

Michigan Department of Education  
Michigan Department of Community Health

# Management of the Student with Diabetes in Schools

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MODEL SCHOOL NURSE GUIDELINE

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### **Foreword**

These guidelines contain recommendations for minimum standards of care and current best practices for the health service topics addressed. They have been developed as a means to provide consistent and safe care to the students. Specific laws and regulations that direct school nursing practice or other health services are identified in the guidelines. This policy reflects guidelines set forth in a Michigan Department of Education memorandum dated November 20, 2002.

### **Purpose**

This document will provide guidelines for the management and coordination of care of the student with diabetes in schools.

### **Introduction**

Students with diabetes attending school require a thorough assessment of their health needs and specific plans that take into consideration special accommodations they may require in school. A school nurse can best develop this. All students have the right to fully participate in educational activities. Any student with a chronic condition such as diabetes cannot be denied access to any school activity based upon their needs related to the medical condition. This comprehensive guideline outlines considerations that must be addressed as the school nurse develops an individualized care plan for the student with diabetes in conjunction with the family, the primary care provider, and the diabetes care specialist.

When a student with diabetes enters school or a student is diagnosed with diabetes, the school nurse is the lead team member in assessing his/her health needs, performing a nursing appraisal/assessment, and developing a care plan to meet his/her needs in the school setting. The school nurse is also responsible for informing appropriate school personnel of the special health needs of students with diabetes and providing guidance regarding their need for accommodations (i.e.; blood glucose testing, transportation, field trips, and participation in educational activities). Additionally, the school nurse may provide health education to students with diabetes.

### **Definition**

Diabetes is a chronic disorder of carbohydrate, fat and protein metabolism characterized by hyperglycemia and glycosuria resulting from inadequate production or utilization of insulin. Symptoms of diabetes include excessive thirst, excessive urination, excessive 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 require 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.
- Type 2 diabetes is the result of 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, gestational diabetes, is a temporary diabetic state that occurs during pregnancy and is managed with diet changes and insulin.

### **Legal Implications**

Both IDEA and Section 504 of the Rehabilitation Act of 1973 require schools to provide accommodations for students if their health condition affects their education. Students with diabetes, under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, must be given "reasonable accommodation" in the school setting so that their disease can be managed successfully and their schooling not adversely affected by their disability or perceived disability.

### **Management of Diabetes in the School Setting**

Diabetes is one of the most common chronic diseases of childhood. The number of children with diabetes who require accommodation during the school day, such as blood glucose testing, between meal snacks, and insulin injections, is increasing. The need for careful control and self-management of diabetes by the child/family is an essential component of care in order to prevent short and long term complications. Communication between parents/guardians, school personnel, the student's healthcare providers, and the school nurse is important to successfully manage diabetes.

Aggressive management of Type 1 diabetes involves frequent blood glucose monitoring and sometimes 4 or 5 insulin injections each day. Lowering the average blood glucose has been scientifically proven to delay or postpone the devastating long-term complications of diabetes (blindness, kidney failure, and nerve damage). Part of the child's diabetes treatment plan may routinely occur during school hours. Management of a student's diabetes should be incorporated into a student's IHP. Information that should be in the IHP includes:

- the definition of hyperglycemia for that particular student, and the recommended treatment;
- the definition of hypoglycemia and an emergency action plan;
- frequency of blood glucose testing;
- written orders from the student's physician outlining the dosage and indications for insulin administration, ketone testing and/or glucagon administration, if needed;
- times of meals and snacks, and indications for additional snacks for exercise;
- full participation in exercise and sports, any contraindications to exercise or accommodations that must be made for that particular student;
- accommodations for school trips, after-school activities, class parties, etc.;
- education of all school personnel who may come in contact with the student about diabetes, on how to recognize hypoglycemia and hyperglycemia, and when to call for assistance;
- medical and/or treatment issues that may affect the educational progress of the student with diabetes; and
- how to maintain communications with the student, the parents/guardians, the child's healthcare team, the school nurse, and the educational staff.

In order for children to receive medication or have invasive medical procedures performed (e.g., blood glucose testing) in school, an order from an authorized prescriber must be in place. The school can only authorize medication administration and/or procedures based on the orders from a physician, not a parent.

Regardless of the service delivery model, the registered nurse is always the leader of the school health *nursing* team. The registered nurse, *the expert in nursing and health*, makes the decisions about how care is provided and who provides the care to the child in the school system.

### **School Nurse's Role**

Students with diabetes who attend school require a thorough nursing assessment of his/her health needs to enable them to attend school regularly and to fully participate in educational programs. The school nurse will develop specific plans that take into consideration special accommodations students may require in school. This guideline will assist the school nurse in developing an individualized healthcare plan (IHP) for the student with diabetes in conjunction with the family and the primary care provider.

When a student who has diabetes enters a school, the school nurse is the lead team member in assessing the health needs of the student, performing a nursing appraisal/assessment and developing a plan of care that meets the health needs of the student in school. The school nurse is responsible for making all other school personnel involved with the student aware of the student's health needs. Additionally, the school nurse may provide health education to the student and guidance regarding the student's needs for accommodations for transportation, intermittent home teaching and participation in educational activities.

### **Plans/Protocols and Interventions for Students with Diabetes in School**

#### **The Nursing Appraisal/Assessment**

##### **Data Collection**

It is essential that the school nurse be well-informed on all aspects of medical, educational, and social issues regarding students with diabetes. The school nurse collects information from a review of medical and educational records (i.e., the school health record, the Student Health Information Card, and the student cumulative education record). Additional information should be sought from each of the following sources and activities:

- Parent interviews and/or home visits
- Student interview
- Physician/healthcare provider
- Teaching staff
- Classroom observations

##### **Assessment**

Based on review of data, a nursing assessment is completed at the school nurse's discretion. The school nurse should assess the special health needs of a student with diabetes using standard assessment procedures. The school nurse should be cognizant of policies regarding record releases, information sharing, and confidentiality.

The diabetes assessment should include a determination and recommendations regarding whether special accommodations are required due to the student's class schedule, school-sponsored activities, and transportation. Psychosocial concerns regarding the family's living conditions and circumstances, their understanding of diabetes, their compliance with the diabetes regimen, and the need for resources must be addressed.

Based on the assessment, the school nurse decides if an individualized healthcare plan should be developed. This IHP should include:

- Emergency contact information for parents and healthcare providers
- Emergency protocols
- Specific accommodations for the student in school including classroom accommodations if applicable
- Daily treatment plan including blood glucose monitoring and carb counting
- Daily medication plan
- Special instructions (student's class schedule, school-sponsored activities, and transportation, etc.)
- Supplies

**Emergency plans** should outline:

- What is to be done if nurse is not available
- What the school should provide (e.g., access to medication and treatment equipment)
- What the parent should provide (e.g., lancets, blood glucose meter and strips, medications, ketone strips, and other equipment)
- The healthcare provider's emergency orders
- When to call 911
- Disaster preparedness: Lockdown, Sheltering In-Place and Evacuation

(Please note: The Michigan Board of Nursing allows certain nursing functions to be delegated. The decision as to whether the student's healthcare needs can be met by an unlicensed person is made using the criteria for delegation and the nurse's professional judgment. The school nurse will determine the appropriate personnel/staff to which responsibility for monitoring the blood glucose, administering medication and other treatments may be delegated.)

Copies of the documentation from the assessment and the subsequent IHP should be filed in the student's health record. Copies of these plans should be shared with the appropriate school staff on a need to know basis. Copies should be shared with the parents/guardians and healthcare provider. 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.

## **Accommodations**

### **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 suite but requests for testing in the classroom may be made.

Monitoring of diabetes (staff should avoid using the word "testing" just as they should try to avoid "diabetic" and "dieting," because of their subtle negative connotations) has changed in recent years so that more and more youth are checking their own "finger-stick" blood glucose levels. The student's healthcare provider should recommend a target range for blood glucose levels. All blood glucose levels that are monitored in school should be recorded, sent home to be assessed by parents/guardians, and shared with the healthcare provider. As indicated in the student's IHP, parents/guardians should be notified immediately of extremely high or low glucose levels. Some teachers have creatively used examples of these numbers to explore averages, ranges, and graphing.

### **Administration of Insulin in School**

Should a student require insulin to be administered during school, many issues must be considered. Insulin dosage is determined by body size, activity level, state of health, dietary intake, and duration of diabetes, rather than severity. Insulin is usually administered in multiple daily injections or through an infusion pump or infusion pen, but new technologies are developing rapidly. Student responsibility for insulin injections should commence when his/her emotional maturity indicates this is an appropriate goal and it is agreed upon by the school nurse, parents/guardians, the child, and healthcare professionals. The school nurse is responsible for insulin administration and/or supervision (if the student is self-administering), as specified in the IHP.

### **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 suite, 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.

### **Food**

Meal plans are a key component of diabetes treatment and should take into account food preferences, insulin levels, and activity needs. A diabetes meal plan should provide a consistent source of food without large amounts of concentrated sugars. A food plan is a "diet" only when obesity coexists with diabetes. Adjustments for activity changes are also required and snacking needs should be based on blood glucose results with advice from the diabetes treatment team. Whether or not eating school lunches is permitted depends on treatment goals, fat content of meals, and nutritional consistency from day to day.

Special events or holidays do not always have to be celebrated with sugary foods or snacks. Adult event planners at school should consult with the healthcare team and provide adequate notice to parents/guardians so that students with diabetes are able to participate with only minimal changes to what is served. Responsibility for counting carbohydrates should be a collaborative effort among parents/guardians, the student (as appropriate), food service staff, and school nurses.

### **School Participation**

Children with diabetes can be full participants in both curricular and extracurricular school life, including field trips. Knowledgeable and supportive school staff can assist in the treatment of diabetes so that there is minimal interference with learning objectives. Age-appropriate behavior, participation, and educational goals typically do not demand extraordinary adaptations due to diabetes. In cooperation with the family and nursing and medical staff, schools should encourage students with diabetes to reach their full potential.

School attendance should be monitored by parents/guardians, school nurses, and teachers. Because excessive absences may reflect poor glucose control, they should be documented and brought to the attention of the healthcare professionals involved with the diabetes treatment program.

### **Physical Education and Recess**

School exercise may appear to be a source of concern because students with diabetes who are taking insulin cannot automatically counterbalance changing physical demands without prior planning. Ideal scheduling would provide for physical education periods at the same time each day so that food or insulin adjustments can be made appropriately. Whether and when extra food should be provided should be discussed with the healthcare provider. The worst time for physical education is the hour just prior to lunch, when most of the morning meal has begun to “wear off” and the likelihood of insulin-induced hypoglycemia is at its peak.

### **Psychosocial Issues**

With a diagnosis of diabetes, psychosocial sensitivities may emerge. When school nurses, administrators, and teachers receive and act on current information about diabetes, they can make school a safe place for students with diabetes. Words are important; the preferred term is “a child with diabetes,” not “a diabetic child.” If school staff creatively use the process of diabetes management as a resource for education, they encourage increased self-esteem for these students. Science or math lessons that reflect day-to-day issues about diabetes, nutrition, and data collection make learning fun and pertinent.

### **Coordination and Case Management**

Certain students with diabetes may need a school case manager designated to coordinate his/her care. The school nurse is often the case manager for the student with diabetes, but another student support or IEP team member may be designated as case manager. However, the school nurse is the liaison between the healthcare team, school staff, administration, student support staff, parents/guardian, and student. The school nurse can also refer the student and/or family for counseling, support groups, and access to medical care.

### **Staff Training**

Schools should provide training to all school staff, including secretaries, bus drivers, and noon aides, about diabetes and its management. This training should include:

- Information about the disease
- The signs and symptoms of hypoglycemia and hyperglycemia
- What to do in a medical emergency
- Required classroom accommodations, if any
- Bus accommodations
- 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
- Special planning needed for the student with diabetes during school functions such as parties, field trips, participation in sports, and after school activities. This training should take place annually for any school in which there is a student with diabetes, or as needed if a student is newly diagnosed with this disease

### **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 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 include:

- 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 PE classes
- Adaptive PE
- Field trip/school sponsored activities
- Bus accommodations
- Minimizing instruction time or recess time missed because of nutritional and/or diabetes management accommodations
- Extra and co-curricular activities
- Methods/strategies for students to use in obtaining class work missed due to time in the health suite for care of hyper/hypoglycemia

### **Transportation**

The IHP 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/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. If a field trip is planned, the teacher should 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 guideline *Medication Administration 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.

### **Monitoring/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 the 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.

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