

HEALTH POLICY
RHODE ISLAND SCHOOL FOR THE DEAF
BOARD OF TRUSTEES

Management of Diabetes

Purpose

To provide guidelines for the management, coordination of care of the student with diabetes in school.

To enable students with diabetes to attend school regularly and fully participate in educational, physical, and after school activities.

To provide for the immediate safety and long term health needs of students with diabetes.

To minimize the possibility of diabetes related emergency situations.

What is diabetes?

Definition: Diabetes is a chronic disorder of carbohydrate, fat and protein metabolism characterized by hyperglycemia (high blood sugar) and glycosuria (sugar in the urine) resulting from inadequate production or inadequate utilization of insulin. Signs and symptoms of diabetes include excessive thirst, excessive urination, hunger, weight loss and fatigue. The long term consequences of chronic hyperglycemia include potential damage to eyes, kidneys, nerves, heart and blood vessels. The management of diabetes and the prevention of complications requires a balance of insulin administration, food planning, and physical activity.

Types of diabetes include:

- Type 1 results from the body's failure to produce insulin. A person with Type 1 diabetes needs insulin daily to live.
- Type 2 diabetes results from the body's inability to use insulin adequately or insulin resistance. Type 2 diabetes is managed with diet, exercise and medications.
- A third, less common type is gestational diabetes. This is a temporary diabetic state that occurs during pregnancy and is managed with diet and insulin.

Responsibilities of the School Nurse

The school nurse is the leader of the team to plan, assess, communicate and implement the plan of care for the student with diabetes. The school nurse will also determine if a student is capable to self administer medication and do blood glucose testing in the classroom. This determination is based on the nurse's assessment of each student individually, with input from the parent and the medical provider. A medical order signed by the parent and the medical provider must be in place in order for students to receive medication such as insulin, glucagon and for procedures like blood glucose testing to be done. The school nurse is responsible for the delivery of care for the diabetic student.

Planning and Interventions for Students with Diabetes in School

Optimal blood glucose control helps to promote normal growth and development and supports optimal learning. Blood glucose testing is a tool used to monitor the successful balance between food, exercise, and insulin or oral medication needed for optimal blood glucose control. Research has shown that maintaining blood glucose levels within the target range can prevent or delay the long-term complications of diabetes. The following areas are key elements to diabetes management.

Meal Plans

Individualized meal plans are developed based on nutritional needs, food choices, preferences and medication regimen. Carbohydrate counting is the most common method for meal planning. With some insulin regimens, it is important to eat the right amounts of food at the right times to balance with insulin. Insulin works even when the food is not eaten. The healthcare provider in conjunction with the student and family will develop an effective meal plan.

Exercise and Physical Activity

Exercise and physical activity are critical parts of diabetes management. The Rhode Island School for the Deaf will offer students with diabetes full participation in physical education classes and team sports. Accommodations may be needed and the details of which are provided in the student's Individualized Health Plan (IHP).

Insulin

Insulin lowers the blood glucose levels and helps keep the blood glucose within a normal range. A calculated amount is given based on child's age, blood glucose levels, expected carbohydrate intake, weight, physical activity and expected insulin sensitivity. Doses are adjusted as determined by the healthcare provider. Delivery systems include:

- Syringe (with/without automatic injector aids)
- Insulin Pen, specify type of insulin
- Insulin Pump, specify type of pump and type of insulin

Upon completion of the assessment, the school nurse shall develop a plan that addresses both routine and emergency care. The plan shall outline what will be done if the nurse is not available. Copies of these plans should be shared with the appropriate school staff on a need to know basis. Barriers or obstacles to participation and care in school should be identified and addressed in the care plan. It is important to remember that the goals for the student are safety and independence in controlling this lifelong chronic condition.

The following should be considered when developing health care plans for the student with diabetes:

Developmental considerations

- Parental concerns
- Student concerns and their understanding of diabetes management
- Equipment needed
- Psycho-social issues
- Classroom strategies and accommodations
- Snacks
- Blood glucose testing/ ketone testing
- Medication administration
- Schedule – physical education, lunch, recess
- Emergency care
- Staff training
- Educational planning coordination with other team members including the parent, the healthcare provider, and diabetes care specialist

Safety considerations

- Disaster preparedness: Lockdown, Sheltering In-Place and Evacuation

Emergency Protocol/Plan

When a student is identified as having diabetes, the school nurse will develop an individualized emergency protocol/plan with parent and health care provider input. The following should be considered when developing emergency protocol/plan:

The emergency protocol/plan addresses hypoglycemia and hyperglycemia, the healthcare providers' emergency orders and when to call 911.

The student's individual symptoms for hypo and hyperglycemia.

Hypoglycemia symptoms can progress to a serious medical emergency and should be handled immediately and in the classroom.

Plans should include accommodations so that a student who is feeling "low" is never unaccompanied to the health office alone.

The student's ability to identify when he or she is "low".

Hyperglycemia symptoms can progress to a serious medical emergency and requires action steps that should include careful monitoring and follow-up.

Identify who has the daily responsibility for the management of the student's diabetes (unless the parent assumes this responsibility).

Emergency kit for hypoglycemia:

Determine if student is capable to carry.

Contents should include quick acting sugar sources to treat hypoglycemia.

Determine where the kit is stored (consider multiple locations).

Label the kit with directions.

Include glucagon, as ordered.

Orders

The healthcare provider will submit the Rhode Island statewide diabetes order form to complete the child's diabetes orders for school. If this form is not used, it is recommended that the orders address all elements included on the statewide form. Parents/guardians are responsible for providing the completed order form to the school.

Equipment

The school should provide the following:

Sharps container

Locked storage for syringes

Safe storage of insulin

Access to medication, testing equipment and snacks

The parent is expected to provide supplies for ordered interventions at school:

Insulin and syringes or insulin pen

Blood glucose meter, test strips, lancets

Urine ketone test strips

Snacks

Hypoglycemia emergency kit
Glucagon
Batteries for meter and pump if applicable
Pump and pump supplies if appropriate
Medical alert identification such as bracelets, necklaces, shoe tags, etc.

Blood Glucose Monitoring

Blood glucose monitoring may be ordered by the healthcare provider and/or diabetes care specialist before lunch, before exercise, before snacks and for symptoms. It is reasonable for blood glucose testing to be performed in the health office, but requests for testing in the classroom may be made. The school nurse will consider requests for blood glucose testing in the classroom on a case by case basis by evaluating the following:

Has the healthcare provider approved blood glucose monitoring in classroom, Independently by the student?

Is the student able to perform the procedure safely - for him/herself and the protection of others?

Is the student aware of blood spill clean up procedures?

Will the equipment be safely stored?

Will used lancets and waste materials be disposed of in the classroom?

How does the student feel about performing the procedure in front of classmates?

Can the procedure be done with minimum distraction to others?

Has the classroom teacher been informed?

If the results of the testing indicate the need for further attention from health staff, have plans been made for the student to be accompanied to the health office?

Does the student correctly respond to the blood glucose result?

Is there a need for a presentation on diabetes to the class?

Administration of Insulin in School

Should a student require insulin to be administered during school, many issues must be considered:

- Medication order including method of administration, signed by a physician, physician assistant, or nurse practitioner and the parent.
- Proper storage of insulin and supplies (Once opened, vials of insulin should be dated and used within 30 days, stored away from direct light, extreme heat and freezing temperatures)
- Self administration, supervision, or assistance required
- Safe disposal of sharps
- Privacy for student
- Safety of the student and others
- Responsibility/maturity of the student
- Request by the healthcare provider that the student self-administer medication
- Documentation and monitoring of the self administration

Each case should be reviewed individually and with the cooperation of parents/guardian, administrators, health care provider, student and nurse. It is reasonable to require that insulin be administered in the health office. Requests to administer insulin outside of the health office should be evaluated individually keeping in mind the safety of the student and others. Multi-dose insulin administration devices may present a hazard to other students should the device be illegally obtained and used by another student.

Daily Accommodations and Educational Planning

Unrestricted Use of Restroom

Increased thirst and frequency of urination are often symptoms when a student with diabetes is experiencing a hyperglycemic reaction. Unrestricted use of the restroom should be allowed with as little disruption to the student's education as possible. Free and unrestricted access to sugar free liquids should be provided to prevent possible dehydration. The teacher should alert the school nurse to these symptoms because it may indicate a need to readjust the student's diabetes management plan.

Snacks

Some students with diabetes require snacks during the school day (i.e., a midmorning snack, mid-afternoon snack or when symptomatic). Snacks should be kept in strategic places, e.g., the health office, classrooms and in special areas.

Arrangements for snacks should be made with the least disruption to the student's school day and can be eaten in the classroom. The family should provide snacks.

Educational Planning

The needs of the student with diabetes are met with a thorough nursing assessment and development of care plans; however, some students with diabetes require additional educational accommodations. If the student requires more specific educational accommodations, a 504 plan may be developed. If a student with diabetes qualifies for special education services, an Individual Education Plan (IEP) may include specific accommodations.

The school nurse is an integral part of the educational team and is vital in the planning of educational accommodations for the student with diabetes. Special issues that may need to be considered:

- Classroom accommodations for testing, including quizzes, exams, performance and assessment tests
- Accommodations because of a vocational assignment
- Schedules that can accommodate blood glucose monitoring, snacks and physical education classes
- Adaptive physical education
- Field trip/school sponsored activities
- Bus accommodations
- Minimizing instruction time or recess time missed because of nutritional and/or diabetes management accommodations
- Extra curricular activities
- Methods/strategies for students to use in obtaining class work missed due to time in the health office for care of hyper/hypoglycemia

Transportation:

The health care plan should address transportation needs for the student with diabetes. In general, a student with well-managed diabetes should not require special transportation. Each

student's needs should be evaluated individually. It is recommended that the school nurse provide consultation on any requests for special transportation for the student with diabetes.

Field Trips/Off-Site School Sponsored Activities:

All students are afforded the right to fully participate in educational activities. No student is to be denied participation in a field trip because of the need for medication/treatment or requirement of additional assistance. The teacher should access local school system policy regarding field trips and school-sponsored activities and give sufficient notice to the school nurse so that a plan can be put into place for any student with special health needs such as diabetes and which may include a nurse accompanying a student. Prior to the field trip, the school nurse should make sure that the teacher/staff member in charge has copies of the care plan for the student.

Medications needed for diabetes should be administered to students during school-sponsored trips/activities when necessary or as ordered. Medications must be administered in compliance with the Rhode Island School Health Services Guideline: *Administration of Medication in Schools*. The school nurse, in collaboration with the school administrator, parents, and healthcare provider determines what accommodations are needed during a field trip/school-sponsored activity.

Coordination and Case Management

Each school team member is responsible for implementation of the emergency protocols/plans. Responsibility of coordination with other team members would include:

Director and Administrator: Overall responsibility for the education and safety of the student

Bus Drivers: Responsibility for student on bus, communicates health problems or concerns to school official, school nurse, and parent

Food Services Staff: Assistance with dietary accommodations as necessary

Special Ed Director: Assistance with transportation issues, home teaching and attendance issues

School Counselor: Disability awareness, assistance with support groups/counseling needs, and assistance with educational planning

School Nurse: Development of health care plan and coordination of the school-related management of the student with diabetes. The school nurse is the liaison between the healthcare provider, school staff, administration, Special Ed Director, parents/guardian and student. The school nurse can also refer the student and/or family for counseling, support groups, and access to medical care.

School Psychologist: Assistance with any behavioral strategies

Teachers, including physical education teachers: Responsibility for student in class, communication of health problems or concerns to school nurse, school official and parent.

For students who participate in field trips and other school sponsored activities, the school nurse is a resource to evaluate and plan for student needs.

Staff Training

Training of appropriate staff should include:

- Definition of diabetes
- Classroom accommodations
- Bus accommodations
- Field trip/school sponsored activities
- Blood glucose monitoring
- Symptoms to report to the school nurse
- Confidentiality
- Understanding of their role in the implementation of the emergency protocol/plan
- Substitute plans (teacher, school health staff, transportation, and food services)
- Available resources

Evaluation

Evaluation is an ongoing process and should include the following:

- Orders reviewed with family and healthcare provider annually and as necessary
- Documentation of medications and treatments given
- Communication with the healthcare provider and family
- Need for staff training
- Classroom observation
- Effectiveness of the plan to meet the student's health and educational needs
- Assessment and documentation of student's response to the management plan

GLOSSARY

Blood Glucose Meter: A device that measures how much glucose (sugar) is in the blood. Meters measure the blood glucose with a test strip on which a sample of blood, usually from the finger, has been applied.

Glucagon: A hormone that stimulates the release of stored glucose from the liver and is used to treat severe hypoglycemia (low blood glucose).

Health Appraisal: The process by which a designated school health services professional identifies health problems that may interfere with learning.

Hyperglycemia: A high blood glucose level that can result from a mismatch of insulin, food intake, stress, illness and exercise. Symptoms include increased thirst, frequent urination, increased hunger, fatigue, irritability and blurred vision.

Hypoglycemia: A low blood glucose level that can result from a mismatch of insulin, food intake and exercise. Symptoms include feeling shaky, weakness, sudden hunger, pallor (paleness), sweating, and headache and behavior changes. Severe hypoglycemia can lead to seizures and unconsciousness.

Insulin Pump: A device that delivers a continuous supply of insulin through an infusion set (plastic tubing) which is attached to the body and it is approximately the size of a cell phone. The goal is to achieve near normal blood glucose levels over 24 hours per day.

Insulin Pen: A pen-like device that is used to administer insulin.

Ketones: Chemicals that the body makes when there is not enough insulin in the blood and the body must break down fat. Ketones build up in the blood and then are excreted in urine.

Nursing Assessment: The act of gathering and identifying data about a client to assist the nurse, the student and the student's family in identifying the student's problems and needs.

RESOURCES

Copied and edited from Management of Students with Diabetes Mellitus in Schools, Maryland State School Health Services

American Academy of Pediatrics (AAP): www.aap.org. The AAP is a professional membership organization committed to the attainment of optimal physical, mental and social health and well being for all infants, children, adolescents and young adults.

American Association of Diabetes Educators (AADE): www.aadenet.org. The AADE is a multidisciplinary organization of health professionals who provide diabetes care and education. This website has diabetes links including information on diabetes in children and adolescents.

American Diabetes Association (ADA): www.diabetes.org. The mission of the ADA is to prevent and cure diabetes and to improve the lives of people with diabetes. The ADA is a non-profit organization that provides diabetes research, information and advocacy. This association offers a number of programs for children and adolescents with diabetes. For school training information, please go to www.diabetes.org/schooltraining

American School Health Association (ASHA): www.ashaweb.org. The mission of ASHA is to promote and improve the well-being of children and youth by supporting comprehensive school health programs. This association publishes a journal and a book about managing school-age children with chronic health conditions.

Centers for Disease Control and Prevention (CDC): www.cdc.gov, www.cdc.gov/diabetes, www.cdc.gov/nccdphp/dash. The CDC serves as the national focus for developing and applying disease prevention and control, environmental health and health promotion and educational activities to improve the health of the people of the United States. The above websites are CDC divisions related to diabetes.

Children with Diabetes: www.childrenwithdiabetes.org. This website serves as an online community for children, families and adults with diabetes. The website has helpful information about managing diabetes in the school setting; included are sample 504 plans and IEPs.

Diabetes Exercise and Sports Association: www.diabetes-exercise.org. This nonprofit service organization is dedicated to enhancing the quality of life for people with diabetes through exercise.

Joslin Diabetes Center: www.joslin.harvard.edu. The Joslin Diabetes Center and its affiliates offer comprehensive services for children and adults with diabetes, including educational programs to help children and their families to better manage the disease.

Juvenile Diabetes Research Foundation International (JDRF): www.jdf.org. The goal of this organization is to find a cure for diabetes and its complications through the support of research.

National Diabetes Education Program (NDEP): www.ndep.nih.gov. The NDEP is a federally sponsored program of NIH and CDC for diabetes prevention and improving diabetes treatment and outcomes for people with diabetes. It has published, *Helping the Student with Diabetes Succeed*.

Pediatric Adolescent Diabetes Research and Education Foundation (PADRE): www.padrefoundation.org. This foundation was established to provide educational programs and clinical and scientific research of juvenile diabetes. PADRE sponsored the Pediatric Education for Diabetes in Schools (P.E.D.S.) program.

Starbright Foundation: www.starbright.org. The Starbright Foundation is a nonprofit organization dedicated to developing projects that help children and teens address the psychosocial challenges that accompany chronic diseases.

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK):
<http://www.niddk.nih.gov/>

Helping the Student with Diabetes Succeed, published by the U.S. Department of Health and Human Services and the National Diabetes Education Program, a joint program of the National Institutes of Health and the Centers for Disease Control and Prevention;
http://ndep.nih.gov/diabetes/pubs/Youth_SchoolGuide.pdf

Pediatric Education For Diabetes in Schools (National Version), developed by the PADRE foundation in collaboration with NASN; www.pedsonline.org

Data Collection

It is essential that the school nurse be well informed on all aspects of medical, educational, and psychosocial issues regarding students with diabetes. The school nurse will collect information from a review of medical and educational records (i.e., the school health record, the Student Record Card, emergency health card, and the student cumulative education record). Additional information should be obtained from:

- Parent interviews and/or home visits
- Student interview
- Physician/healthcare provider
- Diabetes educator working with family
- Teaching staff
- Classroom observations

Assessment

The school nurse should assess the student with diabetes using standard appraisal procedures. The school nurse should be cognizant of policies regarding record releases, information sharing, and confidentiality. Assessment of the student with diabetes should include but not be limited to the following:

Nursing Appraisal/Assessment Outline for Students with Diabetes

1. Identifying Information/Contact Information:

- Name of parents/guardian, address, phone number and emergency contact
- Name of primary care provider and phone number
- Name of diabetes care provider and phone number

2. Personal Health History/Diabetes History:

- Current diagnosed medical conditions
- Family history of diabetes
- Initial diagnosis, onset date, progress of disease, honeymoon phase
- History of diabetes emergencies, hospitalizations, emergency room visits, previous glucagon use
- Latest hemoglobin/A1C

Current patterns of blood glucose levels
Number of days absent in the past year
Limitation of activities
Frequency of hypo or hyperglycemic reactions
Student awareness of symptoms of hypo and hyperglycemic reactions
Other health concerns, including but not limited to, vision, neuropathy, nephropathy
Medications in addition to insulin

3. School Diabetes Management

Insulin regimen:

Type(s) of insulin, frequency given

Method of administration, syringe, pen, pump

How dose is determined

Will insulin be administered at school?

Self administered by student; amount of supervision required

Blood glucose testing:

Frequency, reasons for

Equipment used

Target range of blood glucose levels

Type of pump/pen/syringe

Type of insulin

Basal rates

Insulin/carb ratio

Correction factor(s)

Pump manufacturer hotline

Ketone testing

Frequency, reasons for

Type of ketone test strips used

Nutritional requirements:

Meal plan, how determined, carbohydrate counting

Schedule of meals and snacks

Will the student bring lunch or purchase at school?

Recommended snacks, where will snacks be eaten and stored

Student's level of understanding and independence

Hypoglycemia, how treated at home

Hyperglycemia, how treated at home

Questions pertinent for students on an insulin pump:

What type of insulin pump

How long on pump therapy

Is the student independent in the following areas:

Counting carbohydrates

Calculating an insulin dose

Bolusing an insulin dose

Resetting basal rate profiles

Setting a temporary basal rate

Disconnecting pump

4. Educational information/considerations:

Reconnecting pump at infusion set

Preparing infusion set for insertion

Troubleshooting alarms and malfunctions

Giving self-injection if needed

Changing batteries

Need for or existence of 504 plan, IEP

5. Psycho-social considerations:

Family status, support available

Family stresses

Ability of student and family to cope with disease

Student's and family's understanding of the condition

History of diabetes education

Developmental issues

Disability awareness needed in classroom

Involved in disease related support groups

Any issues related to access to healthcare and diabetes supplies? Health insurance needs

Cultural issues

