diabetes may compromise independence, because parents are concerned about their children's ability to perform self-care and take responsibility for it. Parents, who are ultimately responsible for their children'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 independence, oppositional behavior, and rebellion.

Depression is another concern for students with diabetes. It is increasingly being recognized as quite common among children and teens generally, and even more so in those with diabetes. **Healthcare providers and school personnel must be aware of emotional and behavioral issues related to diabetes care and management and refer students with diabetes and their families for counseling and support as needed.**

Section 2

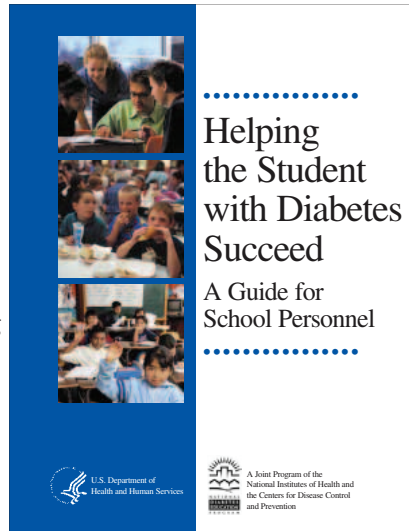
Addressing Student Needs

This section of the Guide presents the diabetes management role and responsibilities of individual school personnel, parents, and students with diabetes.

The information in this section is based on the document, *Helping the Student with Diabetes Succeed: A Guide for School Personnel*, which was developed by the National Diabetes Education Program (NDEP). The following action sheets were adapted from the National Diabetes Education Program and modified as necessary to reflect relevant

Pennsylvania state laws, policies, and practices.

The action sheets included in this section are useful tools to help ensure effective diabetes management in schools. NDEP and the Pennsylvania Diabetes Prevention and Control Program encourage the copying and distribution of these action sheets to school staff members, parents, and students with diabetes.



Actions for Principals

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

- Participate in developing and implementing school policy related to diabetes management at school.
- Ensure sufficient allocation of resources to manage students with diabetes in your school.
- Ensure the development & implementation of a system that keeps school health services 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.
- Promote a supportive learning environment for students with diabetes. Treat students with diabetes the same as other students, except to be responsive to medical needs as outlined in the student's written IHP, IEP, or other education plan.
- Identify all staff members who have responsibility for students with diabetes.
- Meet at least annually with the school health team. Arrange and attend a meeting of the school health team members (student, family, school nurse, 504/IEP coordinator, teacher(s), and other staff members who have primary responsibility for the student) before the school year starts, or when the child is newly diagnosed, to discuss medical accommodations, educational aids and services related to the student's needs.
- Support diabetes management training for the school nurse and other staff responsible for students with diabetes.
- Alert all school-related staff members who teach or supervise a student with diabetes. Ensure that they, including the bus driver, are familiar with the accommodations and emergency procedures outlined in the student's IHP, 504 Plan, IEP or other education plan.
- Alert all substitute personnel. Ensure that they are aware of the needs and emergency procedures for students with diabetes.
- Work with the school health team to implement the student's written plans, including the Diabetes Medical Management Plan and education plans. Monitor plan compliance.
- Respect the student's confidentiality & right to privacy.
- Help establish on-campus and off-campus emergency protocols.
- Include diabetes awareness as part of health or cultural education.
- Facilitate & support ongoing communication between parents/guardians of students with diabetes and school staff.
- Learn about diabetes by reviewing the information & resources presented in this guide.
- Be able to recognize & support response to signs and symptoms of hypoglycemia & hyperglycemia in accordance with the student's written emergency plans. This includes knowing when and how to contact the school nurse.
- Understand the federal & state laws that 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 Nurse Practice Act. Understand procedures for implementation of relevant laws.

Actions for School Nurses

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

School nurses coordinate the provision of healthcare services for a student with diabetes at school and at school-related activities. When notified that a student with diabetes is enrolled in the school, annually, or more often as necessary, the school nurse can:

- Obtain & review the student's current diabetes medical management plan and pertinent information from the student's healthcare provider and family.
- Facilitate the initial school health team meeting to discuss the implementation of the IHP and participate in the development of the student's education plan. The school nurse will help monitor compliance with these 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 plan.
- Conduct a nursing assessment of the student & develop an Individualized Healthcare Plan (IHP). Conduct ongoing, periodic assessments of students with diabetes and update the IHP.
- Coordinate development of an Emergency Care Plan and provide copies to staff members who have responsibility for the student throughout the day.
- Obtain materials and medical supplies necessary for diabetes care tasks from the parents/guardians and arrange a system for notifying the student or parents/guardians when supplies need to be replenished.
- Provide diabetes education resources for the student, family, and school staff, which can include sharing and reviewing sections of this Guide. Help ensure that individuals mentioned in education plans know their roles in supporting diabetes management and know when and where to seek help. School Nurses can contact the Department of Health for information.
- Participate in diabetes management training provided by healthcare professionals and organizations with expertise in diabetes to attain or enhance knowledge about current standards of care for children with diabetes.
- Perform routine & emergency diabetes care tasks, including blood glucose monitoring, urine ketone testing, insulin administration and glucagon administration, as required.
- Practice universal precautions & infection control procedures during all student encounters.
- Maintain accurate documentation of contacts with the student and family members, communications with the student's healthcare provider, any direct care given, including medication administration.
- Collaborate with other school personnel and partner agencies, such as food service staff or school transportation services to support diabetes care and management, as necessary.
- With parental permission, act as a liaison between the school and the student's healthcare provider regarding the student's self-management at school.
- Communicate to parents/guardians any concerns about the student's diabetes management or health, such as acute hypoglycemia episodes, hyperglycemia, general attitude, and emotional issues.
- Promote & encourage independence & self-care consistent with the student's ability, skill, maturity, and developmental level.
- Respect the student's confidentiality and right to privacy.
- Act as an advocate for students to help them meet their diabetes healthcare needs.

•Actions for School Nurses

Continued

- Assist the classroom teacher with developing a plan for substitute teachers to meet student needs according to care plans.
- Assist the coach or physical education instructor with managing exercise programs for students with diabetes.
- Be knowledgeable about federal, state & local laws and regulations that pertain to managing diabetes at school.

The **Pennsylvania Public School Code (PSC)** of 1949 defines a school nurse as a licensed registered nurse who is properly certified by the Pennsylvania Department of Education as a school nurse and who is employed by a school district or joint school board as a school nurse, or is employed in providing school nurse services to children of school age by a county health unit or department or board of health in any municipality with which a school district or joint school board has contracted for school health services pursuant to the provisions of 1411 of PSC.

Under the **Pennsylvania Nurse Practice Act**, there is no provision for a registered nurse (RN) to delegate nursing tasks, such as assessing blood glucose or administering insulin or glucagon to an unlicensed individual. Supplemental licensed nurses who are not certified school nurses must work under the direction 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.

See Section 4 of this guide for more information about state and federal laws related to the care of students with diabetes.



Actions for Teachers

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

- Participate in the school health team meeting(s) & support the implementation of written care plans. The teachers with primary responsibility for the student should participate in the school health team meeting(s) when the IHP, 504 Plan, IEP, or other education plans are discussed.
- Recognize that a change in the student's behavior could be a symptom of blood glucose changes. Be aware that a student who has low blood sugar, even mildly low, may briefly have some cognitive impairment. If changes occur, respond in accordance with the student's written care plans.
- Be able to recognize & support response to signs and symptoms of hypoglycemia & hyperglycemia in accordance with the student's written emergency plans. This includes knowing when and how to contact the school nurse.
- Provide a supportive environment for the student to manage diabetes effectively and safely at school. This includes: eating snacks for routine diabetes management and to treat low blood glucose levels, having bathroom privileges and access to drinking water, monitoring blood glucose, and administering insulin and other medications.
- Provide classroom accommodations for the student with diabetes, as indicated in the student's IHP, 504 Plan, IEP, or other education plan.
- Provide instruction to the student if class is missed because of absence for diabetes-related care.
- Provide information for substitute teachers that communicate the day-to-day needs of the student and the written emergency care plan.
- 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 or parents/guardians regarding any concerns about the student.
- Learn about diabetes by reviewing the information & resources presented in this Guide and discussing effective diabetes management with the school nurse.
- Respect the student's confidentiality & right to privacy.
- Treat the student with diabetes the same as other students, except to be responsive to medical needs as outlined in the student's written care plans.

Actions for Counselors

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

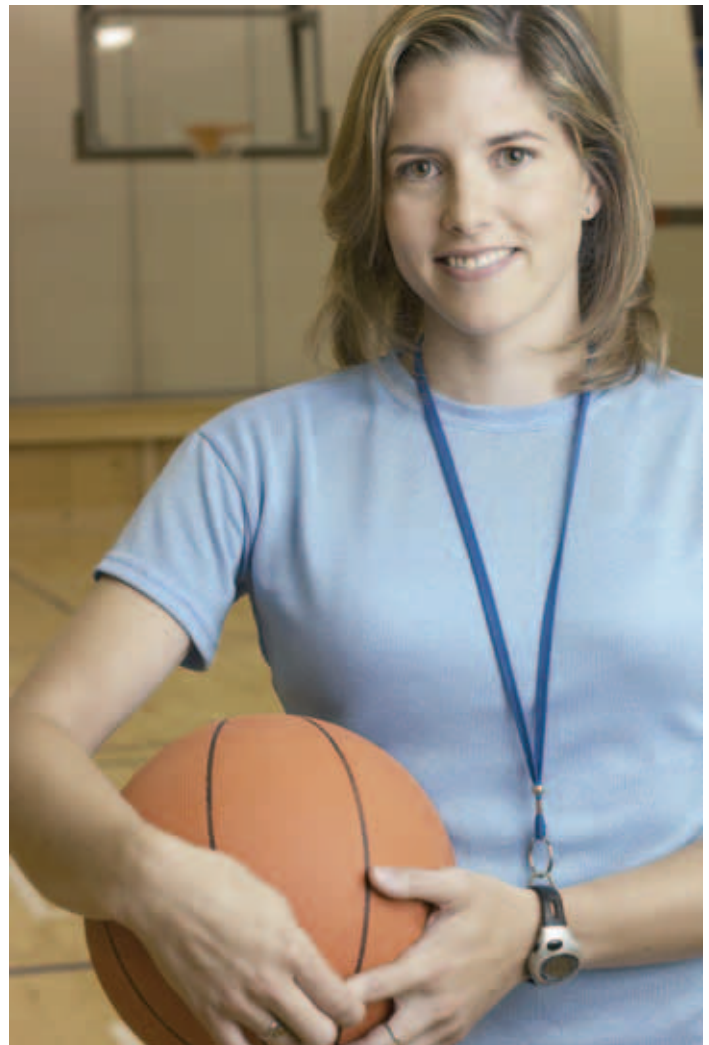
- Work with school staff to promote a supportive learning environment.
- Help to ensure that students with diabetes are treated the same as other students, except to be responsive to medical needs as outlined in the student's written care plans.
- Be aware and be prepared to respond to the emotional needs of the student. Children react differently to having diabetes. Some are accepting and open to discussing it; others are resentful and may attempt to hide it. Often, a single child will experience both kinds 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.
- 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 developmental level.
- Provide input to the school health team when requested.
- Communicate with the school nurse regarding any concerns about the student.
- Respect the student's confidentiality & right to privacy.
- Recognize that students with chronic illnesses such as diabetes may rebel by discontinuing all or part of their medical regimen. Adolescent girls, for example, may not follow their insulin regimen because they want to lose weight or to avoid gaining weight.



Actions for Coaches & Physical Education Instructors

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

- Encourage exercise and participation in physical activities and sports for students with diabetes as they would with other students. Coaches should be aware and informed that the student wearing an insulin pump may need to disconnect temporarily from the pump during sports activities. Arrangements should be made to keep the pump in a safe and accessible place.
- Encourage the student to have personal supplies readily available. Glucose monitoring equipment should be available at all activity sites. Other personal supplies will include appropriate snacks to prevent hypoglycemia and instant glucose or other fast-acting sugar for treatment of hypoglycemia.
- Allow the student to check blood glucose levels as outlined in the student's 504 Plan, IEP, or other education care plan.
- Understand and be aware that hypoglycemia can occur during and after physical activity.
- Recognize that a change in the student's behavior could be a symptom of blood glucose changes.
- Be able to recognize & support response to signs and symptoms of hypoglycemia & hyperglycemia in accordance with the student's written emergency plans. This includes knowing when and how to contact the school nurse.
- Learn about diabetes by reviewing the information & resources presented in this guide and discussing effective diabetes management with the school nurse.
- Provide input to the student's school health team as needed.
- Communicate with the school nurse regarding any concerns about the student.
- Provide information for substitute instructors that communicate the daily needs of the student and the written emergency care plan.
- Respect the student's confidentiality & right to privacy.
- Treat the student with diabetes the same as other students, except to be responsive to medical needs as outlined in the student's written care plans.



Actions for Food Service Managers & Lunchroom Staff

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

- Obtain a copy of the student's written meal plan from IHP and share with staff who will be working with the student.
- Obtain a copy of the student's written emergency plan and keep it in a known, secure place in the lunchroom.
- Provide a lunch menu & lunch schedule in advance to parents/guardians and the school nurse who will be working with the student, along with the nutritional content of menu selections, including grams of carbohydrate and fat. Inform the parents 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.
- Recognize that a change in the student's behavior could be a symptom of blood glucose changes.
- Be able to recognize & support response to signs and symptoms of hypoglycemia & hyperglycemia in accordance with the student's written emergency plans. This includes knowing when and how to contact emergency personnel.
- Learn about the various kinds of diabetes meal & snack plans. Know which type of meal plan the student follows.
- Recognize that eating meals & snacks on time is a critical component of diabetes management. Failure to eat lunch on time could result in low blood glucose, especially if the student has missed a morning snack or has had a physically strenuous or otherwise active morning at school.
- Ensure that the student has timely access to food and sufficient time to finish.
- Know where the supplies to treat hypoglycemia are kept (e.g., with the student or in another place).
- Provide input to the student's school health team as needed.
- Communicate with the school nurse any concerns about the student.
- Respect the student's confidentiality & right to privacy.
- Treat the student with diabetes the same as other students, except to be responsive to medical needs as outlined in the student's written care plans.

Actions for Bus Drivers

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

- At the beginning of the school year, work with schools to identify any student riders who have diabetes.
- Obtain a copy of the student's written emergency plan and keep it on the bus in a known, secure place. Leave the plan readily available for substitute bus drivers.
- Allow the student to check blood glucose levels as outlined in the student 504 Plan, IEP, or other education care plan.
- Understand and be aware that hypoglycemia normally occurs at the end of the day, although it may happen earlier in the day if the student has not eaten breakfast.
- Recognize that a change in the student's behavior could be a symptom of blood glucose changes.
- Be able to recognize & support response to signs and symptoms of hypoglycemia & hyperglycemia in accordance with the student's written emergency plans. This includes knowing when and how to contact emergency personnel.
- Keep supplies to treat low blood glucose on the bus and be aware of where the students with diabetes normally keep their supplies.
- Allow the student to eat approved snacks on the bus. Be aware of students with food allergies. Approved snacks should be in the student's written emergency plan or IHP.
- Provide input to the student's school health team when requested.
- Communicate with the school nurse regarding any concerns about the student.
- Respect the student's confidentiality & right to privacy.
- Treat the student with diabetes the same as other students, except to be responsive to medical needs as outlined in the student's written care plans.



Actions for Parents/Guardians

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

- Inform the school principal that your child has diabetes when he/she enrolls in the school or is newly diagnosed with the disease.
- Provide accurate & current emergency contact information.
- Provide a Diabetes Medical Management Plan to the school nurse. The plan is developed with your child's healthcare provider and should be signed by both you & the physician.
- Attend & participate in the initial and annual meetings of the school health team to discuss implementing the student's IHP, to review medical accommodations and educational aids the student may need, and to help develop a 504 Plan, IEP, or other education plan. The school health team may include the student, family, school nurse, 504/IEP coordinator, teacher(s), and other staff members who have primary responsibility for the student.
- Provide specific information about your child's diabetes and performance of diabetes-related tasks at home to the school health team.
- Permit sharing of information that is necessary for the student's safety between the school and the student's personal healthcare providers.
- Inform school staff of any changes in the student's health status.
- Provide all supplies and equipment necessary for implementing the student's written care plans, including blood glucose monitoring equipment, supplies for insulin administration and ketone testing, snacks, fast-acting glucose, and a glucagon emergency kit. As appropriate, provide these supplies to school personnel. Replenish supplies as needed.
- Provide and maintain all supplies and equipment necessary to accommodate the student's long-term needs (72 hours) in case of an emergency.
- Inform appropriate school staff when the student plans to participate in school-sponsored activities that take place before or after school so that healthcare coverage can be coordinated to ensure the health and safety of the student with diabetes.
- Understand the federal, state & local laws and policies that address the school's responsibilities to students with diabetes.

Actions for Students with Diabetes

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

- Participate in the school meeting(s) when asked to discuss your Individualized Healthcare Plan (IHP) or other written school plans for your diabetes care.
- Always wear your medical alert ID and carry a fast-acting source of glucose.
- Tell teachers or other school staff members if you feel symptoms of low blood glucose.
- Work with the school nurse or tell a teacher or other school staff members if you need help checking your blood glucose, getting insulin, or eating the right amount of food at the right time during the day.
- Learn how to properly use your insulin pump and ask school nurse for help managing it.
- Take charge of your diabetes care at school, if your written school plans allow you to. This may include:
 - Checking and writing down blood glucose levels
 - Figuring out the right insulin doses
 - Giving yourself insulin
 - Disposing of needles, lancets, and other supplies you have used in approved containers
 - Eating meals and snacks as planned
 - Treating low blood sugar
 - Carrying diabetes equipment and supplies with you at all times
 - Reporting to the school nurse whenever unusual events occur
 - Students should never seek help or treatment alone if having symptoms of low or high glucose or not feeling well. Ask someone to go with you.

Things You Need To Know:

1. **WHO** to contact and what to do when you are having a low blood glucose reaction.
2. **WHAT** your written school plans say to help you manage your diabetes, which person at school will help you, and what is expected of you.
3. **WHEN** you should check your blood glucose levels, give yourself insulin (if allowed), have a snack, and eat lunch.
4. **WHERE** your diabetes supplies are stored (if you don't carry them) and who to contact when you need to use them.

Tools for Effective Diabetes Management in Schools

This section of the Guide presents samples of four key plans that help students with diabetes, their families, school staff, and the student's healthcare provider know what is expected of them in implementing effective diabetes management:

- Sample *Individualized Healthcare Plan* and *Individualized Healthcare Plan Template with Directions*
- Sample *Emergency Care Plan Template*
- Sample *Diabetes Medical Management Plan*
- Sample *504 for Student with Diabetes*

See the Diabetes Primer in Section 1 of this Guide for descriptions of these important student plans.

Sample Individualized Healthcare Plan					
Name: Jane Jones				DOB: 12/ 12 2000	
Primary Care Provider: DR. Seuss				Emergency Contact No.: 777-777-7777	
Review Dates:				Teacher: Ms Darling	
Assessment Data	Nursing Diagnosis	Outcomes Identification	Nursing Interventions	Evaluation	
1 Frequent Insulin; New diagnosis	Potential for physiologic imbalance	Changes in frequency of imbalance; prompt treatment of all noted imbalances	Monitor blood sugar testing; Inservice teachers on early identifications of reactions	(Review documentation and identify improvement or need for change in interventions, document review here)	
2 Jane has difficulty understanding relationship between diet, exercise, and medication; Growth spurt in progress	Knowledge deficit related to new diagnosis	Changes in skill level with blood sugar testing; changes in frequency of imbalances affecting class time	Set up a schedule to monitor blood sugar testing and insulin management skills with Jane; Build teaching sessions into daily contacts	(Review documentation and identify improvement in management skills or need for change in interventions, document review here)	
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Individualized Healthcare Plan Template with Directions				
Name:				DOB:
Primary Care Provider:				Emergency Contact No.:
Review Dates:				Teacher:
Assessment Data	Nursing Diagnosis	Outcomes Identification	Nursing Interventions	Evaluation
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Sample

Emergency Care Plan Template

Name: _____ DOB: _____

School: _____ Grade: _____

Parent/Guardian Emergency Contact: _____

Telephone (h): _____ (w): _____ (cel) _____

Parent/Guardian Emergency Contact: _____

Telephone (h): _____ (w): _____ (cel) _____

Emergency Contact (if Parent/Guardian not available)/Relationship/Telephone Number:

Healthcare Provider/Telephone: _____

KNOWN ALLERGIES: _____

HEALTH PROBLEM: _____

IN A HEALTH EMERGENCY (STUDENT) LOOKS LIKE:

PLEASE DO THE FOLLOWING:

Parent/Guardian Signature: _____ Date: _____

Certified School Nurse Signature: _____ Date: _____

Sample
Diabetes Medical Management Plan

Date of Plan: _____

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

Effective Dates: _____

Student's Name: _____

Date of Birth: _____ Date of Diabetes Diagnosis: _____

Grade: _____ Homeroom Teacher: _____

Physical Condition: ☐ Diabetes type 1 ☐ Diabetes type 2

Contact Information

Mother/Guardian: _____

Address: _____

Telephone: Home _____ Work _____ Cell _____

Father/Guardian: _____

Address: _____

Telephone: Home _____ Work _____ Cell _____

Student's Doctor/Health Care Provider:

Name: _____

Address: _____

Telephone: _____ Emergency Number: _____

Other Emergency Contacts:

Name: _____

Relationship: _____

Telephone: Home _____ Work _____ Cell _____

Notify parents/guardian or emergency contact in the following situations: _____

Blood Glucose Monitoring

Target range for blood glucose is ☐ 70-150 ☐ 70-180 ☐ Other _____

Usual times to check blood glucose _____

Times to do extra blood glucose checks (*check all that apply*)

☐ before exercise

☐ after exercise

☐ when student exhibits symptoms of hyperglycemia

☐ when student exhibits symptoms of hypoglycemia

☐ other (explain): _____

Can student perform own blood glucose checks? ☐ Yes ☐ No

Exceptions: _____

Type of blood glucose meter student uses: _____

Insulin

Usual Lunchtime Dose

Base dose of rapid or short-acting insulin at lunch is _____ (record brand name)

Use of other insulin at lunch (intermediate or basal) is _____ (record brand name)

Insulin Correction Doses

Parental authorization should be obtained before administering a correction dose for high blood glucose levels. ☐ Yes ☐ No

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

Can student give own injections? ☐ Yes ☐ No

Can student determine correct amount of insulin? ☐ Yes ☐ No

Can student prepare correct dose of insulin? ☐ Yes ☐ No

_____ Parents are authorized to adjust the insulin dosage under the following circumstances:

For Students with Insulin Pumps

Type of pump: _____ Basal rates: _____ 12 am to _____
_____ to _____
_____ to _____

Type of insulin in pump: _____

Type of infusion set: _____

Insulin/carbohydrate ratio: _____ Correction factor: _____

Student Pump Abilities/Skills: Needs Assistance

Count carbohydrates ☐ Yes ☐ No

Bolus correct amount for carbohydrates consumed ☐ Yes ☐ No

Calculate and administer corrective bolus ☐ Yes ☐ No

Calculate and set basal profiles ☐ Yes ☐ No

Calculate and set temporary basal rate ☐ Yes ☐ No

Disconnect pump ☐ Yes ☐ No

Reconnect pump at infusion set ☐ Yes ☐ No

Prepare reservoir and tubing ☐ Yes ☐ No

Insert infusion set ☐ Yes ☐ No

Troubleshoot alarms and malfunctions ☐ Yes ☐ No

For Students Taking Oral Diabetes Medications

Type of medication: _____ Timing: _____

Other medications: _____ Timing: _____

Meals and Snacks Eaten at School

Is student independent in carbohydrate calculations and management? Yes No

Meal/Snack Time Food content/amount

Breakfast _____

Mid-morning snack _____

Lunch _____

Mid-afternoon snack _____

Dinner _____

Snack after exercise? ☐ Yes ☐ No

Other times to give snacks and content/amount:

Preferred snack foods:

Foods to avoid, if any:

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

Exercise and Sports

A fast-acting carbohydrate such as _____ should be available at the site of exercise or sports.

Restrictions on activity, if any: _____ student should not exercise if blood glucose level is below _____ mg/dl or above _____ mg/dl or if moderate to large urine ketones are present.

Hypoglycemia (Low Blood Sugar)

Usual symptoms of hypoglycemia: _____

Treatment of hypoglycemia: _____

Glucagon should be given if the student is unconscious, having a seizure (convulsion), or unable to swallow.

Route _____, Dosage _____, site for glucagon injection: _____ arm, _____ thigh, _____ other.

If glucagon is required, administer it promptly. Then, call 911 (or other emergency assistance) and the parents/guardian.

Hyperglycemia (High Blood Sugar)

Usual symptoms of hyperglycemia: _____

Treatment of hyperglycemia: _____

Urine should be checked for ketones when blood glucose levels are above _____ mg/dl.

Treatment for ketones: _____

Supplies to be Kept at School

_____ Blood glucose meter, blood glucose test strips, batteries for meter

- _____ Lancet device, lancets, gloves, etc.
- _____ Urine ketone strips
- _____ Insulin pump and supplies
- _____ Insulin pen, pen needles, insulin cartridges
- _____ Fast-acting source of glucose
- _____ Carbohydrate containing snack
- _____ Glucagon emergency kit

Disaster Planning

(Describe school's disaster plan and how it relates to the child with diabetes)

Health care Provider: _____ Date: _____

Sample 504 for Student with Diabetes

SCHOOL DISTRICT NAME
SCHOOL DISTRICT ADDRESS

Model Protected Handicapped Student Chapter 15 Service Agreement (504 Plan) For a Student with Diabetes

[Note: This model Chapter 15 Service Agreement (504 Plan) lists a broad range of services and accommodations that might be needed by a child 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 model that are relevant to that student. Some students will need additional services and accommodations that have not been included in this model plan.]

OBJECTIVES/GOALS OF THIS PLAN

Diabetes can cause blood glucose (sugar) levels to be too high or too low, both of which affect the student's ability to learn, as well as seriously endanger the student's health both immediately and in the long term. The goal of this plan is to provide the related aids and services needed to maintain blood glucose levels within this student's target range, and to respond appropriately to levels outside of this range in accordance with the instructions provided by the student's personal healthcare provider team.

DEFINITIONS USED IN THIS PLAN

1. **Individualized Healthcare Plan (IHP):** A plan that describes the diabetes care regimen and identifies the healthcare needs of a student with diabetes. This plan is developed by the school nurse, based upon the recommendations and medical orders of the student's personal healthcare provider team and the student's current condition. The plan is also approved by the student's parent/guardian.
2. **Emergency Care Plan (ECP):** A plan that provides school personnel with essential information on how to recognize and react to signs and symptoms of low blood glucose and/or high blood glucose. This plan is developed by the school nurse based on the recommendations and medical orders of the student's personal healthcare provider team and the student's current condition assessed by the school nurse.
3. **Medical Management Plan (MMP):** A plan, written by the student's personal healthcare provider team, that is communicated to the school nurse and includes medication orders and protocols for response to this particular student's medical needs.
4. **Licensed Health Room Staff:** Certified School Nurse (CSN); Registered Nurse (RN); Licensed Practical Nurse (LPN)

**PROTECTED HANDICAPPED STUDENT
CHAPTER 15 SERVICE AGREEMENT (504 Plan)
(Diabetes)**

Date: ____/____/____

School: _____

☐ Medical

☐ Initial Agreement

☐ OT/PT

☐ Modified Agreement

☐ Social/Emotional/Behavioral

☐ Homebound Instruction

Student Name: _____ Grade: _____ School Year: _____

Parent/Guardian Name: _____

FOLLOWING IS A SUMMARIZATION OF THE RECOMMENDATIONS AND AGREEMENTS FOR ACCOMMODATIONS THAT ARE NEEDED BY YOUR CHILD TO MEET HIS/HER NEEDS. THESE RECOMMENDATIONS ARE A RESULT OF THE RECENT EVALUATION AND/OR PRESCRIPTION FROM DOCTOR(S), THERAPISTS, OR OTHER HEALTHCARE PROVIDER TEAM PERSONNEL.

Provision of Diabetes Care

1. In Pennsylvania, insulin and glucagon injections require the assistance of a licensed nurse during school hours, school sponsored activities and/or on school sponsored trips.
2. All staff members that interact with students with diabetes will be able to recognize symptoms of high blood glucose and low blood glucose and be able to react to these symptoms as per the ECP, IHP and MMP.
3. _____ shall have immediate access to all items necessary for the treatment of low and high blood glucose, including blood glucose testing equipment, insulin, syringes and fast acting sugar (i.e., juice boxes, glucose tabs, glucose gel) as provided by parent/guardian and ordered by a medical provider.
4. Blood glucose checks as ordered by the medical provider may be done by the CSN, RN, LPN, parent/guardian, student (when able) or authorized school personnel at any location in school. The licensed nurse will assess the resulting data as per the IHP and/or the ECP.
5. The CSN, RN, LPN, parent or student can give insulin doses as ordered by the medical provider, with the written approval of the parent/guardian.
6. Health room staff may contact _____'s medical provider for advice or consultation when necessary. Phone numbers to be provided by parent/guardian and readily available in health office and student's ECP.
7. _____'s diabetes ECP will be made available to all staff including substitute teachers, bus drivers, etc. as appropriate per the CSN.

Student's level of self-care and location of supplies and equipment

1. The student is able to perform the following diabetes care tasks without help or supervision as per the MMP and as assessed by the professional nurse (CSN or RN):

NOTE: The student will be permitted to provide this self-care as directed by the MMP, IHP and ECP as to time, locations, including all school sponsored activities.

2. The student needs assistance or supervision with the following diabetes healthcare tasks:

3. The student needs a licensed nurse to perform the following diabetes healthcare tasks:

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

5. Diabetes supplies and equipment that are not kept on/with the student will be kept:

6. Parent/guardian is responsible for providing diabetes supplies, equipment, snacks and/or other food to meet the needs of the student as directed in the MMP, IHP and ECP.

Snacks and Meals

1. _____ shall be permitted to have snacks, in compliance with all other policies, (i.e., food allergy whenever and wherever necessary during the school day as ordered by the medical provider. Parents/guardian will supply the snacks. (Snacks must be available).
2. _____ will be allowed to have enough time to finish his/her lunch and snacks. Lunch will be the same time each day unless he/she requires earlier lunch due to low blood sugar or delayed lunch due to treatment of high blood sugar.
3. The parent/guardian will supply snacks needed in addition to or instead of any snacks supplied for all students.
4. _____'s parents/guardian will be notified three days in advance (or as soon as possible in emergency situations), with any changes in the school's schedule that may affect diabetes management.

Exercise and Physical Activity

1. If _____'s blood glucose level is outside of acceptable range for physical education prior to gym class, he/she will be excused without penalty by the CSN or RN/LPN in consultation with the CSN and in accordance with his/her MMP, IHP and /or ECP.
2. The student shall be permitted to participate fully in physical education classes and team sports, except as set out in the student's IHP, MMP and/or ECP
3. Responsible school staff members will make sure that the student's quick-acting source of glucose, appropriate snacks, water, and/or adequate supervision is always available at the site of physical education class and team sports practices, games, and school sponsored extracurricular activities.

Water and Bathroom Access

1. _____ shall be permitted to use the bathroom without restrictions as ordered by a medical provider.
2. _____ shall be permitted to have immediate access to water, including keeping a water bottle in his/her possession or be allowed to use the drinking fountain without restrictions as ordered by a medical provider.
3. If _____ needs to take breaks to use the bathroom, water fountain, or for any treatment related to his/her diabetes he/she will be given extra time to finish the test and/or assignment without penalty.

Checking Blood Glucose Levels, Insulin and Medication Administration, and Treating High or Low Blood Glucose Levels

1. Blood glucose monitoring will be done at the times designated in the student's IHP and MMP and whenever _____ feels his/her blood glucose level may be high or low or when symptoms of high or low blood glucose levels are observed.
2. In the event _____ shows signs/symptom of hypo or hyperglycemia (low or high blood glucose) he/she will be treated according to the MMP, IHP and the ECP and then escorted to the health room by a responsible person.
3. When necessary, urine will be tested for ketones and treatment given by the CSN, RN or LPN, in accordance with the MMP, IHP and ECP.
4. Any staff member finding _____ unconscious will call 911, then contact the nurse on duty in the building. If no nurse is in the building, call the CSN assigned to the building and call the parents, as per the Emergency Care Plan (ECP).
5. _____'s glucose results will be recorded in his/her daily log. A copy of the daily log will be sent home with the student at the end of the school week.

Field Trips and extracurricular activities

1. A parent/guardian will be allowed, but not required, to accompany _____ on field trips.
2. All diabetes supplies will accompany _____ on field trips.

3. _____ may take his/her own food and lunch on field trips.
4. _____ will be under the supervision of a responsible adult prepared to respond to symptoms of high or low blood glucose levels per the ECP.

Tests and Classroom Work

1. If _____ needs to take breaks to use the bathroom, water fountain, or for any treatment related to his/her diabetes, he/she will be given extra time to finish the test and/or assignment without penalty.
2. If _____ is affected by high or low blood glucose levels at the time of regular or standardized testing, he/she will be permitted to test at a later time.
3. If class time is missed for diabetes management, _____ will be responsible to obtain class work and homework assignments by the end of that school day or as directed in the IHP/MMP.
4. _____ shall be permitted to leave class to go to the Certified School Nurse (CSN) or designated health room personnel for diabetes related issues.
5. _____ will not be penalized for visits to the health room in order to maintain blood glucose control.
6. _____ will not be penalized for absences or tardiness required for medical appointments or illness. Notes from the medical provider and or parents/guardian will be required according to school policy.
7. _____'s IHP will address management options to decrease loss of educational time.
8. If _____ misses two or more consecutive days of school, the teachers will compile his/her work to be sent home with a sibling or picked up by a parent in the main office, or as planned in IHP/MMP.

Communication

1. The school nurse and all other staff will keep the student's diabetes information confidential.
2. Encouragement is essential. The student shall 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.
3. 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.

Emergency Evacuations and Shelter-in-Place

1. Consider _____'s needs for licensed nursing care and supplies (including snacks/food and medication requirements around the clock) and equipment when planning for this contingency.

TYPE OF SERVICE, SERVICE PROVIDER AND DURATION OF SERVICE MUST BE INCLUDED AS APPROPRIATE.

****IN THE EVENT OF AN EMERGENCY, _____'s *EMERGENCY CARE PLAN* ON FILE IN THE NURSE'S OFFICE AND COMMUNICATED WITH ALL WHO NEED TO KNOW, IS TO BE FOLLOWED.**

THE ATTACHED LETTER OUTLINES YOUR RIGHTS TO RESOLVE ANY DISPUTES THAT YOU MAY HAVE CONCERNING THE RECOMMENDATIONS. IF YOU HAVE ANY QUESTIONS CONCERNING YOUR RIGHTS OR THE ABOVE RECOMMENDATIONS, PLEASE FEEL FREE TO CONTACT ME.

School District Professional Employee and Phone Number

Date

Central Office Approval

Date

DIRECTIONS TO PARENTS: Please check one of the options, sign, and return this form to:
Student Services, (*NAME*) School District, Administration Building,
(*School District*) Address.

☐ I agree and give permission to
proceed as recommended.

☐ I do not agree and do not give permission
to proceed as recommended and will
schedule planning conference

My reason for disapproval is: _____

Parent/Guardian Signature: _____ Date: _____

School Responsibilities Under Law

There are several federal laws that apply to a school's responsibility to help students manage diabetes, and students with diabetes could be covered under one or more of these laws. In addition, there are state laws and school district policies that govern and impact the provision of diabetes care services in schools.

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 AMERICANS WITH DISABILITIES ACT OF 1990 (ADA)

Section 504 prohibits recipients of federal funds 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 funds. Public school districts that receive federal funds are covered by both Title II and Section 504, and the obligations of public schools to students with disabilities under each law are generally the same. For schools, these laws are enforced by the Office for Civil Rights (OCR) in the U.S. Department of Education.

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, since each student is different, and his or her needs will vary. Historically, students with diabetes have been covered by Section 504 and the ADA.

Under Section 504, students with disabilities must be given an equal opportunity to participate in academic, nonacademic, and extracurricular activities. The regulations also require school districts to identify all students with

disabilities and to 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 nondisabled students are met.

However, a student does not have to receive special education services in order to receive related aids and services under Section 504. 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 that schools may have to provide for a particular student with diabetes. 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."

Private schools that receive federal funds 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 are covered by Title III of the ADA.

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 child 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 child 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 child’s IEP must include the supplementary aids and services to be provided for, or on behalf of, the child and a statement of the program modifications or supports for school personnel that will be provided so the child can make progress and be involved in the general 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 particular student with diabetes who is eligible under IDEA.

Generally, if a child with diabetes needs only a related service and not special education services as defined by state law, that child is not a child with a disability under IDEA and therefore is not eligible for any services under IDEA. Such a child might still be eligible for services under Section 504.

FAMILY EDUCATION 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 consent of the student’s

parent or the eligible student (a student who is 18 years old or older or who attends an institution of postsecondary education). FERPA does allow schools to disclose this information, without obtaining consent, to school officials, including teachers, who have legitimate educational interests in the information and in the educational interests of the child. Schools that do this must include in their annual notification to parents and eligible students the criteria for determining who constitutes a school official and what constitutes a legitimate educational interest. Additionally, under FERPA, schools may not prevent the parents of students, or eligible students themselves, from inspecting and reviewing the student’s education records.

OBTAINING ADDITIONAL 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 at (202) 205–5413 or toll-free at 1–800–421–3481. For TTY, call 1–877–521–2172.

Information is also available on the OCR website, www.ed.gov/ocr. 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) 205–5507 or (202) 205–5637 for TTY. More information about FERPA is available at www.ed.gov/offices/OM/fpc.

State Laws & Regulations

PUBLIC SCHOOL CODE OF 1949 (PSC)¹

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 guardians of the apparent need for a special medical or dental examination. The parent or guardians 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.

¹Excerpts from the Joint State Government Commission’s 2004 Report on Laws Regulating School Nurses in Pennsylvania and Other States: <http://jsg.legis.state.pa.us/NURSES%20REPORT.HTML>

While state law and regulations mandate that each school district provide nursing 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.

NURSE PRACTICE ACT & 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. Under the Nurse Practice Act, there is no provision for a registered nurse (RN) to delegate nursing tasks, such as assessing blood glucose or administering insulin or glucagon, to an unlicensed individual. 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 Substances, Drugs, 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 healthcare-related services.

OBTAINING ADDITIONAL INFORMATION

- The Pennsylvania Public School Code of 1949 can be accessed online at: www.dsf.health.state.pa.us/health/lib/health/schoolhealth/article_xiv_december_2006.pdf
- The Pennsylvania Nurse Practice Act can be accessed online at: www.dos.state.pa.us/bpoa/lib/bpoa/20/nurs_board/nurseact.pdf
- The Pennsylvania Guidelines on Bloodborne Pathogens for the Public Sector can be accessed online at: www.health.state.pa.us/pdf/hpa/epi/bloodpathweb.pdf?healthPNav=%7C

Appendix A: Glossary of Diabetes Terms

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

A

Americans with Disabilities Act

A federal law enacted in 1990 to protect people with disabilities from discrimination. Under this law, diabetes can 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

Blood glucose level

The amount of glucose in the blood. The recommended blood glucose levels for most people with diabetes are from about 80 to 120 before a meal, 180 or less after a meal, and between 100 and 140 at bedtime.

Blood glucose meter

A device that measures how much glucose is in the blood. A specially coded test strip containing a fresh sample of blood (obtained by pricking the skin, usually the finger, with a lancet) is inserted in the meter, which then measures the amount of glucose in the blood.

Blood glucose monitoring

The act of checking the amount of glucose in the blood. Also called self-monitoring of blood glucose.

C

Carbohydrates

One of the three main classes of foods and a source of energy for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. Foods high in 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, and molasses.

Complications of diabetes

Harmful effects that may happen when a person has diabetes. Short-term complications resulting from poorly controlled or uncontrolled diabetes 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, include blindness, amputation of feet or legs, kidney disease, heart disease, stroke, and nerve damage.

D

Diabetes Medical Management Plan

Describes the medical orders or diabetes regimen developed by the student's healthcare provider and family.

Diabetic Coma

A severe emergency in which a person is not conscious, because his or her blood glucose is too low or too high. See also hyperglycemia, hypoglycemia, and diabetic ketoacidosis.

Diabetic ketoacidosis (DKA)

A condition that occurs due to insufficient insulin in the body. This can be due to illness, incorrect doses of insulin, or omitting insulin injections. The acidic state that follows causes fruity smelling breath, deep and rapid breathing, stomach pain, nausea, vomiting, and sleepiness. DKA can lead to coma and death if not treated promptly.

E

Emergency Care Plan (ECP)

This plan provides school personnel with essential information on how to recognize and treat hypoglycemia or hyperglycemia.

F

Fast-acting glucose

Foods containing simple sugar that are used to raise blood glucose levels quickly during a hypoglycemic episode.

G

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 blood. It is the body's main source of energy.

Glucose tablets or gel

Special products that deliver a pre-measured amount of pure glucose. They are a fast-acting form of glucose used to counteract hypoglycemia.

H

Hormone

A chemical produced by an organ that travels in the blood to affect other organs.

Hyperglycemia

A high level of glucose in the blood. High blood glucose can be due to a mismatch in insulin, food, and exercise. Symptoms include thirst, frequent urination, blurred vision, and fatigue.

Hypoglycemia

A low level of glucose in the blood. Low blood glucose is most likely to occur during or after exercise, if too much insulin is present, or not enough food is consumed. Symptoms include feeling shaky, having a headache, or being sweaty, pale, hungry, or tired.

I

Individualized Education Program (IEP)

A program designed for students covered by the Individuals with Disabilities Education Act (IDEA).

Individualized Healthcare Plan (IHP)

A plan developed by the school nurse used to implement the student's diabetes medical management plan. The plan describes functional problem areas, sets goals for overcoming problems, and lists tasks/interventions to meet the goals.

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. To be eligible for services under IDEA, a student's diabetes must impair his or her educational performance so that he or she requires special education and related services.

Insulin

A hormone produced by the pancreas that helps the body use glucose for growth and energy. There are several types of insulin that are used in combination to treat people with diabetes. These different types of insulin have been manufactured either to have immediate (rapid-acting or short-acting insulin), intermediate or long (basal insulin) onset of action and duration of action in the body. A coordinated combination of insulins are used to allow for adequate treatment of diabetes at meals, snacks, during periods of physical activity, and through the night.

Insulin injections

The process of putting insulin into the body with a needle and syringe or an insulin pen.

Insulin pen

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

Insulin pump

A device that delivers a continuous supply of insulin. The insulin is delivered in a steady, measured dose through a system of plastic tubing (infusion set). Most infusion sets are started with a guide needle, then the plastic cannula (a tiny, flexible plastic tube) is left in place, taped with dressing, and the needle is removed.

Insulin resistance

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

K**Ketoacidosis**

See Diabetic ketoacidosis.

Ketones (ketone bodies)

Chemicals that the body makes when there is not enough insulin in the blood and the body must break down fat for its energy. Ketones can poison and even kill body cells. When the body does not have the help of insulin, ketones build up in the blood and “spill” over into the urine so that the body can get rid of them. Ketones that build up in the body for a long time lead to serious illness and coma. See also: Diabetic ketoacidosis.

L**Lancet**

A fine, sharp-pointed needle used by people with diabetes for pricking their skin to obtain a sample of blood for blood glucose monitoring.

M**Metabolism**

The term for the way cells chemically change food so that it can be used to keep the body alive.

Medical alert identification

An identification card and necklace or bracelet indicating the student has diabetes and giving an emergency number to call.

Mg/dL

Milligrams per deciliter. This term is used in blood glucose monitoring to describe how much glucose is in a specific amount of blood.

P**Pallor**

Abnormal paleness of the skin.

Palpitations

Abnormally rapid or violent beating of the heart.

Pancreas

The organ behind the lower part of the stomach that manufactures, stores and releases the hormone insulin.

Peak effect time

Time when insulin has its major impact on reducing blood glucose levels. See also Insulin.

S**Section 504 of the Rehabilitation Act**

A federal law that prohibits recipients of federal funds from discriminating against people on the basis of disability.

Syringe

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

T**Target range**

A selected level for blood glucose values that the person with diabetes tries to maintain. The target range is usually determined by the physician in consultation with the patient (or parents, if the patient is a child). See also blood glucose levels.

Test strips

Specially designed strips used in blood glucose meters or in urine testing.

U**Urine ketone testing**

A procedure for measuring the level of ketones in the urine.

Appendix B:

Resource List

National Resources

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

American Academy of Family Physicians (AAFP)

The AAFP is the national member organization of family doctors. Its website includes articles about the link between obesity and diabetes in young people and how to help children lose weight.

11400 Tomahawk Creek Parkway

Leawood, KS 66211

Phone: (913) 906-6000

www.aafp.org

American Academy of Pediatrics (AAP)

The AAP is a professional membership organization committed to the attainment of optimal physical, mental, and social health and well-being for all infants, children, adolescents, and young adults.

141 Northwest Point Boulevard

Elk Grove Village, IL 60007-1098

Phone: (847) 434-4000

www.aap.org

American Association for Health Education (AAHE)

The AAHE serves health educators and other professionals who promote the health of all people through education and other systematic strategies. Programming focuses on health promotion in schools (K-12), healthcare, public and community agencies, business/industry, and professional preparation. AAHE is one of six national associations within the American Alliance for Health, Physical Education, Recreation and Dance.

1900 Association Drive

Reston, VA 20191

Toll-free: 1-800-213-7193, Ext. 437

www.aahperd.org/aahe

American Association of Diabetes Educators (AADE)

The AADE is a multidisciplinary organization for health professionals who provide diabetes education and care. The AADE website provides diabetes links, including information about diabetes in children and adolescents.

100 West Monroe Street, Suite 400

Chicago, IL 60603

Toll-free: 1-800-TEAM-UP4 (1-800-832-6874)

www.aadenet.org

American Council on Exercise (ACE)

The ACE is a nonprofit organization that promotes active, healthy lifestyles and their positive effects on the mind, body, and spirit. Its programs are directed to youths as well as adults.

4851 Paramount Drive

San Diego, CA 92123

Phone: (858) 535-8227

www.acefitness.org

American Diabetes Association (ADA)

The ADA's mission is to prevent and cure diabetes and improve the lives of people with diabetes. Founded in 1940, the association conducts programs in all 50 states and the District of Columbia, reaching hundreds of communities across the country. The ADA is a nonprofit organization that provides diabetes research, information, and advocacy. The association offers a variety of programs focused on young people with diabetes.

1701 North Beauregard Street

Alexandria, VA 22311

Toll-free: 1-800-DIABETES (1-800-342-2383)

www.diabetes.org

For information about ADA's training curriculum for school personnel:

www.diabetes.org/schooltraining

American Dietetic Association (ADA)

The ADA is a member organization for registered dietitians and registered technicians representing special interests, including public health, sports nutrition, medical nutrition therapy, diet counseling for weight control, cholesterol reduction, and diabetes. More than 5,000 dietitians now belong to the ADA's specialty group on Diabetes Care and Education.
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
Toll-free: 1-800-877-1600
Consumer referral: 1-800-366-1655
www.eatright.org

American Medical Association (AMA)

The AMA is the nation's leader in promoting professionalism in medicine and setting standards for medical education, practice, and ethics. As the largest physician membership organization in the United States, the AMA is at the forefront of every major development in medicine and is a steadfast and influential advocate for physicians and their patients. The AMA works tirelessly to promote the art and science of medicine and the betterment of public health.
American Medical Association
Science, Quality and Public Health Group
515 N. State Street
Chicago, IL 60610
Phone: (312) 464-4908
www.ama-assn.org

American School Health Association (ASHA)

The mission of the ASHA is to promote and improve the well-being of children and youth by supporting comprehensive school health programs. In addition to a journal, the association produces a book for school nurses and families on managing school-age children with chronic health conditions.
Route 43, P.O. Box 708
Kent, OH 44240
Phone: (330) 678-1601
www.ashaweb.org

Barbara Davis Center for Childhood Diabetes

The Barbara Davis Center for Childhood Diabetes is the largest diabetes and endocrine care program in Colorado with unique facilities and resources for clinicians, clinical

researchers, and basic biomedical scientists working to help patients with type 1 diabetes. The center provides state-of-the-art clinical diabetes care to a majority of children and many adults within the Rocky Mountain Region.

4200 East Ninth Avenue
Box B -140
Denver, Colorado 80262
Phone: (303) 315-8796
www.barbaradaviscenter.org

Centers for Disease Control and Prevention (CDC)

The CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States. CDC divisions with special relevance to diabetes in students are the Division of Diabetes Translation, the Division of Nutrition and Physical Activity, and the Division of Adolescent and School Health.
4770 Buford Highway, NE
Atlanta, GA 30341
Toll-free: 1-800-311-3435
www.cdc.gov

Division of Diabetes Translation

Toll-free: 1-877-CDC-DIAB (1-877-232-3422)
www.cdc.gov/diabetes

Division of Nutrition and Physical Activity

www.cdc.gov/nccdphp/dnpa

Division of Adolescent and School Health

www.cdc.gov/nccdphp/dash

Disability Rights Education and Defense Fund (DREDF)

DREDF is a national law and policy center dedicated to protecting and advancing the civil rights of people with disabilities through legislation, litigation, advocacy, technical assistance, and education and training of attorneys, advocates, persons with disabilities, and parents and children with disabilities.

2212 Sixth Street
Berkeley, CA 94710
Phone: (510) 644-2555
www.dredf.org

Diabetes Exercise and Sports Association

This nonprofit service organization is dedicated to enhancing the quality of life for people with diabetes through exercise.
1647-B West Bethany Home Road
Phoenix, AZ 85015
Toll-free: 1-800-898-4322
www.diabetes-exercise.org

Educational Resources Information Center (ERIC)

The ERIC is a federally funded, nonprofit information network designed to provide ready access to education literature for teachers and parents.
1307 New York Avenue, NW, Suite 300
Washington, DC 20005-4701
Toll-free: 1-800-822-9229
www.eric.ed.gov

Indian Health Service (IHS)

IHS National Diabetes Program
The mission of the IHS is to develop, document, and sustain a public health effort to prevent and control diabetes in American Indian and Alaskan Native communities.
5300 Homestead Road, NE
Albuquerque, NM 87110
Phone: (505) 248-4182
www.ihs.gov

Joslin Diabetes Center

The Joslin Diabetes Center and its affiliates offer a full range of services for children and adults with diabetes, including programs to help youngsters with diabetes and their families to better manage the disease.
1 Joslin Place
Boston, MA 02215
Toll-free: 1-800-JOS-LIN1 (1-800-567-5461)
www.joslin.harvard.edu

Juvenile Diabetes Research Foundation International (JDRF)

The mission of JDRF is to find a cure for diabetes and its complications through the support of research.
120 Wall Street
New York, NY 10005-4001
Toll-free: 1-800-533-CURE (1-800-533-2873)
www.jdrf.org

Lawson Wilkins Pediatric Endocrine Society (LWPES)

The LWPES is a membership organization that promotes the acquisition and dissemination of knowledge of endocrine and metabolic disorders from conception through adolescence. The LWPES website provides links with information about diabetes in children and adolescents.
867 Allardice Way
Stanford, CA 94305
Phone: (650) 494-3133
www.lwpes.org

National Association of Elementary School Principals (NAESP)

The NAESP promotes advocacy and support for elementary and middle level principals and other education leaders in their commitment to all children.
Linkages to Learning
1615 Duke Street
Alexandria, VA 22314
Toll-free: 1-800-38-NAESP (1-800-386-2377)
www.naesp.org

National Association of School Nurses (NASN)

The NASN is a nonprofit organization that represents school nurses; it offers continuing education, issues briefs, holds an annual conference, provides legislative updates and position statements, and other materials.
1416 Park Street, Suite A
Castle Rock, CO 80109
Toll-free: 1-866-NASN-SNS (1-866-627-6767)
www.nasn.org
For information about the National Association of School Nurses' and the Pediatric Adolescent Diabetes Research Foundation's "P.E.D.S." (Pediatric Education for Diabetes in Schools) training workshop and manual, contact NASN.

National Association of Secondary School Principals (NASSP)

The NASSP is a membership organization of middle level and high school principals, assistant principals, and aspiring school leaders from across the United States and around the world. NASSP's motto is "promoting excellence in school leadership," and the association provides members with various programs and services to guide them in administration, supervision, curriculum planning, and staff

development to achieve that goal.
1904 Association Drive
Reston, VA 20191
(703) 860-0200
www.principals.org

National Association of State Boards of Education (NASBE)

The NASBE is a nonprofit association that represents state and territorial boards of education. NASBE's principal objectives include strengthening state leadership in educational policymaking, promoting excellence in the education of all students, advocating equality of access to educational opportunity, and assuring continued citizen support for public education.

277 South Washington Street, Suite 100
Alexandria, VA 22314
Phone (703) 684-4000
www.nasbe.org

National Center on Physical Activity and Disability (NCPAD)

The NCPAD provides information about current research, local programs, adapted equipment, recreation and leisure facilities, and many other aspects of physical activity for persons with disabilities, including children and adolescents with diabetes.

1640 West Roosevelt Road
Chicago, IL 60608
Toll-free: 1-800-900-8086
www.ncpad.org

**National Education Association (NEA)
Health Information Network**

The NEA Health Information Network is the nonprofit health affiliate of the National Education Association, the nation's largest labor organization representing 2.3 million public school employees. The mission of the NEA Health Information Network is to ensure that all public school employees, students, and their communities have the health information and skills to achieve excellence in education.

1201 16th Street, NW
Suite 521
Washington, DC 20036-3290
Phone: (202) 833-4000
www.neahin.org

**National Information Center for Children
and Youth with Disabilities**

This national information and referral clearinghouse on special education and disability-related issues provides information about local, state, or national disability groups and gives technical assistance to parents and professionals.

P.O. Box 1492
Washington, DC 20013-1492
Toll-free: 1-800-695-0285
www.nichcy.org

**National Institute of Child Health and Human
Development (NICHD), National Institutes of Health**

The NICHD conducts and supports laboratory, clinical, and epidemiologic research on the reproductive, neurobiologic, developmental, and behavioral processes that determine and maintain the health of children, adults, families, and populations.

31 Center Drive, MSC 2425
Bethesda, MD 20892-2425
Phone: (301) 496-5133
www.nichd.nih.gov

**National Institute of Diabetes and Digestive and Kidney
Diseases (NIDDK), National Institutes of Health**

The NIDDK conducts and supports research on many of the most serious diseases affecting public health. The Institute supports much of the clinical research on the diseases of internal medicine and related subspecialty fields as well as many basic science disciplines.

National Diabetes Education Program (NDEP)

The NDEP is a federally sponsored program of the National Institutes of Health and the Centers for Disease Control and Prevention, involving over 200 public and private partners to improve diabetes treatment and outcomes for people with diabetes, promotes early diagnosis, and prevent diabetes.

1 Diabetes Way
Bethesda, MD 20892-3600
Toll-free: 1-800-438-5383
www.ndep.nih.gov

National Diabetes Information Clearinghouse (NDIC)

The NDIC is a service of the National Institute of Diabetes and Digestive and Kidney Diseases that provides information about diabetes to people with diabetes, their families, healthcare professionals, and the public.

1 Information Way
Bethesda, MD 20892-3560
Toll-free: 1-800-860-8747
www.niddk.nih.gov

Pediatric Endocrinology Nursing Society (PENS)

The PENS is a nonprofit professional nursing organization with the goal of advancing pediatric endocrine nursing. Its website features articles about diabetes-related topics, including insulin pump therapy, obesity in children and development of a pediatric diabetes education program for home health nurses.

P.O. Box 2933
Gaithersburg, MD 20886-2933
Phone: Not available. All contact is through mail or email.
Email: Through website under Contact PENS.
www.pens.org

U. S. Department of Agriculture (USDA)

The USDA supports several programs of importance to students with diabetes: the Center for Nutrition Policy and Promotion, the Food and Nutrition Information Center and the Food and Nutrition Service.
www.usda.gov

Center for Nutrition Policy and Promotion

www.usda.gov/cnpp

Food and Nutrition Information Center

www.nal.usda.gov/fnic

Food and Nutrition Service

www.fns.usda.gov/fns

U.S. Department of Education

The mission of the Department of Education is to ensure equal access to education and to promote educational excellence throughout the nation.

400 Maryland Avenue, SW
Washington, DC 20202

Office for Civil Rights (OCR)

Toll-free: 1-800-421-3481
TTY: 1-877-521-2172
www.ed.gov/ocr

Office of Special Education Programs (OSEP)

Phone: (202) 205-5507
TTY: (202) 205-5637
www.ed.gov/offices/OSERS/OSEP

State Resources**Pennsylvania Department of Education**

The mission of the Department of Education is to lead and serve the educational community to enable each individual to grow into an inspired, productive, fulfilled, lifelong learner.
333 Market Street
Harrisburg, PA 17126
717-783-6788
www.pde.state.pa.us

School Local Team Nutrition and Local Wellness Program

Through its Team Nutrition and Local Wellness Program, the Pennsylvania Department of Education is helping all local school districts develop sound practices that support the availability of healthy school nutrition plans, known as wellness policies. This work is supported through a partnership between the Department of Education and Project PA (itself a collaboration with Penn State University), the Pennsylvania School Boards Association (PSBA), and Pennsylvania Action for Healthy Kids, with additional support from other organizations.

Pennsylvania Department of Health

The mission of the Department of Health is to promote healthy lifestyles, prevent injury and disease, and to assure the safe delivery of quality healthcare for all Commonwealth citizens.
Health and Welfare Building
625 Forster Streets
Harrisburg, PA 17120
1-877-PA-HEALTH
www.health.state.pa.us

Diabetes Prevention and Control Program

DPCP strives to reduce the burden of diabetes in Pennsylvania and improve the quality of life of those Pennsylvanians having diabetes by preventing and controlling its complications.

www.health.state.pa.us/diabetes

School Health Program

The School Health Program facilitates the healthy growth and development of children of school age in Pennsylvania. The School Health Program serves all children of school age attending public and non-public schools in Pennsylvania. This program prevents and detects health problems, and maintains and improves the health status of students.

www.health.state.pa.us/schoolhealth

c-paschool@state.pa.us

Special Kids Network (SKN)

SKN works in Pennsylvania communities with local service providers, coalitions, and community groups to create or improve services for children with special healthcare needs. The program provides technical assistance and assistance to families through service coordination. SKN also administers a toll-free helpline for Pennsylvania's children with special healthcare needs and their families: 1-800-986-4550, TTY 1-877-232-7640.

Pennsylvania Advocates for Nutrition and Activity (PANA)

Established by the Pennsylvania Department of Health and supported by funding from the Centers for Disease Control and Prevention, PANA facilitates the implementation of Pennsylvania's Nutrition and Physical Activity Plan to Prevent Obesity and Related Chronic Diseases, published in 2003 by the Pennsylvania Department of Health. PANA works collectively to make it easier to be healthy in the places we live, learn, work, and play by changing environments to support healthier eating and physical activity options.

Dept. of Public Health Sciences, A210

Penn State University, College of Medicine

600 Centerview Dr., Suite 2200

Hershey, PA 17033

717-531-1440

www.nrgbalance.org

Pennsylvania School Board Association

The mission of the Pennsylvania School Boards Association is to promote excellence in school board governance through leadership, service, and advocacy for public education.

PO Box 2042

Mechanicsburg, PA 17055

717-506-2450

<http://www.psba.org/>

Pennsylvania State Board of Nursing

The State Board of Nursing establishes rules and regulations for the licensure and practice of professional and practical nursing in the Commonwealth of Pennsylvania.

P.O. Box 2649

Harrisburg, PA 17105-2649

717-783-7142

<http://www.dos.state.pa.us/bpoa/cwp/view.asp?a=1104&q=432883>

Pennsylvania State Nurses Association

The PA State Nurses Association, a professional organization, advances the identity, integrity, and continuity of the nursing profession by: providing access to education and improving knowledge and skills; advocating and supporting the nursing profession with Commonwealth policymakers, legislators, and regulators; and offering valued information and services for professional practice.

2578 Interstate Drive, Suite 101

Harrisburg, PA 17110

1-888-707-7762

<http://www.panurses.org>

Education Law Center

ELC is a non-profit legal advocacy and educational organization, dedicated to ensuring that all of Pennsylvania's children have access to a quality public education.

<http://www.elc-pa.org>

Parent to Parent of Pennsylvania

The program matches parents and family members of children and adults with disabilities or special needs to supporting parents on a one-on-one basis according to condition or concerns.

1-888-727-2706

<http://www.parenttoparent.org>

