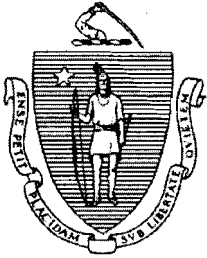


The Massachusetts Guide to Managing Diabetes in Schools



Massachusetts Department of
**ELEMENTARY & SECONDARY
EDUCATION**



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October 25, 2011

Dear Superintendents and Other Interested Parties:

The number of students with diabetes has increased substantially over the past three years. Based on updated data from the National Institute for Health, about 215,000 people younger than 20 years of age have type 1 or type 2 diabetes, representing 0.26 percent of all people in this age group in 2010. As with all children with special dietary needs, it is important that students with diabetes are able to access all education and education-related benefits. Because of the disabling effects of diabetes and the increasing prevalence, school districts and individual schools are challenged to be ready for the entry of students with diabetes by making accommodations related to the school environment and other school and education activities.

To assist schools in developing and implementing policies and comprehensive protocols for care of students with diabetes, the Massachusetts Department of Elementary and Secondary Education collaborated with the Massachusetts Department of Public Health, School Health Services, and a working group to develop this publication, *The Massachusetts Guide for Managing Diabetes in Schools*. The working group included recognized professionals in the area of diabetes management and education, school nutrition services, school nurses and health services, parents and health care providers. The group worked diligently to create a document that provides background information and practical application regarding managing students with diabetes in schools.

This guidance focuses on a team approach for addressing diabetes and provides information on how to manage this disease throughout the school day and in the school environment, as well as school related activities. Also included is an introduction on diabetes, with tools to provide all members of the school team with strategies to help students gradually assume responsibility for their care.

Although this document covers several aspects of the school environment and best practices, each school district will need to address the needs of students with diabetes. Hopefully this guidance will assist you as you work on this important effort to provide students with diabetes with a quality education.

Sincerely,

Mitchell D. Chester, Ed.D.
Commissioner
Massachusetts Department of
Elementary and Secondary Education

John Auerbach
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Massachusetts Department of
Public Health

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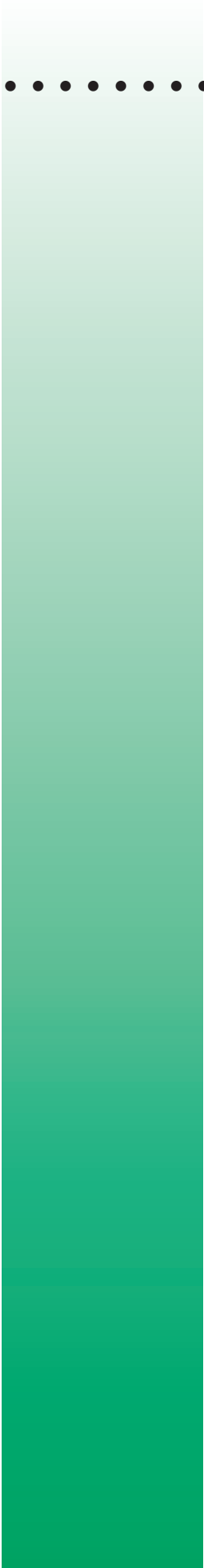


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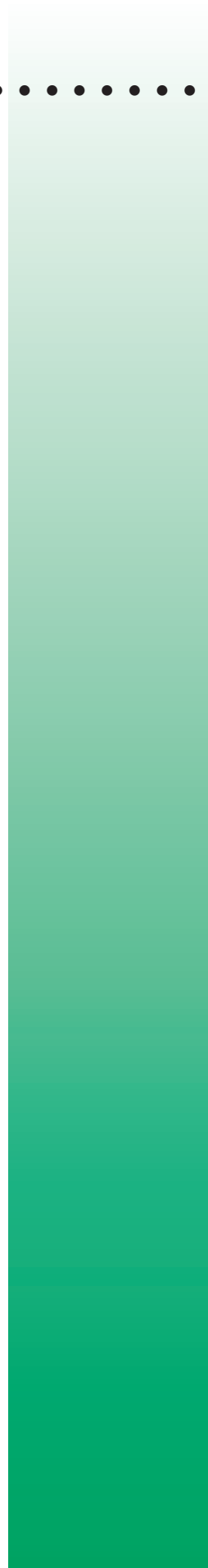
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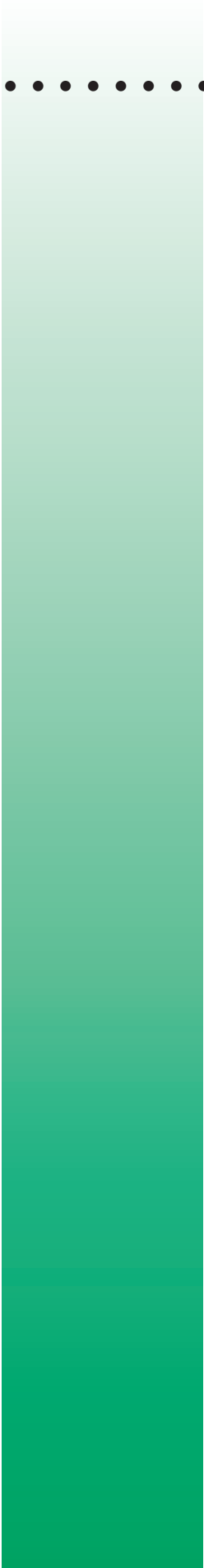
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BACKGROUND

Development of these guidelines was a result of a collaborative effort of the Massachusetts Department of Elementary and Secondary Education, Office for Nutrition, Health and Safety Programs; the Massachusetts Department of Public Health, School Health Services; the Massachusetts School Nurse Organization; the School Nutrition Association of Massachusetts and parents/guardians of children with diabetes. Information and advice on this project was provided by the Children’s Hospital, Boston, the Joslin Diabetes Center, Boston and Harvard Medical School, Boston and the University of Massachusetts Medical Center.

The Massachusetts Guide for Managing Diabetes in Schools addresses current practices for accommodating students with diabetes. Portions of the text have been adapted with approval from the National Diabetes Education Program, a joint program of the National Institutes of Health and the Centers for Disease Control and Prevention, *Helping the Student with Diabetes Succeed- A Guide for School Personnel* (www.ndep.nih.gov).

Other resources include:

- Helping Administer to the Needs of the Student with Diabetes in Schools, National Association of School Nurses (2008).
- Massachusetts Comprehensive School Health Manual, Massachusetts Department of Public Health (2007).
- Joslin’s Guideline for Detection and Management of Diabetes in Pregnancy, Joslin Diabetes Center, Inc., Boston (2010).

GOALS OF THE GUIDELINES

The goals for the care of students with diabetes in the school setting are twofold:

- (1) to ensure the proper medical management and safety of the student, minimizing the possibility that diabetes related emergencies might disrupt his/her educational and classroom activities and
- (2) to facilitate self-management so that the student may gradually assume responsibility for his/her care.

Achieving these goals requires the collaboration of the parents/guardians, the student, the primary care provider, endocrinologist, the school nurse and other members of the school staff. **Having a full-time nurse in schools with students with diabetes needs to be considered for successful pre-entry planning, coordination and safe management of care that will enable each student with diabetes to participate fully in all school activities.**

These guidelines include:

- The systematic planning and multi-disciplinary team approach needed to provide proper medical management and safety for the students with diabetes:
 - The school nurse is responsible for developing the student's Individual Health Care Plan (IHCP) in collaboration with the student, parent/guardian, student's primary care provider and other school staff.
 - The student's IHCP should include as applicable, information from the Diabetes Medical Management Plan (DMMP), Diabetes Emergency Action Plan (DEAP), and Individualized Education Plan (IEP), as well as documents such as plans for events outside the usual school day and protocols for the appropriate disposal of materials that come in contact with blood.
- Detailed policies and protocols addressing the school's role in managing diabetes in a variety of settings to minimize diabetes-related emergencies and help ensure that students with diabetes are ready to learn and participate fully in school activities.
- Guidelines for students, parents/guardians and specific personnel in the care of the student with diabetes:
 - Students with diabetes are encouraged to transition to the performance of self-care.
 - Parents/guardians of students with diabetes (and the student) are encouraged to be actively involved in assisting the school nurse and other school personnel with ensuring the student's success at school.
 - All school staff with responsibilities for students with diabetes should be educated about diabetes, the symptoms and treatment of hypoglycemia and hyperglycemia, and responding to emergencies.

- Compliance with 105 CMR 210.000 Administration of Prescription Medications in Public and Private Schools and Chapter 71 Section 54B.
- Resources to support the care of students with diabetes in the school setting and help ensure that students with diabetes can participate fully in the school learning environment.

To develop a plan to address the management of a student with diabetes in the school setting, parents/guardians and students should:

1. Contact the school nurse and building principal to resolve any issues.
2. Contact the school nursing leader/manager in the school district.
3. If there is no nursing leader/manager, contact the superintendent.
4. If questions persist and/or further consultation is desired, call
 - The Massachusetts Department of Public Health, School Health Unit (617-624-6060)
 - The Massachusetts Department of Elementary and Secondary Education, Office for Nutrition, Health and Safety Programs for information on the school nutrition programs (781- 338-6480)
 - The Massachusetts Department of Elementary and Secondary Education, Program Quality Assurance for information on IEPs or 504 plans (781) 338-3737)

In addition, information relating to diabetes care in school settings may be obtained from the National Diabetes Education Program (a partnership of the National Institutes for Health and the Centers for Disease Control and Prevention) at www.ndep.nih.gov.

From Guidelines for the Care of Students with Diabetes and Their Self-management in the School Setting, Massachusetts Department of Public Health 8-08.

REGULATIONS GOVERNING THE ADMINISTRATION OF MEDICATIONS IN SCHOOL SETTINGS

The Massachusetts Department of Public Health oversees regulations governing the administration of medications to children in school settings.

105 CMR 210.000 provides minimum standards for the safe and proper administration of prescription medications to students in the Commonwealth's public and private primary and secondary schools. 105 CMR 210.000 permits school nurses to delegate responsibility for administration of prescription medications to trained, nursing-supervised school personnel, provided the school district or private school registers with the Department of Public Health. The aim of 105 CMR 210.000 is to ensure that students requiring prescription medication administration during the school day will be able to attend school and to ensure that prescription medications are safely administered in schools. 105 CMR 210.000 encourages collaboration between parents or guardians and the school in this effort.

In 2005, Mass. General Laws Chapter 71, Section 54B (administration of medications in school settings) was amended to add the following statement: "Notwithstanding any general or special law or regulation to the contrary, no school district shall prohibit students with diabetes from possessing and administering glucose monitoring tests and insulin delivery systems, in accordance with Department of Public Health regulations concerning students' self-administration of prescription medications."

Schools must follow the self-administration regulations (105 CMR 210.006) in this special situation.

<http://www.mass.gov/eohhs/docs/dph/regs/105cmr210.pdf>

WHAT IS DIABETES?

Diabetes is a chronic disease in which the body does not make or properly use insulin. Insulin is a hormone produced by the pancreas that is needed to convert sugar and starches into energy for the body. People with diabetes have increased blood glucose (sugar) levels because they lack or have insufficient insulin or are resistant to insulin's affects. 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.

Diabetes is one of the most common chronic diseases in school-aged children.

- Annually about 215,000 people younger than 20 years have diabetes, representing 0.2% of all people in this age group.
- The rate of new cases among youth ages younger than 10 years, was 19.7 per 100,000 each year for type 1 diabetes and 0.4 per 100,000 for type 2 diabetes. The rate of new cases among youth ages 10 years or older was 18.6 per 100,000 each year for type 1 diabetes and 8.5 per 100,000 for type 2 diabetes. (http://diabetes.niddk.nih.gov/DM/PUBS/statistics/#d_allages)
- The 2009-2010 prevalence for Massachusetts is estimated at 0.35 percent in children in kindergarten through eighth grade. (<http://www.mass.gov/eohhs/docs/dph/com-health/school/eshs-report-09-10.pdf>)

Conditions that may be associated with a predisposition to develop diabetes include:

- Cystic Fibrosis
- Celiac disease
- Other autoimmune conditions
- Family history of autoimmune conditions and type 2 diabetes
- Taking steroids for medical conditions (i.e. cancer treatment, transplants, asthma)
- Obesity
- Pregnancy

There are many types of diabetes that affect children. The most common types seen in school settings include:

- Type 1 (formerly called “Insulin-Dependent” or “Juvenile-Onset”) Diabetes Mellitus
- Type 2 (formerly called “Non-Insulin Dependent” or “Adult-Onset”) Diabetes Mellitus
- Pre-Diabetes
- Gestational Diabetes (May affect teens who are pregnant)

TYPE 1 (INSULIN-DEPENDENT) DIABETES MELLITUS

Type 1 diabetes was formerly referred to as “insulin-dependent” or “juvenile-onset” diabetes mellitus. This type of diabetes is considered a disease of the immune system because the immune system destroys the cells in the pancreas that produce the hormone insulin. People with type 1 diabetes must inject insulin every day because their bodies cannot produce insulin. It needs to be injected under the skin to be absorbed; it cannot be taken by mouth because it would not be effective.

- Type 1 diabetes can occur at any age but it occurs most often in children and young adults.
- The exact cause of type 1 diabetes is still not known.
- Type 1 diabetes cannot be prevented and is not the result of eating or drinking too much sugar.

Symptoms

Common symptoms include increased thirst and urination, constant hunger, weight loss, blurred vision, or fatigue. If not diagnosed and treated with insulin injections, the symptoms will worsen and lead to a life threatening condition known as diabetic ketoacidosis (DKA).

TYPE 2 (NON-INSULIN DEPENDENT) DIABETES MELLITUS

Type 2 diabetes was formerly referred to as “non-insulin dependent” or “adult-onset” diabetes mellitus. People with type 2 diabetes produce insulin, but the cells of the body do not respond normally to the insulin. This is referred to as insulin resistance.

Type 2 diabetes can often be managed with diet and exercise, but some students also need medications taken by mouth (oral hypoglycemic agents), insulin injections or both, to help glucose enter their cells.

- Type 2 diabetes is sometimes found in overweight pre-teens and teenagers. As more children and adolescents in the US become overweight and inactive, type 2 diabetes is occurring more often in young people.
- Type 2 diabetes runs in families.

Symptoms

Initially there may not be any symptoms; however, sometimes during a routine physical exam, glucose is found in the urine. Thirst and frequent urination may be absent or mild. If symptoms are present they may include: darkening of skin folds (acanthosis nigricans), fatigue, nausea, frequent infections (i.e. yeast or skin), and wounds that may be slow to heal. Other symptoms may include weight loss, blurred vision, or frequent eyeglass prescription changes.

PRE-DIABETES

Pre-diabetes is a condition in which blood glucose levels are higher than normal, but not yet high enough to be classified as diabetes. Before people develop type 2 diabetes, they almost always have pre-diabetes.

Symptoms

People with pre-diabetes usually do not have any symptoms. If symptoms are present, they are the same as for type 2 diabetes, unusual thirst, a frequent desire to urinate, blurred vision, or fatigue. Blood glucose levels are higher than normal (fasting range 100 to 125).

GESTATIONAL DIABETES

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

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

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

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

Symptoms

Generally there are no symptoms; gestational diabetes is diagnosed with a routine screening test done at the prenatal visits.

¹Copyright © 2010 by Joslin Diabetes Center, Inc. (www.joslin.org). All rights reserved. Reprinted with permission from Joslin's Guideline for Detection and Management of Diabetes in Pregnancy (https://www.joslin.org/joslin_clinical_guidelines.html).

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.

Blood glucose control helps to promote normal growth and development and allows for optimal learning. Effective diabetes management is needed to prevent the immediate dangers of blood glucose levels that are too high or too low. 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, and exercise and insulin make blood glucose levels go down. Several other factors, such as growth and puberty, mental stress, illness, or injury also can affect blood glucose levels.

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

Blood glucose levels need to be monitored throughout the day. If blood glucose levels are too low (hypoglycemia) or too high (hyperglycemia), corrective action needs to be taken such as eating, modifying activity level, or administering insulin.

Low blood glucose levels, which can be life-threatening, present the greatest immediate danger to students with diabetes.

A student's ability to care for his or her diabetes is based on age, developmental level, and experience. The school nurse, working in collaboration with the student and family, is the most appropriate person in the school setting to provide care for a student with diabetes. The school nurse is responsible for developing the student's individual health care plan (IHCP), 504 plan and the Diabetes Emergency Action Plan (DEAP). (See Appendix H for a sample IHCP and Appendix I for a sample DEAP.)

Every school building where a student with diabetes is enrolled should have an appropriately licensed school nurse available throughout the school day.

The American Diabetes Association recommends that the child who is living with diabetes has a minimum of four visits each year with their Diabetes Medical Management Team (DMMT). Newly diagnosed students initially may need more frequent visits. Children with diabetes are more likely to succeed in school when students, parents/guardians, school nurses, principals, teachers, school nutrition personnel, other school staff, and the student's health care providers work together to ensure effective diabetes management.

Elements of Effective Diabetes Management

- **Monitoring blood glucose**
- **Understanding hypoglycemia**
- **Understanding hyperglycemia**
- **Administering medications**
- **Following an individualized meal plan**
- **Getting regular physical activity**
- **Dealing with emotional and social issues**
- **Planning for disasters and emergencies**

BLOOD GLUCOSE MONITORING

One of the most important tools of diabetes management is regular monitoring or checking of blood glucose levels by using a blood glucose meter. Monitoring involves pricking the skin with a lancet at the fingertip, forearm, or other test site to obtain a drop of blood and placing the drop on a special test strip that is inserted in a glucose meter. The meter gives the current blood glucose level.

The student's physician determines an individualized target blood glucose range. The range will be identified in the student's Diabetes Medical Management Plan (DMMP) provided by the diabetes medical management team. This information will be outlined in the student's Individualized Health Care Plan (IHCP) as well as the Diabetes Emergency Action Plan (DEAP). Physicians generally recommend that students check their blood glucose during the school day, usually before eating snacks or lunch, before physical activity, or when there are symptoms of hypoglycemia or hyperglycemia. In young children, symptoms may be subtle; blood glucose should be checked whenever symptoms are suspected. Many students can check their own blood glucose level; all students need some level of supervision with this and others will need to have this task performed by a school nurse.

Students Usually Check Their Blood Glucose

- Before eating snacks or meals
- Before physical activity
- When they have symptoms of high or low blood glucose
- Prior to leaving for the day

It is critical 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. Students should be able to check blood glucose levels and take corrective action immediately wherever they are. This is dependent on their level of ability and will be outlined in the IHCP and DEAP. Taking immediate action is important so that symptoms don't get worse and the student doesn't miss time in the classroom. It is essential that follow-up with the school nurse occur directly after any episode of hypoglycemia, or if the student displays symptoms of hyperglycemia.

Collaboration with all school staff is essential for the timely response to episodes of hypoglycemia and hyperglycemia to ensure a successful outcome for the student with diabetes.

Blood glucose monitoring does not present a danger to other students or staff members when the student has been educated and supervised to the proper technique for disposal of lancets and other materials that come into contact with blood. The student, family and school should agree on the plan, which should be consistent with standard precautions and local waste-disposal laws.

CONTINUOUS GLUCOSE MONITORING

Continuous Glucose Monitoring (CGM) is used to collect additional information for assessing blood glucose patterns of students with diabetes. With CGM an electronic sensor catheter is inserted under the skin. The sensor does not measure glucose levels in the bloods, but measures glucose levels in the fluid under the skin. CGM does not replace blood glucose monitoring by fingerstick testing. Fingerstick blood glucose monitoring is needed to calibrate these devices and to confirm high or low readings. CGM can be beneficial for students and parents/guardians who have the desire and skill to use the technology. The decision to use CGM should be discussed with the Diabetes Medical Management Team.

There are two types of CGM systems: retrospective and real-time. The retrospective system collects data for a number of days, only allowing the student and school nurse to view the data from the device. This information provides greater insight into the student's glucose pattern over a few days. The student and/or parent must keep detailed records of food intake, exercise and activity patterns, episodes of hypoglycemia and insulin dosing to help evaluate the glucose

pattern obtained. If the sensor catheter comes out, this ends the data collection and the sensor must be returned to the health care provider for downloading. A real-time CGM system allows the student to see glucose range information every few minutes while the student is wearing the device. This is done with a transmitter that contacts the sensor and sends glucose information to a receiver or monitor worn by the student. In some cases a student's insulin pump can function as a receiver. Real-time systems provide information to make more immediate decisions regarding the student's diabetes management. These CGM systems can be worn continuously or intermittently with the sensor catheter changed every few days. Replacement of a dislodged sensor catheter can be done at school or home. Real-time systems have the ability to set high and low alarms, alerting the student that his/her glucose level may be out of range.

UNDERSTANDING HYPOGLYCEMIA (LOW BLOOD GLUCOSE)

Hypoglycemia, also called “low blood glucose” or “low blood sugar,” is one of the most frequent complications of diabetes and can happen very suddenly. Hypoglycemia occurs when a student's blood glucose level falls too low, usually as a result of administering too much insulin, skipping or delaying meals or snacks, not eating enough food as prescribed in the meal plan, exercising too long or too intensely, or a combination of two or more of these factors. It is more likely to occur before lunch, at the end of the school day, or during or after physical activity.

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

- Administering too much insulin
- Skipping or delaying meals or snacks
- Not eating enough food as prescribed in the meal plan
- Exercising too long or too intensely
- Or a combination of two or more of these factors

Hypoglycemia usually can be treated easily and effectively. If it is not treated promptly, however, hypoglycemia can lead to unconsciousness and convulsions and can be life threatening. Early recognition of its symptoms and prompt treatment, in accordance with the student's DMMP, are necessary for preventing severe symptoms that may place the student in danger. Not all students, especially young children, will recognize its symptoms with every episode. Therefore, school personnel should be familiar with the symptoms and treatment so that an urgent problem can be handled appropriately. This information, contained in the DEAP, should be provided to all school personnel who have responsibility for the student with diabetes (See Appendix I for a sample DEAP).

When a student is experiencing hypoglycemia he/she should be never be left alone or sent anywhere without being supervised by an adult.

Hypoglycemia can impair thinking abilities and sometimes can be mistaken for misbehavior. If a student has a sudden change in behavior, becomes lethargic, combative, or unconscious, or is having a seizure or convulsion, presume that the student has hypoglycemia. Treat the situation as a hypoglycemic emergency and check the student's blood glucose level immediately. If a blood glucose meter is not available in the immediate area, or if the blood glucose level is otherwise unknown, treat the student for hypoglycemia.

HOW TO TREAT HYPOGLYCEMIA

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 ounce of regular (non-diet) soda

Severe Symptoms

- Contact the school nurse immediately. Position the student on his/her side.
- The school nurse will administer glucagon, as prescribed.
- Call 911.
- Call student's parents/guardians.

As soon as symptoms of hypoglycemia are observed, give the student a quick-acting sugar product, as specified in the DMMP and the DEAP. Recheck the student's blood glucose level 10 to 15 minutes after treatment. Repeat treatment if the blood glucose level still falls below the student's target range. If the next meal or snack is greater than 30 minutes from the hypoglycemic episode, provide a protein and carbohydrate as specified by the DMMP.

Symptoms of hypoglycemia, which are different for each student and may vary from episode to episode, can include:

Mild/Moderate Symptoms

- shaky
- dizzy
- disoriented
- lethargic
- sleepy
- inability to concentrate
- weak
- blurry vision
- changed personality
- hungry
- headache
- irritable or nervous
- sweaty
- confused pale
- uncoordinated
- changed behavior

Severe Symptoms

- inability to swallow
- having a seizure or convulsions
- unconscious

Severe hypoglycemia is rare at school if the care of the student with diabetes is managed by the school nurse. It generally can be prevented with prompt treatment when the early signs of low blood glucose are recognized. When hypoglycemia is severe, the school nurse must respond immediately. Symptoms may include an inability to swallow, unconsciousness, unresponsiveness, seizure activity, convulsions, or jerking movements. At this point, do not give the student food or a drink or put anything in his/her mouth because it could cause choking.

If a student becomes unconscious, or experiences convulsions or seizures, someone should position the student on his/her side to prevent choking. Immediately contact the school nurse, who will administer an injection of glucagon if indicated in the student's DMMP. While the glucagon is being administered, another school staff member should call for emergency medical assistance and then notify the parents/guardians. If the administration of glucagon is not authorized, staff should call 911 immediately.

Glucagon is a hormone that raises blood glucose levels by causing the release of glycogen (a form of stored carbohydrate) from the liver. It is also available as a medication that can be administered in an emergency 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 lifesaving treatment that cannot harm a student. The school nurse must have ready access to the glucagon emergency kit at all times.

UNDERSTANDING HYPERGLYCEMIA (HIGH BLOOD GLUCOSE)

Hyperglycemia, also called “high blood glucose,” is a serious complication of diabetes that 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, or decreased exercise or activity. High blood glucose symptoms include fruity breath odor, increased thirst, frequent urination, nausea, blurry vision, and fatigue.

Hyperglycemia Symptoms

- Fruity breath odor
- Increased thirst
- Frequent urination
- Nausea/vomiting
- Blurry vision
- Fatigue

In the short term, hyperglycemia can impair cognitive abilities and adversely affect academic performance. School staff should be aware that a student may need more frequent blood glucose monitoring to assure the student’s blood glucose is in target range for optimal performance during academic testing.

Hyperglycemia does not usually result in acute problems. If, however, the student fails to take insulin, if a pump malfunctions and delivers less insulin, or if either physical or emotional stress causes the insulin not to work effectively, there will be a breakdown of fat, causing ketones to form. While ketones, at first, will be cleared by the kidneys into the urine; if there are more than the kidneys can handle, they will build up in the blood and may result in diabetic ketoacidosis (DKA). This complication, if left untreated, will cause deep breathing and increasing sleepiness, and can result in death. Students who use insulin pumps can go into DKA within hours if their pumps stop delivering insulin appropriately. The school nurse should check the insulin delivery system for malfunction if signs of hyperglycemia should occur.

Diabetic ketoacidosis (DKA) is the most frequent cause of death in children with type 1 diabetes.

Diabetic ketoacidosis can be prevented if the student’s urine is checked for ketones during times of illness, especially if vomiting occurs, or whenever the blood glucose level exceeds the target range provided in the Diabetes Medical Management Plan (DMMP). The test involves dipping a special strip into the

urine and comparing the resulting color to a color chart. Ketones in the blood can also be tested with some blood glucose meters. Parameters for managing the presence of urine or blood ketones should be outlined in the DMMP.

Treatment of hyperglycemia may involve drinking extra water or diet drinks or administering supplemental insulin in accordance with the DMMP. If failure of the insulin delivery system is suspected, it should be corrected by the school nurse.

Free and unrestricted access to water and the restroom must be provided, as high blood glucose levels increase urination and may lead to dehydration if the student cannot replace the fluids.

The student's blood glucose level should be monitored closely until it returns to the target range, as outlined in the DMMP. If treatment does not lower blood glucose levels and ketones, if vomiting occurs, or if the student is lethargic or experiences breathing difficulties, call 911. Treatment guidelines for ketones and when to call parents/guardians should be listed in the student's DMMP. Information about the symptoms of hyperglycemia, contained in the DEAP, should be provided to all school personnel who have responsibility for the student with diabetes (See Appendix I for sample DEAP).

How to Treat Hyperglycemia

- Drink extra water or diet drinks
- Administer supplemental insulin
- Monitor blood glucose levels closely
- Check insulin delivery system

MEDICATIONS

INSULIN

Students with type 1 diabetes, and some students with type 2 diabetes, require insulin to be given at regular times each day. Some students may need additional or corrective dosages of insulin to treat hyperglycemia or to cover a rise in blood glucose levels. The Diabetes Medical Management Plan (DMMP) specifies the dosage, delivery system, and schedule for insulin administration, which will differ for each student. The IHCP, 504 and/or IEP which are based on the DMMP, will specify whether the school nurse or the student will administer the insulin.

What is Insulin?

- Insulin is a protein hormone, a chemical substance, made by the beta cells of the islets of Langerhans, located in the pancreas. The pancreas is an organ that lies behind the stomach.

Insulin is necessary to help glucose (sugar) enter the cells of the body. When glucose enters the cells, it can be used to produce energy or it can be stored in the liver and muscles (as glycogen) for later use.

When and how Insulin Works

It is important to know which insulin the student uses and understand when it works. This table shows the different kinds of insulin, when they start to work (**onset**), work hardest (**peak**), and the usual length of time (**duration**) the insulin works to lower the blood glucose level.

Type of Insulin	Onset	Peak	Duration
Rapid-acting (clear) Insulin Humalog [®] or NovoLog or Apidra	5 – 15 minutes after injection	1/2 – 1 ½ hours after injection	2 – 4 hours
Short-acting (clear) Regular	30 – 60 minutes after injection	2 – 3 hours after injection	6 hours
Intermediate-acting (cloudy) NPH	1 – 3 hours after injection	4 – 10 hours after injection	12 – 16 hours
Basal (clear) insulin Lantus [®]	2 hours after injection	No peak, main effect 2 – 22 hours	22 - 24 hours
Basal (clear) insulin Detemir or Levemir [®]	1 – 2 hours after injection	No peak, main effect 2 – 20 hours	20 hours

Insulin Actions

These tables show when each kind of insulin is working the hardest to move glucose from the blood into the cells of the body. The table also shows when to check the effect of insulin on the student's blood glucose level.

Morning Insulin Dose			
Insulin Type	Given When	Works Hardest	Time to Check Blood Glucose (to check effect of insulin)
Rapid-acting (clear) Insulin Apidra or Humalog® or NovoLog®	Before breakfast*	Between breakfast and morning snack	Before morning snack or before lunch
Short-acting (clear) Regular	Before breakfast*	Between breakfast and lunch	Before morning snack and/ or before lunch
Intermediate-acting (cloudy) NPH	Before breakfast	Between lunch dinner	Before afternoon snack and/ or before dinner

** To reduce the risk of low blood glucose level, some children who have variable and unpredictable eating behaviors may need rapid-acting insulin after their meals (the amount of insulin depends on how much carbohydrate the child actually ate).*

There are several types of insulin that are used in combination to treat students 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 is used to allow for adequate treatment of diabetes at meals, snacks, during periods of physical activity, and through the night.

Open vials of insulin should not be stored above 80°F. Insulin kept at room temperature will last approximately one month unless expressed otherwise by the manufacturer. Unopened vials of insulin should be stored in the refrigerator and are good until the expiration date.

ADMINISTRATION OF INSULIN

The three most common ways to administer insulin are with a syringe, an insulin pen, or an insulin pump.

Insulin syringes available today make it easier to draw up the proper dosage, and shorter, smaller needles make injections easier and relatively painless.

Insulin pens are available as two types. One looks like a fountain pen that holds a cartridge of insulin, which needs to be replaced. The other is a disposable unit.

An **insulin pump** is a computerized device that looks like a pager and is usually worn on the student's waistband or belt. The pump is programmed to deliver small, steady doses of insulin throughout the day and night; additional doses are given to cover food or high blood glucose levels. The pump holds a reservoir of insulin that is attached to a system of tubing called an infusion set. Most infusion sets are inserted 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. The cannula is usually changed every 2 or 3 days or when blood glucose levels remain above target range. Some insulin pumps have the capacity to monitor blood glucose levels.

The three most common ways to deliver insulin:

- insulin syringe
- insulin pen
- insulin pump

Some students who need insulin during the school day are able to administer it on their own; others will need nursing supervision; and others will need the school nurse to administer the insulin for them. The school nurse should provide this help in accordance with the DMMP and the IHCP. School personnel who are responsible for the student with diabetes should be aware of the student's insulin delivery system. Information about insulin administration should appear in the student's DMMP, IHCP, 504 plan and/or IEP.

105 CMR 210.00 regulates the administration of prescription medications in public and private schools.

GLUCAGON

Glucagon, a naturally occurring hormone, is also available as an emergency medicine used to treat severe hypoglycemia in people with diabetes who are not conscious or cannot take some form of carbohydrates by mouth. This medication is the same as the body's own glucagon and causes the body to release sugar stored in the liver. Although it may cause nausea and vomiting when the student regains consciousness, glucagon is a life-saving treatment that will not harm the student.

Never give anything by mouth to a student who is unconscious.

Every student who uses insulin must have a glucagon emergency kit on hand at all times to counteract severe hypoglycemia that causes loss of consciousness, or if carbohydrates cannot be given. This emergency kit should be supplied to the school by the student's parent/guardian. Glucagon may be stored at room temperature according to the manufacturer's directions. The school nurse must have ready access to the glucagon emergency kit at all times, including on field trips and during a disaster.

The glucagon kit contains a bottle (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 should not be mixed after the expiration dates printed on the kit and the vial. Check the date regularly and replace the medicine before it expires.

The dose of this medicine will be different for different students. Follow the doctor's orders as outlined in the Diabetes Medical Management Plan.

If the student experiences severe hypoglycemia and loses consciousness at school, if ordered, the school nurse must administer glucagon. Someone should position the student safely on his/her left side to protect them from injury and to prevent choking in the event of vomiting. Have another school staff member call 911 and the student's parent/guardian.

ORAL DIABETES MEDICATION

Type 2 diabetes may be managed with oral medication that is not insulin. This medication makes the student's body more responsive to either his or her own insulin or injected insulin. Metformin (Glucophage) is the medication of choice. This medication is usually administered before morning and/or evening meals. Potential side effects may include: bloating, nausea, diarrhea and upset stomach.

PLANNING

PLANNING FOR THE INDIVIDUAL STUDENT: ENTRY INTO SCHOOL

Prior to entry into school or for a student who is already in school, immediately after the diagnosis of diabetes the parent/guardian and student should meet with the school nurse assigned to the student's building to develop an IHCP.

The parent/guardian should work with the school to create a strategy for management of the child's diabetes. (See "Guidelines For the Parents/Guardians" for more detail.)

The parent/guardian shall provide the following:

- Physician documentation of diabetes.
- Physician order for insulin and delivery system (such as insulin syringe, insulin pen, insulin pump), glucagon, as well as orders for the treatment of hyper/hypoglycemia. These orders must be renewed at least annually.
- Parent/guardian's signed consent to share information with health care providers.
- Parent/guardian's signed consent to administer all medications.
- Parent/guardian's signed consent to share information with other school staff.
- All supplies needed; at a minimum, these would include, monitoring supplies (glucose meter, lancets, test strips for glucose and ketones, alcohol preps), treatment supplies (glucose tablets, fast-acting glucose, snacks water, juice), medication/supplies (insulin, syringes, pen), pump supplies (batteries, manual, infusion sets, skin prep wipes), glucagon kits.
- Summary of student's medical history related to diabetes, onset, treatment and student's symptoms of hyper/hypoglycemia.
- A description of the student's emotional response to the condition and need for support.
- Name/telephone number of the student's primary care provider and DMMT.
- Method to reach parent/parent designee should an emergency occur (e.g., cell-phone, telephone, beeper).
- Age-appropriate ways to include a student in planning for care and implementing the plan.
- Assessment for self-administration in collaboration with the DMMT.
- Parent/guardian's interest in participating in the training/orientation in the student's classroom.

The parent/guardian will complete with the school nurse and share all necessary emergency medical information with other adults responsible for the student outside the regular school day. (See Appendix J for Extra-Curricular Emergency Medical Information Form and Appendix K for School Bus Emergency Medical Information Form.)

The school nurse will:

- Initiate an Individual Health Care Plan (IHCP) based on the information provided by the parent, as well as the nurse's assessment. The plan shall include the student's name, method of identifying the student, the chronic health condition (diabetes), warning signs of hyper/hypoglycemia and emergency treatment. The plan must include, but not be limited to, risk reduction of hyper/hypoglycemic episodes and emergency response at the following times: (a) travel to and from school, (b) the school day, (c) before and after school programs, and field trips. The IHCP should be signed by the parent, the school nurse and student, if applicable. (See Appendix H for a sample IHCP.)
- Initiate a Diabetes Emergency Action Plan (DEAP) which will be accessible to appropriate school personnel responsible for the student (e.g., in the classroom, cafeteria). The DEAP should include the student's photo (with the permission of the parent/guardian), the student's name, warning signs of a hyper/hypoglycemic reactions and emergency management. The DEAP should be signed by the parent and school nurse. (See Appendix I for a sample DEAP.)
- Review with parent/guardian emergency medical information for both extra-curricular activities and time spent on a school bus.
- Complete a medication care plan, which should include plans for field trips or short-term special events, transportation, where emergency diabetes supplies are stored and how they should be monitored for currency. (**The Medication Plan shall be in accordance with 105CMR 210.000, The Administration of Prescription Medications within Public and Private Schools.**)
- Based on the student's age, class, etc., identify members of the multidisciplinary team. These may include but not be limited to the principal or designee, classroom teacher, student, school nutrition director/manager, counselor, school physician, physical education teacher, custodian, bus driver, local EMS, etc.
- Assess the student for his/her ability to perform diabetes monitoring and treatment independently, in a safe and appropriate manner, with nursing oversight.
- Determine the appropriateness for the student to carry his/her monitoring supplies.
- Provide information on the availability of a Medical Alert Bracelet.
- Provide education and consultation to appropriate school personnel concerning the IHCP.

MULTI-DISCIPLINARY TEAM APPROACH

1. The school nurse, collaborating with the parent/guardian, building principal and student's Diabetes Medical Management Team, as appropriate, shall determine the best way to promote a multi-disciplinary plan for the care of the student with diabetes.

This team may include but is not limited to:

- Administrative representative
 - School nutrition director and school-based staff
 - Teachers and specialists (e.g., art, music, science, computer, family and consumer sciences teachers)
 - School counselor
 - Physical education teacher
 - Coach
 - Custodian
 - Bus driver
 - Local Emergency Medical System (EMS)
 - Other learning support staff based on the student's curriculum and activities
 - Student with diabetes (if age appropriate)
2. The school nurse may meet individually with team members to assist them in preparing for their responsibilities and share those parts of this document that pertain to each staff member (Introduction, What is Diabetes, Guidelines for Individuals, Resources, etc).
 3. When the team meets:
 - the school nurse should give an overview of diabetes, signs and symptoms of diabetes; hyper/hypoglycemia; the student's Individual Health Care Plan (IHCP) and Diabetes Emergency Action Plan (DEAP)
 - the team should discuss the prevention and management of emergency diabetic situations. (See Appendix H for sample IHCP and Appendix I for sample DEAP.)

HEALTHY EATING AND THE STUDENT WITH DIABETES

The nutritional needs of a student with diabetes do not differ from the needs of a student without diabetes. Each individual should eat a variety of foods to maintain normal growth and development for his or her age. The major difference is that the timing, portion size, and content of the food that the student with diabetes eats are carefully matched to the action of the insulin.

With some insulin regimens, it is important to maintain consistent timing and carbohydrate content of meals and snacks. The student should eat breakfast and lunch at the same time each day. Snacks are often necessary for a child with diabetes and must be eaten to balance the peak times of medication/insulin action. Individualized meal planning is an essential part of achieving as normal blood sugar levels as possible. A responsible adult should be defined in the IHCP to monitor and evaluate implementation of the student's meal plan, and report any challenges to the school nurse.

A missed or delayed meal or snack could result in symptoms of hypoglycemia.

The student experiencing low blood sugar must have immediate access to a quick-acting form of glucose to treat the condition. The student's IHCP, 504 and/or IEP should address the need for consistency of meals and snacks and an alternative plan for unusual or unforeseen circumstances such as standardized testing, field trips, and unplanned events and emergencies.

The US Department of Agriculture (USDA) meal pattern requirements for school breakfast and lunch focus on foods that provide children of different ages with adequate calories and key nutrients such as protein, vitamin A, vitamin C, iron, and calcium. For schools participating in USDA child nutrition programs, meal patterns may be adapted to meet the student's IHCP with a physician's authorization.

The student's meal plan is designed to balance nutritional needs with the medication/insulin regimen and physical activity level.

Carbohydrate Counting

Counting carbohydrates is one way to account for different foods and offer flexibility in managing blood sugar levels. It involves calculating the number of grams of carbohydrate the student eats. Total grams of carbohydrate are used to determine the amount of insulin the student needs to control blood glucose for any given meal or snack. Since carbohydrates enter the bloodstream as glucose within 15 minutes to 2 hours, it is important to have an accurate determination of the carbohydrate content of a meal or a snack in order for the student to achieve desirable blood glucose levels. (See Appendix A for A Guide to Carbohydrate Counting.)

Exchange System

The exchange system is another approach that groups foods into six lists: bread/starch, fruit, milk, vegetables, meat/protein foods and fats. A meal plan is prepared that recommends several exchanges or servings from each food group for each meal and snack. The exchange list ensures that the meal plan is consistent in portion size and nutrient content while offering a variety of foods from each group. Students using this approach consume a prescribed number of exchanges at meal and snack times.

Food groups in the exchange guidelines, however, are based on set nutritional values that may be different from those used in USDA meal pattern requirements. For example, in USDA meal patterns foods such as corn, beans, legumes, any potato product, and most winter squashes count toward a serving of vegetables; in exchange guidelines, however, these vegetables count as starches or bread servings. Therefore, alternate menu items (with less starch) need to be planned to accommodate the needs of students with diabetes and follow instructions in the IHCP.

PHYSICAL ACTIVITY

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

Students with diabetes can safely participate in physical education classes and team sports. The student's IHCP should address specific instructions for physical activity.

To maintain blood glucose levels within their target ranges during extra physical activity, students will make adjustments in their insulin and food intake. To prevent hypoglycemia, they also need to check their blood glucose levels more frequently while engaging in physical activity.

Students using pumps may disconnect from the pump for sports activities. If they keep the pump on, they may set a temporary, reduced rate of insulin while they are playing. School personnel should provide the student with a safe location for storing the pump when the student does not wear it.

Ideal scheduling would provide for physical education periods at the same time each day so that food or insulin adjustments can be made appropriately. The need for additional snacks or food should be included in the DMMP. Having any physical activity just before lunch can be the most challenging because the morning meal may have begun to wear off and the likelihood of insulin-induced hypoglycemia is at its peak.

The student's IHCP should address specific instructions for physical activity. Physical education teachers and coaches should be able to recognize and assist with the treatment of hypoglycemia. A quick-acting source of glucose and the student's glucose meter should always be available, along with plenty of water.

PLANNING ACTIVITIES OUTSIDE OF SCHOOL

Students with diabetes can and have a right to participate in the same programs and services as their peers. These extracurricular school activities and learning opportunities may include:

- Before School Activities
- Afterschool Activities
- Field Trips
- Extended Travel Experiences
- Social Events (dances, proms, banquets)
- Team Sports Events
- Community Service Projects
- Internships

Parents/guardians, school nurses, teachers and/or individuals responsible for the program can assist in ensuring that learning objectives are met. Age-appropriate behavior, participation, and educational goals typically do not demand extraordinary adaptations due to diabetes. The family, school nurse, and administration should develop school policies that will assist in accommodating individual student's needs to ensure optimal diabetes management in the school-sponsored activities and events.

The individual planning the event is responsible for contacting the school nurse to insure that the parent/guardian and student with diabetes are included in the planning process.

The parent/guardian with the school nurse will complete all necessary emergency medical information and share with other adults responsible for the student participating in any event outside of the school or the regular school day. (See Appendix J for a sample Extra-Curricular Emergency Medical Information Form and Appendix K for a sample School Bus Emergency Medical Information Form.)

DEALING WITH EMOTIONAL AND SOCIAL ISSUES

Historically, it was thought that students who could handle a syringe and inject insulin, regardless of age, would be self-sufficient in managing their own diabetes. Today, a wide range of factors can impact overall diabetes management from the student's growth and development, food habits, activity levels, health status (including stress of illness/infection) to the integrity of injection sites and insulin expiration dates and storage. As understanding of these and other factors has evolved, emphasis in the pediatric health care community has shifted from a focus for the need for independence to interdependence and an appreciation of the need for support within the family and community to achieve optimal control. Although a student may be able to successfully mimic the steps involved in drawing and injecting insulin, she/he may be too young to appreciate importance of vial and syringe preparation on blood glucose.

Most children of all ages have a natural desire to please authority figures (parents/guardians, teachers, doctors, or nurses); the need for pleasing may outweigh the need for accurate reporting. Fear of disappointing or blame for a glucose level may contribute to inaccuracies in reporting of glucose data. Balancing diabetes care and management, school responsibilities, sports participation, and an active social life create a level of scheduling and commitment that can lead to burnout, depression and being overwhelmed when confronted with the added tasks associated with diabetes. Appropriate education about the purpose and value of checking blood glucose is needed for all students with diabetes.

A student with diabetes may find the management of his/her diabetes even more challenging as major shifts occur in growth and hormonal changes. Adolescent hormones can interfere with insulin sensitivity and effectiveness, requiring a level of attention to detail which may be opposite of values often associated with being a teen. The need for consistency of timing for insulin and food intake and activity levels may conflict with the spontaneity associated with adolescence. Newer insulin programs and delivery systems can help minimize some of the consequences of teenage spontaneity. At the same time, however, for a population not wanting to be different by having diabetes, these solutions may not achieve the ultimate goal of effectively managing diabetes. Involvement in support systems, such as a camp, support group, individual counseling, or community activities sponsored by the Juvenile Diabetes Research Foundation (JDRF) or American Diabetes Association (ADA) can provide students with tools they can use to deal with challenges of being a teen with diabetes.

The focus within today's medical community is to establish the following goals for effective diabetes management:

- Achievement of genetic potential for height and weight appropriate to stature.
- Absence of profound hyperglycemia (ketones, dehydration and diabetic ketoacidosis).
- Prevention of severe hypoglycemia (lack of consciousness and/or seizure).
- Normalization of lipids and blood pressure.
- Integration of diabetes into lifestyle that allows for a balance between diabetes tasks and achievement of normal growth and developmental markers appropriate to chronological age.

It is important to emphasize that students with diabetes are children with diabetes, NOT diabetic children. The success of diabetes management for these students depends on acknowledging the values of students at various stages of development as various diabetes tasks are integrated into the daily activities.

EMERGENCIES

THE DIABETES EMERGENCY ACTION PLAN (DEAP) FOR STUDENTS WITH DIABETES

An emergency involving a student with diabetes is defined as a student who is experiencing symptoms of either hypoglycemia or hyperglycemia.

Hypoglycemia is a condition that occurs when blood glucose (sugar) is too low. It occurs when:

- the blood glucose is used up too quickly
- the blood glucose is released into the bloodstream too slowly
- too much insulin is released into the bloodstream.

Causes include:

- too much insulin
- delaying or skipping a meal
- getting more exercise than usual
- illness (vomiting or diarrhea)
- hormonal influence

Hyperglycemia is a condition that occurs when there is excessive glucose circulating in the blood.

It occurs when there are low insulin levels. These low insulin levels inhibit the transport of glucose across cell membranes causing the blood levels to be high.

Causes include:

- too little insulin
- too much food
- illness
- stress, either physical or emotional

Every student with diabetes should have a Diabetic Emergency Action Plan (DEAP) that outlines their specific emergency response plan. This plan should include the following:

- An adult to remain with the student experiencing a diabetic emergency
- Emergency contact information for parent/guardian, health care provider, diabetes nurse educator
- Student specific symptoms for hypoglycemia or hyperglycemia
- Plan for notification of the school nurse to assess the student and provide treatment as indicated
- Plan for checking blood glucose and treating hyperglycemia/hypoglycemia
- Designated location for emergency supplies and glucagon
- If the student is unresponsive and/or unable to swallow due to hypoglycemia, the nurse will administer glucagon
- School nurse will contact the emergency care facility nurse and give a report

A sample DEAP can be found in Appendix I.

PLANNING FOR SCHOOL-WIDE DISASTERS AND EMERGENCIES FOR STUDENTS WITH DIABETES

The parent/guardian must provide an emergency diabetic supply kit in order for the school to be prepared to care for their child in the event of natural disasters, emergencies, when students need to stay at school, or be evacuated to another site. The school nurse should have an Individualized Health Care Plan (IHCP) that includes physician's orders for 72 hour insulin coverage.

This kit should include a copy of the student's DEAP and be accessible to the student at all times.

The emergency diabetic 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
- Ketone strips
- Insulin and supplies
- Insulin pump supplies, including syringes
- Other medications
- Antiseptic wipes
- Fast-acting source of glucose
- Carbohydrate and protein containing snacks
- Source of water
- Glucagon emergency kit

GUIDELINES

GUIDELINES FOR THE STUDENT

1. Always wear your medical alert identification.
2. Learn about diabetes and how it affects you.
3. Know your signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose).
4. Participate in school meetings to discuss your DMMP, IHCP, DEAP, 504 Plan, IEP, or other education plan, as appropriate.
5. Take an active role in the management of your diabetes at school as appropriate.

This may include:

- a. access to your diabetes equipment and supplies at all times
 - b. carrying a fast-acting source of glucose
 - c. checking and writing down blood glucose levels
 - d. reporting your blood glucose levels to the school nurse
 - e. eating meals and snacks as planned
 - f. calculating your insulin dose based on your carbohydrate intake
 - g. giving yourself insulin
 - h. disposing of needles, lancets, and other supplies safely
 - i. treating low blood glucose
 - j. telling school staff if you are not feeling well
6. Work with the school nurse to help educate classmates and other school members about diabetes.
 7. Tell your school nurse and/or teachers if you are having any problems managing your diabetes at school. This may include what to do when:
 - a. someone makes inappropriate comments
 - b. someone handles your supplies
 - c. unexpected food is offered during class, field trips or other school activities
 8. Respect the services and accommodations your school provides for you; use them appropriately and know how to ask for additional assistance as needed.

GUIDELINES FOR CLASSMATES

Note: Classmates should be informed about who in their class has diabetes only after permission has been granted from the parent and/or student.

1. Support and encourage any classmate who has diabetes, treating them the same as other classmates who do not have the disease, except to respond to medical needs.
2. Learn to recognize that changes in your classmate's behavior could be signs and symptoms of low or high blood glucose.
3. Know what adult in the school (school nurse, teacher, other school personnel) you need to tell immediately, if you notice a change in this classmate's behavior.
4. Always respect your classmate's confidentiality and privacy.
5. Be aware that your classmates with diabetes may need to take care of their diabetes in the classroom by checking their blood glucose or eating a snack at different times. Your classmates may need to drink more liquids or use the bathroom more often than other classmates. Try to be understanding.
6. In the case of an emergency, stay with your classmate with diabetes if directed by an adult, regardless of what this classmate asks you to do.

GUIDELINES FOR THE PARENTS/GUARDIANS OF A STUDENT WITH DIABETES

1. Make sure your child always wears his/her medical alert identification.
2. Learn about diabetes and how it affects your child.
3. Understand the federal, state, and local laws that address the school's responsibilities to students with diabetes.
4. Before the student enrolls or immediately after the student is diagnosed with diabetes, meet with the school principal and school nurse to notify them of the diagnosis and begin developing a plan to manage the child's diabetes in school.
 - a. Provide accurate and current emergency contact information.
 - b. Provide the signed DMMP to the school nurse and contact information for the prescribing physician.
 - c. Participate in developing an IHCP, DEAP, and 504 Plan (if applicable), with the school nurse.
 - d. Participate in developing extracurricular and school bus medical emergency forms with the school nurse. (See Appendix J and K for sample forms.)
 - e. Work with the school administrator to identify all staff who are involved with the child at school.
 - f. Sign permission for your child's photograph to be included on all documents. Clearly communicate that the school has permission to share needed medical information about your child with everyone who needs to know.
 - g. Permit sharing of medical information necessary for the student's safety between the school, DMMT and the student's personal health care providers.
5. Provide all supplies and equipment necessary for implementing your child's DMMP, 504 Plan, IEP, or other education plan, including blood glucose monitoring equipment, supplies for insulin administration and urine/blood ketone testing, snacks, fast-acting glucose, and a glucagon emergency kit. As appropriate, provide these supplies to school personnel.
6. Set up a system to alert you when supplies/snacks are getting low. Replenish as needed.
7. Provide and maintain all supplies and equipment necessary to accommodate the student's long term needs (72 hours) in case of an emergency.
8. Provide the school nurse with the carbohydrate count for each item when lunch or snack is brought from home.
9. Attend and participate in initial and annual meetings of personnel who have responsibility for the student to discuss any and all educational/medical management plans.

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10. Work with the administrator and the school nurse to provide information needed for educating school staff and classmates as appropriate.
 11. Work with the school staff to determine when and where testing should take place.
 12. Inform school nurse of any changes in the student's health status and/or medications.
 13. Inform appropriate school staff (principal, teachers, coaches, and others) when the student plans to participate in school-sponsored activities that take place before or after school so that health care coverage can be coordinated to ensure the health and safety of the student with diabetes.
 14. Distribute extracurricular and school bus medical emergency forms to appropriate staff.

As a parent/guardian of a student with diabetes, if you encounter challenges in the school that prevent your child from receiving adequate services in the school, you should:

1. Contact the school nurse and building principal to resolve any issues.
2. Contact the school nursing leader/manager in the school district.
3. If there is no nursing leader/manager contact the superintendent.
4. If questions persist and/or further consultation is desired call
 - The Massachusetts Department of Public Health School Health Unit (617-624-6060)
 - The Massachusetts Department of Elementary and Secondary Education, Program Quality Assurance for an IEP or 504 Plan question (781- 338-3737)

GUIDELINES FOR THE PHYSICIAN AND THE DIABETES MEDICAL MANAGEMENT TEAM

The physician will work with the Diabetes Medical Management Team in caring for and managing students with diabetes in the school setting:

As the individual who is ultimately responsible for the student's overall diabetes management, the physician has unique knowledge of the individual and family needs and plays a critical role in relaying that information to the school.

The physician will:

1. Document diagnosis of diabetes.
2. Consult in the development of the student's IHCP and DEAP.
3. Provide orders for the student's care during the school day. It is recommended that the order be from an endocrinologist. It needs to include:
 - a. Blood glucose testing
 - b. Ketone testing
 - c. Insulin administration
 - d. Insulin pump guidelines if student is on the pump
 - e. Glucagon administration
 - f. Nutrition requirements for daily meal plan
 - g. Guidelines for managing diabetes during physical activity
 - h. Student specific signs, symptoms, and prescribed treatment for hypoglycemia
 - i. Student specific signs, symptoms, and prescribed treatment for hyperglycemia
 - j. Guidelines for managing diabetes for 72 hours (during school wide emergency/disaster)
 - k. Any other order specific to the student with diabetes that is needed to maintain the health and safety of the child during the school day, so the student is able to participate in a full academic and extracurricular program
- l. Provide physician emergency contact information
- m. Renew orders at least annually


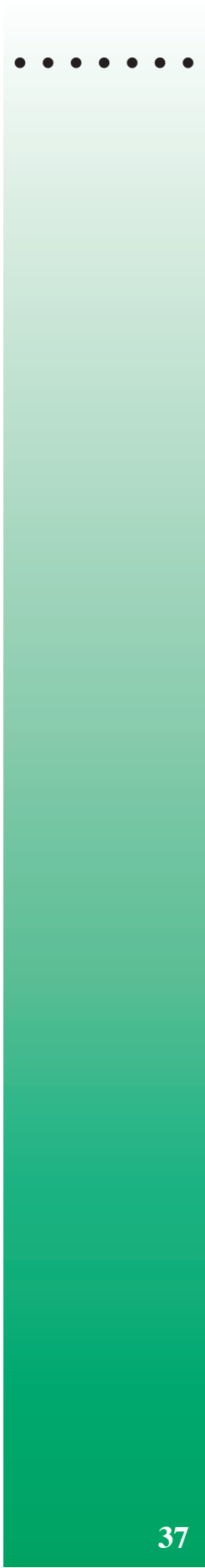


GUIDELINES FOR THE SCHOOL PHYSICIAN

1. Provide consultation on the development of the school district policy on the management of children with diabetes in the school setting.
2. Provide consultation to the school nurse, as needed, and in the development of the IHCP.
3. Act as liaison to the prescribing physician/pediatrician/endocrinologist as requested by the school nurse should issues arise.

GUIDELINES FOR THE SCHOOL ADMINISTRATION (OR DELEGATE)

1. Develop and implement an efficient system for informing the school nurse of the pending enrollment of a student with diabetes.
2. Recognize and support the school nurse's professional role as the manager for the care of the student with diabetes in the school setting in collaboration with the student's parents/guardians and the Diabetes Medical Management Team.
3. Arrange for an appropriately licensed school nurse to be available throughout the school day in every school where a student with diabetes is enrolled.
4. Become informed about diabetes, including the difference between Type 1 and Type 2.
5. Participate in the development and implementation of school policies that will assist in accommodating individual students' need for diabetes management at school consistent with the standards of care recommended for children with diabetes and federal and state law including confidentiality requirements.
6. Understand the federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act.
7. Develop school policies that will assist in accommodating individual students' needs to ensure optimal diabetes management in the classroom and at any school-sponsored activities and events.
8. Collaborate with the school nurse to develop and implement an efficient system of informing the school nurse and those who teach or supervise students of the pending enrollment of a student with diabetes as well as the return to school of a student who is newly diagnosed with diabetes.
9. Work with the school nurse to plan and provide training to all school and substitute personnel involved with students with diabetes that includes an overview of diabetes, signs and symptoms of hypoglycemia and hyperglycemia and knowing when to contact the school nurse.
10. Collaborate with the school nurse and DMMT to provide all school nutrition personnel with diabetes management training that includes an overview of diabetes and carbohydrate counting procedures.
11. Provide support to the school nurse by assigning an adult when indicated in the IHCP to monitor the student's food intake and report any decrease to the school nurse.
12. Support opportunities for the school nurse to attend professional development
13. programs to remain current in diabetic nursing care, management, laws and regulations.
14. Provide opportunities for all school personnel and students to have access to information on diabetes and its management in the school setting.

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- 
15. Support and facilitate ongoing communication between parents/guardians of students with diabetes and school personnel.
 16. Allocate sufficient resources to effectively manage students with diabetes.
 17. Include in the school's emergency response plan an outline of emergency procedures for ensuring the safety of students with diabetes in the event of a disaster. This planning should include procedures for the following:
 - a. Coverage by school nurse(s) to provide for the health care management of the students with diabetes and other illnesses when students are required to stay on site beyond the dismissal time.
 - b. Staffing by school nurses to accompany students who require management of their diabetes if the school evacuates students to another site.
 - c. Sufficient resources (such as food and water) are available to meet the needs of the individual student with diabetes for an extended period of time (generally considered to be 72 hours).
 - d. Emergency communication devices provided for all school activities, including transportation, that involve a student with diabetes.

GUIDELINES FOR THE SCHOOL NURSE

1. Assume responsibility for the management of the care of the student with diabetes in the school setting.
2. Function as a liaison between the school and the student's Diabetes Medical Management Team.
3. Obtain and review the student's DMMP prior to entry into school, annually, or return to school after the diagnosis of, or hospitalization with diabetes.
4. Meet and assess the student's and family's level of understanding of the management of his or her diabetes, the student's ability for self-management, as well as the supervision that may be required. Offer opportunities for parent support groups or networking with families of other students with diabetes.
5. Develop an Individual Health Care Plan (IHCP) and Diabetes Emergency Action Plan (DEAP), including a school bus and extracurricular medical emergency plans, consistent with the school district's emergency response in collaboration with the parents/guardians and the student, if appropriate. (See Appendix H, I, J and K for sample forms.)
6. Arrange and convene a team meeting (preferably before the opening of school or as soon as possible after diagnosis) to review and revise the IHCP and DEAP with all staff who come in contact with the student with diabetes, including but not limited to the school nurse, principal or designee, teacher, school nutrition personnel, specialists; and if appropriate, student, physician, para-educators, custodian, transportation personnel and local EMS.
7. Ensure that all substitute nurses are adequately prepared to care for students with diabetes in the school setting and have a copy of the current IHCP and DEAP.
8. Ensure that the DEAP includes the student's name, photo, symptoms of hyper/hypoglycemia, risk reduction procedures, emergency procedures, and required signatures.
9. Ensure that all IHCPs and DEAPs are maintained by the school nurse and are made available to school personnel as needed in accordance with the Family Education Rights and Family Act (FERPA).
10. Provide education and training for school personnel involved in the care of the student with diabetes including an overview of diabetes and its impact on learning, signs and symptoms of hyper/hypoglycemia, risk reduction procedures and emergency procedures.
11. Plan for education and training of new personnel and substitutes.
12. Ensure that all involved personnel have participated in training.
13. Follow-up with the parent/guardian after a team meeting to ensure that they have reviewed care plans and emergency procedures with their child.

14. Obtain all necessary supplies for the management of the student with diabetes and develop a plan for replenishment of supplies with the parent/guardian.
15. Periodically check medications and other equipment for expiration dates and proper storage.
16. Perform routine and emergency diabetes management including blood glucose monitoring, ketone testing, insulin administration, pump management, and glucagon administration. Provide supervision and monitoring to students who self-manage.
17. Review and evaluate the amount of food consumed by the student and estimate total carbohydrates consumed in that meal.
18. Ensure that students who are self-managing their diabetes adhere to standard precautions and infection control protocols.
19. Provide substitute personnel/teacher with a written plan for daily classroom management of students with diabetes. (See Appendix M for sample.)
20. Plan with parents/guardians to provide emergency supplies for the classroom including additional medication, snacks and equipment as necessary for school-wide emergencies such as lockdowns.
21. Review and evaluate after a diabetic emergency the effectiveness of the DMMP, IHCP and DEAP.
22. Support students' efforts in learning and performing diabetes management tasks, as determined by parent/guardian and DMMT.
23. Attend professional development programs to maintain up-to-date knowledge in the areas of clinical management, laws and regulations related to the nursing care of students who have diabetes.
24. Maintain accurate documentation that reflects the comprehensive management and care of the student with diabetes while adhering to laws and regulations concerning student confidentiality and privacy.
25. Make certain that emergency communication devices (e.g., walkie-talkie, intercom, cell phone, etc.) are always present and functional.

GUIDELINES FOR TEACHERS

1. Participate in team meeting(s) to review and revise the IHCP and DEAP for the student with diabetes to ensure that accommodations for these students are consistent with the standards of care recommended for children with diabetes and federal and state laws.
2. Participate in training on diabetes and your classroom responsibilities.
3. Know the signs and how to respond to hypoglycemia and hyperglycemia for your individual students with diabetes and know when to contact the school nurse.
4. Implement accommodations related to the student's IHCP, DEAP, 504 Plan or IEP, as applicable, to ensure optimal diabetes management at school. Provide a supportive environment and follow procedures, as appropriate, to allow students with diabetes to:
 - a. have access to their diabetes equipment and supplies.
 - b. test blood glucose levels in the classroom especially before exams and report the results to the school nurse.
 - c. administer insulin in the classroom and dispose of supplies safely.
 - d. have access to the school nurse for diabetes related issues.
 - e. eat meals and snacks as planned.
 - f. have a fast-acting source of glucose available in the classroom and for activities outside the classroom.
 - g. have unrestricted access to water and use of the bathroom.
 - h. safely participate in physical activities.
5. Notify parents/guardians and school nurse of any changes in class or physical activity schedule, field trips, class celebrations or other special events.
6. Inform the school nurse when a substitute teacher is planned.
7. Include the IHCP, DEAP and Classroom Management Plan in the substitute teacher's folder (see Appendix H, I and M for sample forms).
8. Follow the DEAP when the student is experiencing a low blood sugar. Never send the student to the school nurse alone.
9. Notify school nurse before any exam. Blood glucose testing is to be done prior to the exam; parameters are to be set with a maximum blood glucose result to allow exam participation.
10. Communicate any of your concerns to the school nurse if the student with diabetes is experiencing frequent symptoms.
11. Notify parents/guardians of any activities or celebrations that involve food. The student with diabetes can usually make an accommodation in their regimen so they can participate.

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12. Provide additional academic support, instruction or accommodations to the student if absence is related to diabetes management and care.
 13. Work with the parent, student and school nurse to educate classmates about diabetes.
 14. Treat the student with diabetes the same as other students except to meet medical needs, and be prepared to address any stigmatizing or harassment of students with diabetes.
 15. Respect the student's confidentiality and right to privacy.
 16. Make certain that emergency communication devices (e.g., walkie-talkie, intercom, cell phone, etc.) are always present and functional.

Students with diabetes can safely participate in physical education classes and team sports. The student's IHCP should address specific instructions for physical activity.

GUIDELINES FOR THE SCHOOL NUTRITION DIRECTOR/MANAGER

1. Participate in the review and revision of the IHCP and DEAP for the student with diabetes to ensure that accommodations for these students are consistent with the standards of care recommended for students with diabetes, federal and state laws and USDA requirements. (See Appendix H and I for sample forms.)
2. Participate and/or provide training for school nutrition personnel, substitutes and monitors to include:
 - a. diabetes and nutritional care
 - b. carbohydrate counting
 - c. portion sizes
 - d. food labels
 - e. standardized recipes
 - f. communicating with students
 - g. Diabetes Emergency Action Plan
3. Follow all USDA requirements for school breakfast, lunch and before and afterschool snack as appropriate.
4. Make available and maintain current food labels and standardized recipes. Provide nutrition information on all menu items, a la carte and vending machine items to the school nurse and parents/guardians.
5. Prepare and make available a file for the school nurse, student and family on nutrition and/or carbohydrate information on all menu items served. Whenever possible, this information should be made available electronically.
6. Plan ahead to provide meals based upon the student's Diabetes Medical Management Plan.
7. Serve meals at established service times and follow standardized portion sizes.
8. Encourage students with diabetes to follow their individualized meal plan.
9. Understand the Diabetes Emergency Action Plan and signs and symptoms of hypoglycemia.
10. Promote integration policies and procedures related to diabetes management in district wellness policies and school nursing policy manuals.
11. Respectfully treat the student with diabetes the same as other students except to meet nutrition and medical needs.
12. Respect the student's confidentiality and right to privacy.
13. Make certain that emergency communication protocol is in place and devices (e.g., telephone, pagers, walkie-talkies) are functional.

GUIDELINES FOR THE SCHOOL BUS COMPANY/DRIVER

1. Participate in the review and revision of the Individual Healthcare Plan (IHCP), Diabetes Emergency Action Plan (DEAP) and the School Bus Medical Emergency Plan, as appropriate, to ensure that accommodations for students with diabetes are consistent with the standards of care recommended by federal and state laws (see Appendix H, I and K for sample forms).
2. Provide training for all school bus drivers and substitute drivers on managing a diabetic emergency including the school bus medical emergency plan.
3. Be aware of students with diabetes who are on the bus. Maintain a current copy (with parent/guardian permission) of DEAP including the School Bus Medical Emergency Plan with student photo for students with diabetes.
4. Coordinate with the school district in situations where the student with diabetes has been determined to need a monitor on the school bus.
5. Permit students with diabetes to have juice, snack (peanut safe) or water as needed for management of their diabetes.
6. Know where students' emergency snacks and/or testing kits are located.
7. Have functioning emergency communication devices (e.g., cell phone, two-way radio, walkie-talkie or similar).
8. Know the implementation plan for local Emergency Medical Services (EMS) response.
9. Communicate to the parent or another adult responsible for the student that the school bus emergency plan has been used before the student is discharged from the bus.
10. Communicate any information related to activating the School Bus Medical Emergency Plan to the appropriate school personnel as soon as possible.
11. Treat the student with diabetes the same as other students, except to meet medical needs.
12. Respect the student's confidentiality and right to privacy.

GUIDELINES FOR THE GUIDANCE COUNSELOR OR SCHOOL PSYCHOLOGIST

1. Participate in the review and revision of the IHCP and DEAP for the student with diabetes to ensure that accommodations for these students are consistent with the standards of care recommended for students with diabetes, federal and state laws.
2. Participate in training on diabetes and staff responsibilities.
3. Recognize that students with chronic illnesses such as diabetes have a challenging time adhering to medical regimens. Adherence is particularly challenging during adolescence.
4. Advocate for necessary accommodations for students with diabetes to ensure an optimal learning environment and full participation in all school activities.
5. Treat the student with diabetes the same as other students except to meet medical needs.
 - a. Work with school staff to promote a supportive learning environment.
 - b. Be aware of the specific psycho-social issues the student with diabetes may experience.
 - c. Be aware of the student's feelings about having diabetes and identify ways to ensure that the student is treated the same as other students.
 - d. Provide support for children who have diabetes and their families regarding development of possible co-morbid conditions such as depression and eating disorders. Collaborate with the school nurse to provide education for school staff regarding recognition of these issues.
 - e. 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.
6. Respect the student's confidentiality and right to privacy.

GUIDELINES FOR THE COACH AND OTHER ON-SITE PERSONS IN CHARGE OF AFTER SCHOOL ACTIVITIES

1. Participate in a diabetes training program provided by the school nurse.
2. With parent's consent, keep a copy of the student's Diabetes Emergency Action Plan (DEAP), photo of student and emergency contact information.
3. Be prepared to recognize and respond to the signs and symptoms of hypoglycemia and hyperglycemia and take action in accordance with the student's DEAP.
4. Allow the student to check blood glucose levels as outlined in the IHCP, 504 Plan, IEP, or other applicable plan.
5. Understand and be aware that hypoglycemia can occur during and after physical activity.
6. Recognize that a change in the student's behavior could be a symptom of blood glucose changes.
7. Make certain that emergency communication devices (e.g., walkie-talkie, intercom, cell phone, etc.) are always present.
8. Establish emergency medical procedures with EMS or per school protocol.
9. Keep the first aid kit that includes fast acting glucose (gel, juice, tabs) and make sure that at all times the student has glucose monitoring supplies and glucose available.
10. Allow the student to eat whenever and wherever necessary, and allow extra trips to the bathroom or water supply if needed.
11. Communicate with the school nurse and athletic trainer regarding any observations or concerns about the student.
12. Provide information for the substitute coach that communicates the daily needs of the student and the Diabetes Emergency Action Plan.
13. If for safety reasons medical alert identification needs to be removed during specific activities, remind the student to replace this identification immediately after the activity is completed.
14. Allow the student athlete to miss occasional practices/games if necessary due to medical appointments.
15. Treat the student with diabetes the same as other students except to meet medical needs, and be prepared to address any stigmatizing or harassment of students with diabetes.
16. Encourage exercise and participation in physical activities and sports for students with diabetes as well as for other students.
17. Respect the student's confidentiality and right to privacy.

GUIDELINES FOR BEFORE AND AFTER SCHOOL ACTIVITIES PERSONNEL

1. Before and after school activities sponsored by the school must be consistent with school policies and procedures regarding students with diabetes and/or life threatening medical conditions.
2. Identify the adult staff member who is in charge of the program.
3. With written parental permission, provide the adult staff member in charge with the student's Diabetes Emergency Action Plan (See Appendix I for sample plans). This individual should become familiar with the recognition and response to a significant change in blood glucose levels.
4. Provide a designated staff member with a source of fast acting glucose to have available. Optimally, the student will bring their own snacks and drinks to the programs.
5. Allow students with diabetes to eat and drink whatever and wherever they need to in order to maintain normal blood glucose levels.
6. Allow students with diabetes to have equipment available for testing their blood sugars either before or during the school sponsored activity.
7. Allow students with diabetes to test and treat their blood sugar levels as outlined in their Diabetes Emergency Action Plan.
8. Remind the student to wear their medical alert identification at all times and if it must be removed during specific activities, remind the student to replace the identification immediately after the activity is completed.
9. Make certain that a communication device, such as a cell phone, is available for contacting parents/guardians and for accessing Emergency Medical Response.
10. Respect the student's confidentiality and right to privacy.

GUIDE TO CARBOHYDRATE COUNTING IN SCHOOLS

The USDA school meal patterns are designed to meet calorie and key nutrients needs for the growth and development of children at different ages. Carbohydrate counting provides another measure of planning meals to help manage diabetes and the delivery of insulin. For the purpose of this manual, carbohydrate counting is based on calculating the total grams of carbohydrate served in school menus and consumed by the student. Since an accurate count is essential for managing insulin, food consumption must be monitored and evaluated by a designated responsible adult and reported to the school nurse.

Introduction

School nutrition programs need to maintain current nutrition labels with information on all foods served. The food label documents nutrient content including total grams of carbohydrate in a serving of food. All USDA Foods (formerly USDA Commodities) and almost all foods purchased from vendors or bought in the grocery store have a food label. Nutrition information for unpackaged foods such as fresh fruits and vegetables can be obtained from USDA <http://www.nal.usda.gov/fnic/foodcomp/search/>, http://www.nal.usda.gov/fnic/foodcomp/Data/HG72/hg72_2002.pdf. Accurate carbohydrate content can also be obtained from other credible sources such as USDA recipes, USDA approved nutrient analysis software, and other websites recommended in this manual. Use only brand specific nutrition information for the products and portion sizes served in your school nutrition program.

The following procedures will help you and the school nurse calculate the carbohydrate content of foods served and consumed at breakfast, lunch or snack. Because this information is used to determine the insulin requirements for a student, it is critical that the information reflect the true carbohydrate grams in the portion served. Collaborate with the school nurse to create and use a menu carbohydrate counting form that will also help document what the student actually consumes.

Carbohydrate Counting Procedures

School Nutrition Personnel should:

1. Create and maintain a current data base of standardized recipes and commonly used foods in the school nutrition program.
 - a. List alphabetically by name or food group.
 - b. Include fields for food name, brand, portion size and carbohydrate (CHO) per portion.
 - c. Use the Nutrition Facts label or other USDA approved databases to determine estimated grams of carbohydrate (CHO).

MILK			
Food Name	Brand	Portion Size (From Nutrition Facts Label)	Estimated CHO (grams)
Milk, 1% fat	Garelick	8 oz	12
Milk, skim	Garelick	8 oz	12
GRAINS			
Food Name	Brand	Portion Size (From Nutrition Facts Label)	Estimated CHO (grams)
Bread, Whole Wheat	Pepperidge Farm	1 oz.	24
Rice, Brown	USDA Foods	½ cup	22
Tortilla, Whole Grain	USDA Foods	1 (43g)	20
FRUIT			
Food Name	Brand	Portion Size (From Nutrition Facts Label)	Estimated CHO (grams)
Apple	Fresh	1 Medium (120 ct)	25
Banana	Fresh	1 small (6")	23

2. Create a carbohydrate counting form.
 - a. Enter all menu items and portion sizes served in your school.
 - The portion sizes may vary based upon the ages and grades in the school.
 - Refer to your recipes and/or production records for appropriate portion sizes.
 - b. Use the data base to calculate grams of carbohydrate coming from all menu items.
 - c. Have the school nurse review the amount of food the student has eaten and complete the calculation for the total grams of carbohydrates consumed in that meal.

SAMPLE MENU CARBOHYDRATE COUNTING FORM FOR FOOD SERVED AND CONSUMED AT SCHOOL				
Food Name	Brand	Portion Size Served to Student	Estimated CHO (grams)	CHO Consumed by the Student (grams)
Bread, wheat (50 grams)	Pepperidge Farm	2 slices	24	24
Turkey	USDA Foods	3 oz	2	2
Mayo, light	Cains	1 Tbsp	1	1
Milk, 1%	Garellick	8 oz	12	12
Carrots	Fresh	2 oz	3	3
Sliced tomato	Fresh	2 slices	2	2
Fresh Apple		1 Medium (120 ct)	25	0
Total			69	44

3. Update and revise menu and food items to reflect changes in vendor or USDA offerings.

APPENDIX B1

SUGGESTED COMPONENTS OF A DISTRICT POLICY ON THE MANAGEMENT OF DIABETES IN THE SCHOOL SETTING

_____ **School district develops system-wide policies to manage students with diabetes, including the following:**

- Availability of a school nurse throughout the school day for schools that enroll students with diabetes.
- Provision of education and training for school personnel on the management of students with diabetes on an annual basis as scheduled by the school principal.
- Development of a system-wide plan for addressing medical emergencies related to diabetes and training of staff related to emergency response.
- Development of Individualized Health Care Plan (IHCP) and Diabetes Emergency Action Plan (DEAP) for every student with diabetes.
- Orders for the individual student including protocols for licensed personnel (school nurses) to administer insulin/glucagon to individuals diagnosed with diabetes.
- Development of protocols related to managing diabetes in the classroom and other school-related activities including field trips and after-school activities.
- Provision of student self-management of diabetes as determined by school nurse, parent/guardian and student.

SUGGESTED ELEMENTS TO CONSIDER IN DEVELOPING SCHOOL DISTRICT PROTOCOLS IN THE MANAGEMENT OF DIABETES IN THE SCHOOL SETTING

Training/Education related to diabetes including management of diabetes in the school setting:

- What information
- Frequency of training
- Parent involvement in training
- Responsibility for scheduling
- Responsibilities for school personnel including:
 - Teachers
 - School Nurses
 - Aides
 - Volunteers
 - Substitute Staff (teaching and nursing)
 - School Nutrition Personnel
 - Custodial Personnel
 - Transportation Personnel
 - Secretarial Personnel
 - School Support Personnel
 - Afterschool Personnel (including coaching staff)
 - Administrators

Involvement of Student and Family

- Attendance at pre-entry meeting
- Informed of school policies related to managing diabetes in the school setting
- Protocols and policies related to self-management including where glucose testing and insulin administration will take place
- Determine the process for the notification of need for replacement of supplies
- Procedure for delivery of replacement supplies to school

IHCP/DEAP Development

- Process for development/review
- Plan for team meeting
- Membership of team
- Frequency of reviewing IHCP
- Parent involvement
- Information to be included
- Where DEAP is posted
- Communication process for field trips, school bus personnel, after school activities, etc.

Cafeteria protocols

- Process for managing students with diabetes
- Personnel responsibilities defined (carbohydrate counting, portion control, substitutions)
- Communication process with school nurse and parents/guardians for carbohydrate count/ menu substitutions

Classroom protocols

- Protocols for student management of diabetes in the classroom:
 - Blood glucose monitoring
 - Use of bathroom facilities
 - Reporting symptoms of hypo/hyperglycemia
 - Visits to school nurse office
- Procedures in place for diabetes management during academic assessment, test-taking
- Education of classmates
- Protocols for communication with parents/guardians of other children
- Guidelines for allowable foods for lunches/snacks/parties/classroom projects
- Guidelines for method(s) to determine allowable foods

.....

_____ **Field trip management**

- Notification of field trip plans well in advance to include:
 - Determination of need for licensed personnel to attend
 - Location of field trip is safe for student
 - Location of nearest medical facility determined
 - Review of DEAP for all school personnel involved with field trip
- Guidelines for storage/administration of insulin, glucagon and blood glucose monitoring supplies, snacks as needed
- Plan for activating EMS and notifying parent

_____ **School bus management**

- Communication systems (e.g., cell phones) in place
- Driver education of diabetes and DEAP
- Student placement on bus
- Availability/location of glucagon/insulin, as insulin/medication
- Food policy on bus
- Determination if a monitor or other assistance is needed during transportation

_____ **Emergency response protocols**

- School personnel responsibilities defined
- Communication procedures for emergencies established
- Emergency drills held as necessary
- Coordination with Local Emergency Services
- Availability of glucagon/insulin

APPENDIX C

SAMPLE - SCHOOL YEAR TIMELINE FOR SCHOOL NURSE: DIABETES MANAGEMENT

August/September

- Meet with parents/guardians prior to or on the first day of school
- Complete Individual Health Care Plan (IHCP) or Section 504 Plan and Diabetes Emergency Action Plan (DEAP) for all students with diabetes
- Provide copies of IHCP and DEAP to all appropriate school personnel
- Make sure all diabetes supplies including snacks have been brought into school
- Complete diabetes education with classroom teachers and specialists including recognition of signs and symptoms of hypo/hyperglycemia
- Have parents/guardians supply snack bags for each classroom to be available in case of remain in room/lockdown emergency

October

- Continue to implement student's IHCP
- Meet with teacher to review case and make necessary changes as needed

November

- Meet with parents/guardians during school conferences/as needed, review IHCP and make necessary changes
- Continue to implement student's IHCP

December

- Check in with students who are self-managing their diabetes; verify continued skill competency
- Continue to implement student's IHCP

January – May

- Continue to implement student's IHCP

June

- Continue to implement student's IHCP
- Send letter home to parents/guardians reminding them of the need for new physician orders for next school year
- Send home student's diabetes supplies on the last day of school

Adapted from the National Association of School Nurses, 2008.

SAMPLE I - PHYSICIAN'S ORDER - MEDICATION

Medication Order

(To be completed by Licensed Prescriber)

Name of Student:

Date of Birth:

Name and Title of Licensed Prescriber:

Business Tel Number:

Emergency Tel Number:

Diagnosis: Diabetes Mellitus

Insulin: Route of Administration: **SQ by syringe or insulin pen** Time: Pre-lunch & _____

____ **Humalog**

____ **Novolog**

____ **Regular**

Sliding Scale:

Blood Glucose (mg/dl)

Units of Insulin

AND Insulin to carbohydrate ratio: ____ units insulin for every ____ grams of carbohydrate to be eaten.
Correction factor: 1 unit insulin lowers blood glucose ____ mg/dl. Blood glucose target ____ mg/dl.

OR

Insulin: Route of administration: **Insulin Pump** **Basal Profile:** _____

____ **Humalog**

____ **Novolog**

Blood Glucose Target ____ mg/dl

Insulin to carbohydrate ratio: ____ units insulin for every ____ grams of carbohydrate to be eaten.

AND Correction factor: 1 unit insulin for every ____ mg/dl over ____ mg/dl blood glucose.

Formula for high blood glucose (BG) correction:
$$\frac{(\text{Current BG}) - (\text{Target BG})}{\text{Correction Factor}} = \text{units of insulin to be given}$$

Insulin Side Effects: Hypoglycemia. Do not correct high blood glucose more frequently than every 2 hours with Humalog or Novolog or every 3 hours with Regular insulin.

Consent for self-administration (provided the school nurse determines it is safe and appropriate):

Yes _____ Yes, under direct supervision _____ NO _____

Date of discontinuation of orders: - _____

Date of last office visit: _____ (Scheduled visits usually at 3-month intervals)

Signature of Licensed Prescriber

Date

SAMPLE II - PHYSICIAN'S ORDER – MEDICATION

Medication Order

(To be completed by Licensed Prescriber)

Name of Student:

Date of Birth:

Address:

Name of Licensed Prescriber:

Title: MD

Business Telephone:

Emergency Telephone:

Medication: Humalog Insulin via Insulin Pump

Basal Profile:

Boluses for food (Insulin to Carbohydrate Ratio): to be given just before eating

1 unit insulin for every _____ grams of carbohydrate

Sensitivity Factor:

1 unit of insulin will bring the blood glucose (BG) _____ blood glucose points

Blood Glucose Target or Goal: _____ mg/dl

Formula for a high blood glucose correction:

$$\frac{(\text{BG now}) - (\text{BG Target})}{\text{Sensitivity Factor}} = \# \text{ of units needed to get to target BG}$$

*** If the child has received a bolus within the last 2-3 hours DO NOT correct for high blood glucose. The insulin given earlier has not worked fully yet.

Date of Order:

Discontinuation Date: end of school year

Diagnosis: Insulin Dependent Diabetes

Possible side effects: Hypoglycemia

Consent for self-administration (provided the school nurse determines it is safe and appropriate)

Yes No

Date of last office visit:

Office visits scheduled at three-month intervals

Signature of Licensed Prescriber

Date

SAMPLE III - PHYSICIAN'S ORDER – DMMP

Medication Order

(To be completed by Licensed Prescriber)

Name of Student:

Date of Birth:

Name and Title of Licensed Prescriber:

Business Telephone Number:

Emergency Telephone Number:

Diagnosis: Diabetes Mellitus

Glucagon: Route of Administration: SQ/IM Dosage: ____ 1/2 cc ____ 1 cc ____ N/A

Frequency: as needed for severe low blood sugar with altered consciousness.

Possible side effects, contraindications, or adverse reactions: nausea/vomiting. Position student on his/her side after glucagon administration until fully awake.

May not be self-administered.

Fingerstick blood glucose testing:

Frequency: before lunch and as needed for symptoms of low or high blood sugar.

Consent for self-testing (provided the school nurse determines it is safe and appropriate):

Yes ____ Yes, under direct supervision ____ No ____

____ Check urine (or blood) ketones if student's blood glucose is over 250 mg/dl.

Treatment for hypoglycemia:

Glucose tablets, glucose gel, fruit juice, or other source of fast-acting carbohydrate

Dosage: ____ grams carbohydrate Frequency: as needed for blood sugar less than ____

Consent for self-treatment (provided the school nurse determines it is safe and appropriate):

Yes ____ Yes, under direct supervision ____ No ____

Other diabetes medication being taken by the student:

Insulin: at home ____ at school (see additional orders) ____ Oral diabetes medication: _____

Other medication orders: _____

Date of discontinuation of orders: - _____

Date of last office visit: _____ (Scheduled visits usually at 3-month intervals)

Signature of Licensed Prescriber

Date

APPENDIX E

PARENT CHECKLIST FOR THE BEGINNING OF THE SCHOOL YEAR/NEW DIABETES DIAGNOSIS

The parent/guardian shall provide the following to the school nurse at the time of a new diabetes diagnosis and prior to the beginning of each new school year:

- Physician/medical provider's documentation of diabetes diagnosis
- Physician/medical provider's orders for:
 - Insulin
 - Glucose monitoring
 - Insulin delivery system (such as insulin pen, insulin pump)
 - Glucagon
 - Treatment of hyper and hypoglycemia
- Parent/guardian's signed consent for school nurse to:
 - share information with health care providers
 - administer medications
 - share essential health information with other school staff
 - include photo on all appropriate documents
- Parent/guardian will furnish all supplies needed, including:
 - **monitoring supplies** including glucose meter, lancets, test strips (glucose and ketone) and alcohol preps
 - **treatment supplies** (glucose tablets, fast-acting glucose, snacks, water, juice)
 - **medication/supplies** (insulin, syringes, pump supplies, batteries, manual, infusion sets, skin prep wipes) and glucagon kits
- Summary of student's medical history related to diabetes, onset, treatment and student's symptoms of hyper/hypoglycemia, including Hemoglobin A1c (A1C) value with date.
- A description of the student's emotional response to the condition and need for support.
- Name/telephone number of the student's primary care provider and DMMT.
- Method to reach parent/parent designee should an emergency occur, (e.g., cell-phone, telephone, beeper).
- Age-appropriate ways to include a student in planning for care and implementing the plan.
- Assessment for self-administration in collaboration with the DMMT.
- Parent/guardian's interest in participating in the training/orientation in the student's classroom.
- Provide additional emergency medical information to other adults responsible for the student outside the regular school day, including*
 - After School Activities
 - Sports
 - Bus Drivers

APPENDIX F

SAMPLE - BEGINNING OF THE SCHOOL YEAR CHECKLIST FOR THE SCHOOL NURSE

- Initiate an Individual Health Care Plan (IHCP) based on the information provided by the parent, as well as the nurse's assessment, including:
 - the student's name.
 - method of identifying the student.
 - the chronic health condition (diabetes).
 - warning signs of hyper/hypoglycemia and emergency treatment. The plan must include, but not be limited to, risk reduction of hyper/hypoglycemic episodes and emergency response at the following times: (a) travel to and from school, (b) the school day, and (c) before and after school programs, and field trips.
 - the IHCP should be signed by the parent, the school nurse and student if applicable.
- Initiate a Diabetes Emergency Action Plan (DEAP) which will be accessible to appropriate school personnel responsible for the student (e.g., in the classroom, cafeteria). The DEAP should include:
 - the student's photo (if possible).
 - the student's name.
 - warning signs of a hyper/hypoglycemic reactions and emergency management.
 - signed by the parent and school nurse. *See Appendix I for a sample DEAP.
- Review with parent/guardian emergency medical information that should be provided to adults responsible for extra-curricular activities and to school bus drivers.
- Complete a medication care plan, including:
 - plans for field trips or short-term special events and transportation.
 - where emergency diabetes supplies are stored and how they should be monitored for currency.

(Note: The Medication Plan shall be in accordance with 105CMR 210.000, The Administration of Prescription Medications within Public and Private Schools.)

- Based on the student's age, classroom, etc., identify who will be part of the multidisciplinary team approval. (These may include but not be limited to the principal or designee, classroom teacher, student, school nutrition director/manager, counselor, school physician, physical education teacher, custodian, bus driver, local EMS, etc.)
- Assess the student for his/her ability to perform diabetes monitoring and treatment independently, in a safe and appropriate manner with nursing oversight.
- Determine the appropriateness for the student to self-carry his/her monitoring supplies.
- Provide information on the availability of a Medical Alert Bracelet.
- Provide education and consultation to appropriate school personnel concerning the IHCP.

APPENDIX G

SAMPLE - PARENT/GUARDIAN DIABETES QUESTIONNAIRE

Student: _____

DOB: _____

Please complete and return to the school nurse by: _____

Person to Contact	Relationship	Work Phone	Home Phone
-------------------	--------------	------------	------------

1. _____

2. _____

Preferred communication method: Phone Written note Email _____

Health Care Provider: _____ Phone: _____

Hospital: _____ Phone: _____

Child's age at diagnosis of diabetes: _____ Month/Year of diagnosis: _____

Does your child wear a medical alert bracket/necklace? Yes No

When will your child need blood glucose level checked? _____
(i.e. morning, snack time, lunch, before physical education class, dismissal time)

Does your child know how to check his/her own blood glucose? Yes No

Will your child need routine snacks at school? Yes No Time _____

What would you like done about birthday treats/party snacks? _____

When will your child need to test his/her urine or blood for Ketones at school? _____

What blood glucose level is considered low for your child? _____

How often does your child typically experience a low blood glucose level?

Daily Weekly Monthly Other

My child typically experiences low blood sugar:

mid A.M. before lunch afternoon after exercise other _____

Please check your child's usual signs/symptoms of low blood glucose level.

- | | | |
|--|---|---|
| <input type="checkbox"/> hunger or "butterfly feeling" | <input type="checkbox"/> irritable | <input type="checkbox"/> difficulty with speech |
| <input type="checkbox"/> shaky/trembling | <input type="checkbox"/> weak/drowsy | <input type="checkbox"/> difficulty with coordination |
| <input type="checkbox"/> dizzy | <input type="checkbox"/> inappropriate crying or laughing | <input type="checkbox"/> confused/disoriented |
| <input type="checkbox"/> sweaty | <input type="checkbox"/> severe headache | <input type="checkbox"/> loss of consciousness |
| <input type="checkbox"/> rapid heartbeat | <input type="checkbox"/> impaired vision | <input type="checkbox"/> seizure activity |
| <input type="checkbox"/> pale | <input type="checkbox"/> anxious | <input type="checkbox"/> other _____ |

Does he/she recognize these signs/symptoms? Yes No

Other medication taken by your child on a regular basis:

Name	By (mouth, injection etc.)	Dose	Time of day
_____	_____	_____	_____
_____	_____	_____	_____

As needed medications:

Name	By (mouth, injection etc.)	Dose	Time of day
_____	_____	_____	_____
_____	_____	_____	_____

Any known allergies? Yes - list allergies _____ No

If medication is to be administered at school, a medication authorization form must be completed yearly by your child's physician. The medication must be delivered by parent/guardian to the school nurse in the original labeled container. When you fill your prescription, ask the pharmacist give a separate container for school.

Has your child received diabetes education?

by health care provider at support group meetings at camp other _____

Please add anything else you would like school personnel to know about your child's diabetes and/or other health conditions: _____

Information provided by: _____
Name Relationship to child Date

I authorize reciprocal release of information related to diabetes mellitus between the school and the health care provider.

Signature: _____ Date: _____
Parent/Guardian

Adapted from the Minneapolis Health Learners Board Asthma Initiative and the Saint Paul Public Schools Asthma Management for Students Program, 1/06.

1

Individual Health Care Plan for Student with Diabetes

Student's Name:

DOB:

School:

Grade:

Contacts

Parents:

Physicians:

Diabetes Nurse Educator:

Student History

Onset of Diabetes:

Pump Basal Rate:

Sensitivity Factor:

Target Blood Glucose:
$$\frac{\text{Current Blood Glucose} - \text{Target Blood Glucose}}{\text{Sensitivity}} = \text{Bolus}$$

Correction Bolus:

Hypoglycemia Treatment

Hyperglycemia Treatment

Classroom Modifications

Physical Education

Activities outside, on school grounds during the school day

After School Activities

3

End of Day Dismissal

Level of Independence

Medications

Emergency plans

Evacuation:

Lockdown:

Shelter in place:

Amendments

Plan Approval

_____ **Parent/Guardian**

_____ **Teacher**

_____ **Principal/Housemaster**

_____ **School Name**

Documentations

We have read and understand the Health Care Plan.

Signature

Date

Title

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

APPENDIX I1

SAMPLE - DEAP FOR HYPOGLYCEMIA

Diabetes Emergency Action Plan for Students with Diabetes

Hypoglycemia (Low Blood Sugar)

Photo

Student Name: _____

Date _____

Grade/Teacher: _____

Year/Date & School: _____

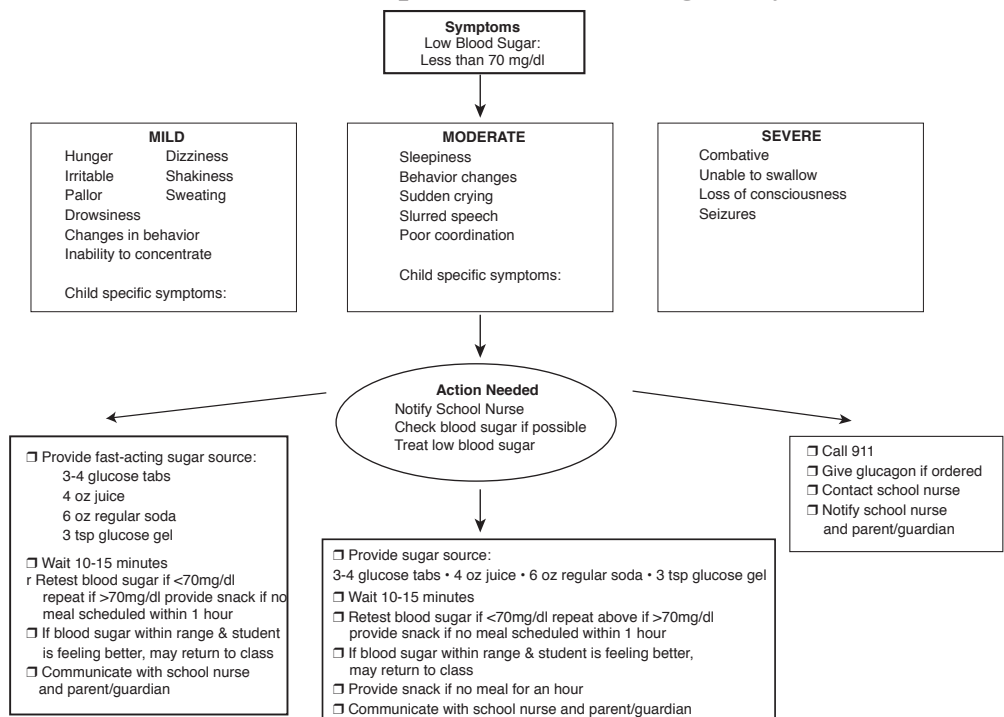
Parent/Guardian Name: _____ Phone _____

Emergency Contact: _____ Phone _____

Health Care Provider: _____ Phone _____

Diabetes Nurse Educator: _____ Phone _____

Never send a child with suspected low blood sugar anywhere alone



School Nurse Signature: _____ Date: _____

Adapted with permission from the National Association of School Nurses H.A.N.D.SSM 2008.

SAMPLE - DEAP FOR HYPERGLYCEMIA

Diabetes Emergency Action Plan
for Students with Diabetes

Photo

Hyperglycemia (High Blood Sugar)

Student Name: _____

Date _____

Grade/Teacher: _____

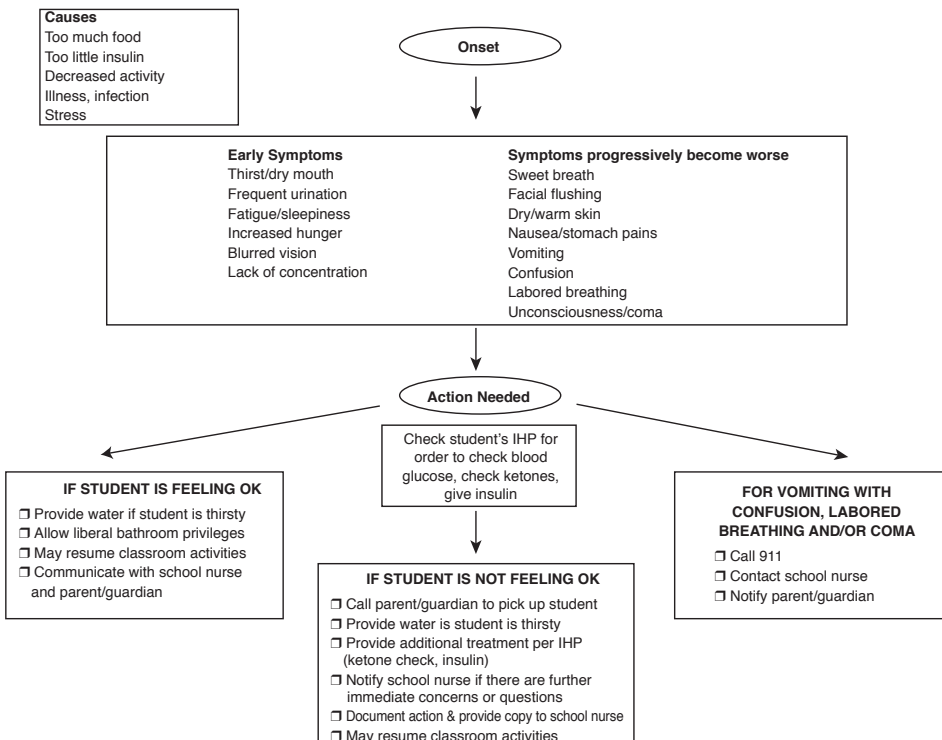
Year/Date & School: _____

Parent/Guardian Name: _____ **Phone** _____

Emergency Contact: _____ **Phone** _____

Health Care Provider: _____ **Phone** _____

Diabetes Nurse Educator: _____ **Phone** _____



School Nurse Signature: _____ **Date:** _____

Adapted with permission from the National Association of School Nurses H.A.N.D.SSM 2008.

APPENDIX J

SAMPLE - EXTRA-CURRICULAR EMERGENCY MEDICAL INFORMATION FORM

_____ Public Schools

Note: The school nurse is not present during before or after school programs

Activity/Sport: _____ **Adult Supervisor** _____

Student Name: _____

Address: _____ **Home Phone:** _____

Parent/Guardian Cell Phone: _____ **Work Phone:** _____

Parent/Guardian Cell Phone: _____ **Work Phone:** _____

My child has the following medical condition that may require immediate attention (**911**) at after school athletics. **Please circle:**

Allergy to _____ **requires** **Epi-Pen or Epi-Pen Jr.** **Asthma** **Diabetes** **Seizures**

Other: _____

Action Plan

Allergic Reaction: (examples of some of the symptoms include) Difficulty breathing, shortness of breath, wheezing, difficulty swallowing, hives, itching, swelling of any body part.

Action Plan: Call 911 and assist child in using Epi-Pen if prescribed and available

Asthma: student has difficulty breathing, wheezing, and shortness of breath.

Action Plan: If the student has their inhaler, allow them to use it. If no relief of symptoms in five (5) minutes, call 911. **If no inhaler available, call 911 immediately.**

Diabetes: Low blood sugar reaction- hunger, sweaty, pallor, feels shaky, headache.

Action Plan: Allow student to drink a juice box or regular soda, or eat glucose tablets or a snack from their emergency snack pack. Have student test their blood glucose level and record number. If no change in symptoms in five (5) minutes - **call 911** and have child repeat all of the above.

Seizure: Altered consciousness, involuntary muscle stiffness or jerking movements, drooling/foaming at the mouth, temporary halt in breathing, loss of bladder control.

Action Plan: protect student from falling, **call 911**. Never put anything into the student's mouth.

Parent/Guardian child specific instructions: _____

Parent Signature: _____ Date: _____

SAMPLE - SCHOOL BUS EMERGENCY MEDICAL INFORMATION FORM

Public Schools

Note: The school nurse is not present during before or after school programs

School: Bus #

Student Name:

Address: Home Phone:

Parent/Guardian Cell Phone: Work Phone:

Parent/Guardian Cell Phone: Work Phone:

My child has the following medical condition that may require immediate attention (911) on the school bus. Please circle:

Allergy to requires Epi-Pen or Epi-Pen Jr. Asthma Diabetes Seizures

Other:

Action Plan

Allergic Reaction: (examples of some of the symptoms include) Difficulty breathing, shortness of breath, wheezing, difficulty swallowing, hives, itching, swelling of any body part.

Action Plan: Call 911 and assist child in using Epi-Pen if prescribed and available

Asthma: student has difficulty breathing, wheezing, and shortness of breath.

Action Plan: If the student has their inhaler, allow them to use it. If no relief of symptoms in five (5) minutes, call 911. If no inhaler available, call 911 immediately.

Diabetes: Low blood sugar reaction- hunger, sweaty, pallor, feels shaky, headache.

Action Plan: Allow student to drink a juice box or regular soda, or eat glucose tablets or a snack from their emergency snack pack. Have student test their blood glucose level and record number. If no change in symptoms in five (5) minutes - call 911 and have child repeat all of the above.

Seizure: Altered consciousness, involuntary muscle stiffness or jerking movements, drooling/foaming at the mouth, temporary halt in breathing, loss of bladder control.

Action Plan: protect student from falling, call 911. Never put anything into the student's mouth.

Parent/Guardian child specific instructions:

Parent Signature: Date:

APPENDIX L

SAMPLE - ANNUAL LETTER TO PARENTS/GUARDIANS FOR DIABETES MANAGEMENT AT SCHOOL

Date:

Dear Parent/Guardian of _____

Name of School's Nursing Department] provides nursing services that promote students ability to learn. Our goals are to:

- Assist students in learning how to take care of their health.
- Ensure a safe school environment.
- Promote good control of a student's health condition so they are ready to learn.

Diabetes can affect a student's ability to learn if it is not under good control. To help us meet these goals, [Name of Nursing Department] has a fulltime (part-time) nurse to help manage your child's care while at school.

As a reminder, at the start of each school year we need to have the following information for your child:

- Written diabetes management plan form including medication orders from your health care provider.
- Signed authorization by parent/guardian for medication administration and treatment at school.
- Meeting with parent/guardian and school nurse to develop or update the Individual Healthcare Plan.
- Completion of the Diabetes Questionnaire by parent/guardian for all newly diagnosed students with diabetes.

In addition, adequate diabetes supplies must be provided to the school:

- Snacks and glucose tablets to treat low blood glucose levels
- Medications
- Blood glucose meter, strips, alcohol preps, spare battery
- If student has an insulin pump, supplies related to the pump
- Ketone testing strips
- Glucagon
- Extra snack pack to be kept in each classroom student attends in case of remain in room/lockdown emergency

We are looking forward to helping you and your child manage diabetes at school. Please feel free to contact me with any questions or concerns and additional support.

School Nurse

Telephone Number

Adapted from the National Association of School Nurses, 2008.

SAMPLE - PLAN FOR DAILY CLASSROOM MANAGEMENT OF THE STUDENT WITH DIABETES

_____, a student in your classroom, has diabetes.
Name _____

This student needs to report to the health office at the following times for blood glucose checks:

Before breakfast Before snack Before lunch Before physical education
Time _____ Time _____ Time _____ Time _____

Other _____ Time _____

- This student checks his/her blood glucose in the classroom.
- This student receives insulin at school. Insulin delivery method is:
 - Syringe Insulin Pen Insulin Pump

Student should report to the health office for insulin administration at the following times: _____ This student is able to self-administer insulin

- in the classroom in the health office

This student has an:

- Individualized Healthcare Plan (IHCP) Section 540 Plan
- Diabetes Emergency Action Plan (DEAP) IEP

Be prepared to:

- Recognize the symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose). If this student has symptoms of the above, please follow the DEAP and always send the student accompanied by another trusted student or adult to the health office.
- Recognize that a change in the student's behavior could be a symptom of blood glucose changes. A student with low blood glucose may briefly have some degree of cognitive impairment until the glucose level is back in normal range.
- Provide access to water and the bathroom.
- Notify the health office or school nurse if there are any changes in schedule such as class parties, field trips or other special events.
- Notify the parent/guardian ahead of time to allow for planning and food accommodations.
- **Call the School Nurse with any questions or concerns about the student's health.**
- **Include this information in your substitute teacher folder.**

School Nurse Name: _____ Number: _____

APPENDIX N

105 CMR 210.000: THE ADMINISTRATION OF PRESCRIPTION MEDICATIONS IN PUBLIC AND PRIVATE SCHOOLS

105 CMR 210.000 provides minimum standards for the safe and proper administration of prescription medications to students in the Commonwealth's public and private primary and secondary schools. 105 CMR 210.000 permits school nurses to delegate responsibility for administration of prescription medications to trained, nursing-supervised school personnel, provided the school district or private school registers with the Department of Public Health. The aim of 105 CMR 210.000 is to ensure that students requiring prescription medication administration during the school day will be able to attend school and to ensure that prescription medications are safely administered in schools. 105 CMR 210.000 encourages collaboration between parents or guardians and the school in this effort.

In 2005, Mass. General Laws Chapter 71, Section 54B (administration of medications in school settings) was amended to add the following statement: "Notwithstanding any general or special law or regulation to the contrary, no school district shall prohibit students with diabetes from possessing and administering glucose monitoring tests and insulin delivery systems, in accordance with Department of Public Health regulations concerning students' self-administration of prescription medications."

Schools must follow the self-administration regulations (105 CMR 210.006) in this special situation. Self-administration is addressed in 210.006.

<http://www.mass.gov/eohhs/docs/dph/regs/105cmr210.pdf>

UNDERSTANDING THE LAW AS IT RELATES TO STUDENTS WITH DIABETES

Legal Concerns and Liability

Several laws and associated regulations relate to schools and students with diabetes or other disabilities. These laws cover the accommodations, instruction, and services to which a student is entitled and may receive in school.

Federal Laws relating to students with disabilities include Section 504 of the Rehabilitation Act of 1973 (Section 504), the Individuals with Disabilities Education Act (IDEA), the Americans with Disabilities Act (ADA), U.S. Department of Agriculture regulations on school nutrition programs, and the Family Educational Rights and Privacy Act (FERPA).

Section 504 of the Rehabilitation Act of 1973

The Office for Civil Rights (OCR) of the U.S. Education Department enforces Section 504. The following guidance is excerpted from OCR’s “Frequently Asked Questions About Section 504 and the Education of Children with Disabilities,” <http://www2.ed.gov/about/offices/list/ocr/504faq.html#interrelationship>.

Section 504 is a federal law designed to protect the rights of individuals with disabilities in programs and activities that receive federal financial assistance from the U.S. Department of Education (ED). Section 504 provides: “No otherwise qualified individual with a disability in the United States . . . shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance”

OCR enforces Section 504 in programs and activities that receive federal financial assistance from ED. Recipients of this federal financial assistance include public school districts, institutions of higher education, and other state and local education agencies. The regulations implementing Section 504 in the context of educational institutions appear at 34 C.F.R. Part 104. . . .

To be protected under Section 504, a student must be determined to: (1) have a physical or mental impairment that substantially limits one or more major life activities; or (2) have a record of such an impairment; or (3) be regarded as having such an impairment. Section 504 requires that school districts provide a free appropriate public education (FAPE) to qualified students in their jurisdictions who have a physical or mental impairment that substantially limits one or more major life activities. . . .

The Section 504 regulations require a school district to provide a “free appropriate public education” (FAPE) to each qualified student with a disability who is in the school district’s jurisdiction, regardless of the nature or severity of the disability. Under Section 504, FAPE consists of the provision of regular or special education and related aids and services designed to meet the student’s individual educational needs as adequately as the needs of nondisabled students are met. . . .

Section 504 protects a student (with diabetes) from discrimination or exclusion from education based on disability in any public or private school that receives federal funds. The parent may request that the school write a 504 Plan for an eligible student. The plan documents in writing that a group of people knowledgeable about the student (including the parents/guardians and school nurse) has been convened and that they have specified the agreed-upon aids and services to meet the student’s individual educational needs.

A 504 Plan for students with special health care needs can provide for health or disability-related aids and services that are necessary for a student to participate fully in the school environment and programs. For example, if a student takes prescription medications (such as insulin) during school hours, provision will be made for dispensing and monitoring the medications under the school nurse’s direction.

A 504 Plan should include:

- a school evaluation;
- a letter from the student’s primary care provider describing the disability, related problems, and needed medications and/or treatments;
- aids and services to be provided — physical and instructional;
- an Individual Health Care Plan (IHCP); and
- a copy of the Emergency Information Form for Children with Special Health Needs.

The Section 504 mandate has also been incorporated in 7 CFR Part 15b, USDA regulations, so that schools receiving federal funding must enable students with disabilities (such as diabetes) to fully participate in the child nutrition programs.

Individuals with Disabilities Education Act

The Individuals with Disabilities Education Act (IDEA) assists States and school districts in making a “**free appropriate public education**” available to eligible students. IDEA recognizes “health impairments due to chronic diseases or acute health problems” such as diabetes as one of thirteen disability categories.

Under IDEA, a “free appropriate public education” means special education and related services provided under public supervision and direction, in conformity with an individualized education program, at no cost to parents/guardians.

A student who has diabetes and who is making effective educational progress in the regular education program does not need a special education evaluation, an IEP, or special education services. Whether such a student is in regular education or special education, however, the student has the right to a free appropriate public education and to have the school provide related aids and services designed to meet the individual educational needs of the students with disabilities as adequately as the needs of students without disabilities are met, under Section 504 (discussed above) and the ADA (discussed below).

American with Disabilities Act - Title II

Title II of the Americans with Disabilities Act (ADA), enacted in 1990, prohibits discrimination against qualified individuals with disabilities in state and local government programs and services, including public schools.

The ADA specifies that public entities and public accommodations must ensure individuals with disabilities full access to and equal enjoyment of all facilities, programs, goods, and services. In this respect, the ADA tracks the requirements of Section 504, prohibiting discrimination on the basis of disability by programs receiving federal funding, such as reimbursement under the school meal programs.

Title II of the ADA does not impose any major new requirements on school districts because the requirements of Title II and Section 504 are similar. Virtually all school districts receive federal financial assistance and have been required to comply with Section 504 since the 1970's.

The ADA also extends many of the rights and duties defined by Section 504 to public accommodations such as museums, private schools, and child care programs. See ADA – Title III, below.

Americans with Disabilities Act - Title III

Title III of the ADA extends requirements for public accommodations to privately owned facilities.

Thus, all private schools participating in the federally funded child nutrition programs must ensure that children with disabilities have full access to receive school meals.

USDA Non-discrimination regulation 7 CFR 210.10

(1) *Exceptions for medical or special dietary needs.* Schools must make substitutions in lunches and afterschool snacks for students who are considered to have a disability under 7 CFR Part 15b and whose disability restricts their diet. Schools may also make substitutions for students who do not have a disability but who cannot consume the regular lunch or afterschool snack because of medical or other special dietary needs.

Substitutions must be made on a case by case basis only when supported by a statement of the need for substitutions that includes recommended alternate foods, unless otherwise exempted by FNS (Food and Nutrition Service). Such statement must be signed by a physician.

GLOSSARY OF DIABETES TERMS

Americans with Disabilities Act (ADA). 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.

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 coated 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.

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.

Celiac Disease. An autoimmune disorder of the small intestine and is caused by a reaction to a gluten protein found in wheat, rye, oats and barley. Treatment of this disorder is a gluten free diet.

Continuous Glucose Monitoring (CGM). An electronic system used to collect additional information for assessing blood glucose patterns of students with diabetes. With CGM a sensor catheter is inserted under the skin. The sensor does not measure glucose levels in the bloods, but measures glucose levels in the fluid under the skin. CGM does not replace blood glucose monitoring by fingerstick testing.

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.

Cystic Fibrosis. A disorder affecting the exocrine (mucus) glands of the lungs, liver, pancreas and intestines causing progressive disability due to multi-system failure.

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 is 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.

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.

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.

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.

REFERENCES

- American Association of Diabetes Educators. (2000). Management of children with diabetes in the school setting. *Diabetes Educator*, 26(1), 32–35.
- American Association of Diabetes Educators. (1994). AADE position statement: Diabetes control and complications trial. *Diabetes Educator*, 20(2), 106–8.
- American Diabetes Association. (2000). Type 2 diabetes in children and adolescents: Consensus statement. *Diabetes Care*, 23, 381–389.
- American Diabetes Association. (2004). Diabetes care in the school and day care setting. *Diabetes Care*, 27, S122–S128.
- Arnold, M. & Silkworth, C. (Eds.). (1999). *The school nurse's source book of individualized healthcare plans, vol. II*. North Branch, MN: Sunrise River Press.
- Barrett, J. C., Goodwin, D. K. & Kendrick, O. (2002). Nursing, food service, and the child with diabetes. *Journal of School Nursing*, 18(3), 150–156.
- Bierschbach, J. L., Cooper, L. & Liedl, J. A. (2004). Insulin pumps: What every school nurse needs to know. *Journal of School Nursing*, 20(2), 117–123. Review. PMID: 15040760.
- Bloomgarden, Z. T. (2004). Type 2 diabetes in the young: The evolving epidemic. *Diabetes Care*, 27, 998–1010.
- Blum, M. (2002). Are school nurses using the recommendations of the Diabetes Control and Complications Trial in the care of students with diabetes? *Journal of School Nursing*, 18(3), 138–143.
- Brown, P. & Kent, M. (2000). *Guidelines for the care of students with diabetes in the school setting*. Trenton, NJ: New Jersey Department of Education.
- Burdick, J., Chase, H. P., Slover, R. H., Knieval, K., Scrimgeour, L., Maniatis, A. K. & Klingensmith, G. J. (2004). Missed insulin meal boluses and elevated hemoglobin A1c levels in children receiving insulin pump therapy. *Pediatrics*, 113(3 Pt 1), e221–224.
- Clarke, W. (1999). Advocating for the child with diabetes. *Diabetes Spectrum*, 12, 230–236
- Franz, M. (Ed.). (2003). *A core curriculum for diabetes educators* (5th ed.). Chicago: American Association of Diabetes Educators.
- Fredrickson, L. & Griff, M. (2000). *Pumper in the school, insulin pump guide for school nurses, school personnel and parents/guardians: MiniMed Professional Education, your clinical coach* (1st ed.). Northridge, CA: MiniMed.
- Joslin Diabetes Center, Inc. (2010) *Joslin's Guideline for Detection and Management of Diabetes in Pregnancy*. Retrieved in 2010 from https://www.joslin.org/joslin_clinical_guidelines.html.

Kollipara, S. & Warren-Boulton, E. (2004). Diabetes and physical activity in school. *School Nurse News*, 21(3), 12–16.

Laver Bierschbach, J., Cooper, L. & Liedl, J. A. (2004). Insulin pumps: What every school nurse needs to know. *Journal of School Nursing*, 20(2), 117–123.

Marschilok, C. (2004). Update on insulin pump therapy. *School Nurse News*, 21(2), 10–11.

Miller, M. M. (2003). Insulin pump therapy. An overview. *Advance for Nurse Practitioners*, 11(11), 61–66.

Nabors, L., Lehmkuhl, H., Christos, N. & Andreone, T. L. (2003). Children with diabetes: Perceptions of supports for self-management at school. *Journal of School Health*, 73(6), 216–221.

National Association of School Nurses. Inc. (2006). *Position statement: School Nurse Role in Care and Management of the Child with Diabetes in the School Setting*. Retrieved in 2011 from <http://www.nasn.org/Portals/0/positions/2006psdiabetes.pdf>

National Diabetes Education Program. (2009). *Guiding Principles for Diabetes Care*, NIH Publication No. 09-4343.

National Diabetes Education Program. (2010). *Helping the student with diabetes succeed: A guide for school personnel*. Bethesda, MD: Author. Retrieved in 2011 <http://www.ndep.nih.gov/>.

Plunkett, L., & Weltner, L. (2006). *The Challenge of Childhood Diabetes: Family Strategies for Raising a Health Child*, .Lincoln, NE:iUniverse, Inc.

Quarry-Horn, J. L., Evans, B. J. & Kerrigan, J. R. (2003). Type 2 diabetes mellitus in youth. *Journal of School Nursing*, 19(4), 195–203.

Sheetz, A. H. & Goodman, I. F. (Eds.). (2007). *The Comprehensive School Health Manual*. Boston, MA: Massachusetts Department of Public Health.

Skyler, J. S. (Ed.). (1998). *Medical management of type 1 diabetes* (3rd ed.). Alexandria, VA: American Diabetes Association.

RESOURCES

American Association of Diabetes Educators (AADE)

100 W. Monroe Street, Suite 400
Chicago, IL 60603
Phone: 800-338-3633
Fax: 312-424-2427
Website: <http://www.aadenet.org>

AADE is a professional association dedicated to promoting the expertise of the diabetes educator, ensuring the delivery of quality diabetes self-management training to the patient and contributing to the future direction of the profession.

American Diabetes Association

Attn: National Call Center
1701 North Beauregard Street
Alexandria, VA 22311
Phone: 800-DIABETES (800-342-2383)
E-mail: AskADA@diabetes.org (for diabetes-related questions or to request a diabetes information packet)
Website: <http://www.diabetes.org>

The mission of American Diabetes Association is to prevent and cure diabetes and improve the lives of those affected by diabetes. Specific resources are available for diabetes care in schools; parents and children including Planet D a website just for kids and teens. There are offices around the country, including:

- **American Diabetes Association (Local)**

330 Congress Street, 5th Floor
Boston, MA 02110
Phone: 888-DIABETES (888-342-2383) or 617-482-4580
Fax: 617-482-1824

Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd
Atlanta, GA 30333
Phone: 800-CDC-INFO (232-4636)
888-232-6348 TTY
Fax: 312-424-2427
Website: www.cdc.gov/diabetes

CDC's Division of Diabetes Translation translates diabetes research into daily practice to understand the impact of the disease, influence health outcomes, and improve access to quality health care. Diabetes topics and resources include data and trends, school support and resources including children's stories and curriculum on preventing and living with diabetes, emergency preparedness in schools.

Features articles and resources for teens and kids, including *Juvenation*, social networking, and *Countdown* magazines. There are multiple chapters, including:

- **Juvenile Diabetes Research Foundation**

New England Chapter/Bay State

20 Walnut Street, Suite 318

Wellesley Hills, MA 02481

Phone: 781-431-0700

Fax: 781-431-8836

E-mail: baystate@jdrf.org

Website: <http://www.jdrf.org/baystate>

Massachusetts Diabetes Prevention and Control Program

250 Washington Street, 4th Floor

Boston, MA 02108

Phone: 617-624-5070

Fax: 617-624-5990

Website: www.mass.gov/dph/diabetes

National Diabetes Education Program (NDEP)

National Diabetes Education Program

One Diabetes Way

Bethesda, MD 20814-9692

Phone: 301-496-3583

(Office of Communications and Public Liaison, NIDDK, NIH)

Phone: 800-438-5383 (to order educational materials)

E-mail: ndep@info.nih.gov

Website: <http://www.ndep.nih.gov/hcp-businesses-and-schools/Schools.aspx>

NDEP is a partnership of NIH, CDC, and more than 200 public and private organizations, including the Massachusetts Diabetes Prevention and Control Program. Publications include *Helping the Student with Diabetes Succeed*, a comprehensive guide designed to empower school personnel, parents/guardians, and students to create a safe learning environment and equal access to educational opportunities for all children with diabetes.

National Diabetes Information Clearinghouse (NDIC)

1 Information Way

Bethesda, MD 20892-3560

Phone: 800-860-8747

Website: <http://diabetes.niddk.nih.gov/index.htm>

NDIC is an information dissemination service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health (NIH), one of eight health agencies of the Public Health Service under the U.S. Department of Health and Human Services. NDIC was established in 1978 to increase knowledge and understanding about diabetes among patients, health care professionals, and the general public. Provides access to hundreds of topics and easy-to-read materials; some available in Spanish.

ADDITIONAL RESOURCES

These resources have been listed to provide assistance in understanding and managing diabetes in schools. The Massachusetts Department of Elementary and Secondary Education does not endorse any of the websites or products.

Mayo Foundation for Medical Education and Research (MFMER)

200 First St. S.W.
Rochester, MN 55905
Website: [MayoClinic.com](http://www.mayoclinic.com)

Source of comprehensive, useful, up-to-date information a variety of health conditions including hypoglycemia and hyperglycemia.

Website: <http://www.mayoclinic.com/health/hypoglycemia/DS00198>

Website: <http://www.mayoclinic.com/health/hyperglycemia/DS01168>

WebMD

111 8th Ave
7th Floor
New York, NY 10011
Phone: (212) 624-3700
Website: [MedicineNet.com](http://www.MedicineNet.com)

This online, healthcare media publishing company is part of the WebMD network. It provides easy-to-read, in-depth, authoritative medical information for consumers via a user-friendly, interactive website.

Website: <http://www.medicinenet.com/hypoglycemia/article.htm>
features facts about hypoglycemia, a slide show, and latest tips on care.

Website: <http://www.medicinenet.com/hyperglycemia/article.htm>
features facts about hyperglycemia, a slide show, and latest medical news.

American Red Cross National Headquarters

2025 E Street, NW
Washington, DC 20006
Phone: (202) 303- 5000
Website: <http://www.redcross.org/>

Factsheet with instructions on preparing for emergencies, knowing when and how to shelter-in-place for schools.

English

<http://www.redcross.org/www-files/Documents/pdf/Preparedness/shelterinplace.pdf>

Spanish

http://www.redcross.org/www-files/Documents/pdf/Preparedness/shelterinplace_sp.pdf



THE MASSACHUSETTS DIABETES IN SCHOOL TASK FORCE • •

A collaboration between the Massachusetts Department of Elementary and Secondary Education, the Massachusetts Department of Public Health, School Health Services, the Massachusetts School Nurse Organization, the School Nutrition Association of Massachusetts, the Children's Hospital, Boston, the Joslin Diabetes Center, Boston, Harvard Medical School, Boston, the University of Massachusetts Medical Center and parents of children with diabetes. Information and advice on this project was provided by:

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250 Washington Street, Boston, Massachusetts 02108



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