Diabetes Training Standards for School Personnel:

Providing Support and Emergency Medical Assistance to Students with Diabetes

Performance Standards for Supporting Students with Diabetes
2023

Contents

Information contained in this guide has been adapted from the National Diabetes Education Program's "Helping the Student with Diabetes Succeed: A Guide for School Personnel" and the American Diabetes Association. Adapted from:

National Diabetes Education Program

"Helping the Student with Diabetes Succeed: A Guide for School Personnel"

NIH, National Institute of Diabetes, Digestive and Kidney Diseases

American Diabetes Association

Diabetes Care Tasks at School: What Key Personnel Need to Know

Introduction

Performance Standards for Supporting Students with Diabetes allow students with diabetes to be safe and supported by schools who are following current law and best practice. Each student with diabetes is unique in his or her disease process, developmental and intellectual abilities, and levels of assistance required for disease management.

Health services must be provided to students with diabetes to ensure their healthcare needs are met; requirements of relevant federal and state laws are met; and they can fully participate in school and school-sponsored events (American Association of Diabetes Educators, 2016). Children with chronic conditions are at risk for high absentee rates, low student engagement, dropping-out of school, exposure to bullying, disruptive behaviors, poor grades, and below-average performance on standardized achievement tests (Forrest, Bevans, Riley, Crespo, & Louis, 2011; Bethell et al., 2012). (National Association of School Nurses. (2016).

Diabetes is a chronic disease in which blood glucose (sugar) levels are above normal. People develop diabetes because the pancreas produces little or no insulin or because the cells in the muscles, liver, and fat do not use insulin properly. People with diabetes may take insulin or other blood glucose-lowering medications to manage their condition.

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

The goal of effective diabetes management is to keep blood glucose levels within a target range determined by the student's personal diabetes health care team. The key to maintaining optimal blood glucose control is to carefully balance food intake, physical activity, insulin, and/or other medication. Several factors, such as food and physical activity, growth and puberty, physical and emotional stress, illness, or injury, also can affect blood glucose levels.

Diabetes management is needed 24 hours a day, 7 days a week. Many students will be able to handle all or almost all their nonemergency diabetes care tasks by themselves. Others, because of age, developmental level, inexperience, or issues with adherence to their diabetes tasks, will need help from school personnel. All students with diabetes will need help during an emergency, which may happen at any time.

School personnel need to be prepared to provide diabetes care at school and at all school-sponsored activities in which a student with diabetes participates. In an effort to standardize the support for students with diabetes in schools, Michigan Departments of Education and Health and Human Services created the Supporting Students with Diabetes in Schools Committee consisting of national and statewide stakeholders. The workgroups of this committee, including Advocacy/Communication, Insulin Dosing, Data, and Training Standards pooled their collective and ongoing work together to create these Training Standards.

Standards of Care have been developed to guide schools in providing support to students with chronic health conditions that meets requirements of the law and ensures that best practices are followed. These standards are outlined in the following pages.

Standards of Care for Supporting Students with Health Needs at School

Checklist:

KEY:			
DSP	Designated School Personnel	**PA**	Physician's Assistant
MMP	Medical Management Plan ***from Provider***	**RN**	Registered Nurse
MAA	Medication Administration Authorization	**SSH Team**	Student-specific Health Team
MERT	Medical Emergency Response Team	***SSH Team includes**:	Parent(s), Student, Designated School Personnel AND Registered Nurse, Physician, Physician's Assistant, or other Provider Clinic Staff
POC	Plan of Care		
Please note:	Timely completion of each step is an expectation for all members of the SSH Team	**** Based on**	Michigan law Current best practices

- ☐ Non- Emergent Health Need Identified: **If emergency, Call 9-1-1 immediately**
- ☐ Parent Provides:
  - ☐ MMP; includes routine/daily care and emergency action steps
  - ☐ MAA; one for each medication to be administered
- ☐ DSP/RN verify forms are complete
- ☐ Student specific meeting with parent, administrator, teacher, DSP and RN/Trainer to provide input to the POC based on the MMP, MAA, and student needs (i.e., student's daily schedule)
- ☐ Building administrator identifies and designates school personnel to be trained
- ☐ DSP determine training needs and arrange skill-based training for SSH Team *
- ☐ SSH Team participates in skill-based training**
- ☐ **STOP**: Verify all forms are appropriately signed and training is complete before DSP assume responsibility for provision of care
- ☐ DSP establish student-specific health file and medication administration record
- ☐ DSP distribute MMP (including emergency protocol) and/or MAA to SST Team members and other school staff per FERPA guidelines
- ☐ DSP provide care to student as outlined in MMP and MAA
- ☐ DSP document in student health records all care (including student responses to care)
- ☐ In the event of non-urgent unexpected response or error,
  - ☐ Follow school procedure
  - ☐ Inform parent in a timely manner
- ☐ In the event of **suspected emergency, always call 9-1-1 first**, then call parent
  - ☐ Follow MMP emergency plan
  - ☐ Follow school policy for responding to emergencies (See MERT protocol)
- ☐ DSP maintain regular communication with SSH Team. If appropriate, evaluate for eligibility for a Section 504 Academic Accommodations Plan
- ☐ DSP secure updated MMP, MAA, and training before the start of each school year or more frequently if student and/or school personnel needs dictate

Medical Emergency Response Protocol

Potential Medical Emergency Identified
↓
Note the time
Check the scene for safety
Protect student from injury and initiate actions below

- **Call 9-1-1 immediately:**
  - Make call from location of incident, if possible.
  - Use speaker mode on phone, if possible.
  - Be prepared to provide EMS Dispatcher with location name and address, and entrance door number nearest to the emergency situation.
  - Don't hang up the phone until instructed to do so by the EMS Dispatcher.

- **Immediately initiate the student's specific Emergency Care Plan (ECP)/Emergency Action Plan (EAP)**

  - If no ECP/EAP on file, employ Basic First Aid/CPR/AED training.

- **Notify front office of potential Medical Emergency.**

- **Announcement** (☐ OVER-HEAD; ☐ WALKIE-TALKIE)

"Attention Staff and Students: We are now going into Lock-in* for a medical emergency in Room ________________. MERT team please respond." (*notice for all to stay in place)

- **Available MERT members immediately carry out assigned tasks.**
  - Take AED and any emergency medical supplies and medication to location.
  - Inform Central Administration of Emergency.
  - Contact parents; Provide regular updates; Meet in the parking lot when they arrive.
  - Unlock the gate/door and direct traffic.
  - Meet the ambulance, Guide to location of emergency. (If elevator needed to reach location of emergency, direct EMS to entrance door nearest the elevator.)
  - Provide copy of the student emergency card/medical records to EMS.
  - Control the scene; Clear the area by directing uninvolved persons to alternate location.
- Document situation/response on Emergency Response/Incident Report form.

  - **If student is unconscious but breathing:**
    Position on side, keep airway open, monitor breathing –

  - **If breathing stops or breathing becomes ineffective, start CPR and use AED as soon as it is available.**

  - <u>**Ensure that 9-1-1 has been called.**</u>

- **Conduct debriefing session of incident and response following each event.**

- **When logical and possible, initiate actions simultaneously.**

Instructions:
Supporting Students with Diabetes in School Training Toolkit

The school nurse is the most appropriate person in the school setting to provide care for a student with diabetes. Many schools, however, do not have a full-time nurse, and sometimes a single nurse must cover more than one school. Even when a nurse is assigned to a school full time, she or he may not always be available during the school day, during extracurricular activities, or on field trips. In circumstances where a nurse is absent or unavailable, the school remains responsible for arranging and implementing the agreed upon diabetes care that is necessary to enable the child to participate in school and school-related activities. The school nurse or another qualified health care professional plays a major role in selecting and training appropriate staff and providing professional supervision and consultation regarding routine and emergency care of the student with diabetes.

In Michigan, school districts may train school personnel to provide daily care and emergency medical assistance including the administration of insulin and glucagon to students with diabetes, in accordance with a health care provider's written statement and the standards recommended by the *State of Michigan Board of Education Model Policy on the Management of Diabetes in the School Setting.* Best practice is set forth by the NIH, National Institute of Diabetes, Digestive and Kidney Diseases.
This toolkit is designed to guide the School Nurse, Certified Diabetes Educator, or other medical professional in providing the most complete training according to standards set by the Supporting Students with Diabetes in School Committee on Training Standards.

The training standards outline the steps for supporting students with diabetes in school. These steps follow the *Safe and Legal Support for Students with Health and Medication Needs in School* guidance developed by the Michigan Association of School Nurses for medication administration Training. Once ***Steps 1-3*** of this toolkit are complete, the staff training and ongoing management and support can be implemented.

All school personnel should be given training about diabetes and how to manage it in ***Step 4***. This training should be broken down into different levels depending on the responsibility of each staff member towards the student with diabetes. The training should be administered by a school nurse or certified diabetes educator (or a qualified medical professional). Training should take place at the beginning of each school year and should be repeated when a current student is newly diagnosed with diabetes or a student with diabetes enrolls in the school. Refresher training is done as needed to support the student as his/her condition or needs change, as outlined in ***Step 5.***

The Performance Standards included in this kit outline the support that should be provided to students with diabetes in school in compliance with the law and best practice. Training must be documented and these records must be saved according to the Michigan Records Retention and Disposal Schedule for Michigan Public Schools.

Training Presentations for the 3 tiers of training are linked. Additional resources for training are provided in the appendices and marked in the training outline with a ►.

Steps to Supporting Students with Diabetes in School

1. Review the Legal Considerations
    a. Michigan School Code
    b. Michigan Public Health Code
    c. FERPA
    d. Individuals with Disabilities Act of 1997 (IDEA) 34 CFR Part 300
    e. Section 504, Rehabilitation Act of 1973

2. Assemble the Student's Health Care Plans (Samples included in the appendices)
    a. ►**DMMP** Diabetes Medical Management Plan, including the **MAA** Medical Authorization (Prepared by the Student's Personal Diabetes Health Care Team)
    b. ►**Diabetes Care Guide** (Prepared by the School Nurse)
    c. ►**ECP** Emergency Care Plans for Hypoglycemia and Hyperglycemia (Included in the DMMP)
    d. ►**IHP** Individualized Health Care Plan (Prepared by the School Nurse)
3. Coordination of Care: School Health Team/Diabetes Health Care Team
    a. Meet with student's parent(s)/guardian(s) to review Health Care Plans and complete the ►**Diabetes Care and Management Planning** document according to the student's specific schedule and needs
4. Train School Personnel
    The three tiers of support build on each other.
    a. Tier 1- General Staff Awareness (All staff members)
        i. 15-20 minutes in length
    b. Tier 2- Emergency Care (MERT Team and Daily Support Staff)
        i. 1-3 hours in length
    c. Tier 3- Daily Support (Daily Support Staff)
        i. 2-3 hours in length
5. Ongoing Diabetes Management and Support

The checklist on Page 8 is the diabetes specific Standard of Care tool that can be used to ensure that all steps are completed when providing care to students with Diabetes in schools.

<u>Safe & Legal Support of Students with Diabetes in School</u>
Checklist:

Key:

DSP	Designated School Personnel	**PA**	Physician's Assistant
DMMP	Diabetes Medical Management Plan	**RN**	Registered Nurse
MAA	Medication Administration Authorization	**SSH Team**	Student-specific Health Team
MERT	Medical Emergency Response Team	***SSH Team includes**:	Parent(s), Student, Designated School Personnel **<u>AND</u>** Registered Nurse/Physician/Physician's Assistant
<u>Please note:</u>	Timely completion of each step is an expectation for all members of the SSH Team	** Based on	Michigan law and current best practices

- ☐ Non-Emergent Health Need Identified***- Student with Diabetes***
- ☐ **If Emergency is suspected, Call 9-1-1 immediately**
- ☐ Parent Provides:
  - DMMP/MMP; includes routine/daily care and emergency action steps
- ☐ DSP/RN verifies forms are complete
- ☐ Student specific meeting with parent, administrator, teacher, DSP and RN/Trainer to provide input to the POC based on the DMMP, MAA, and student needs (i.e., student's daily schedule).
- ☐ Building administrator identifies and designates school personnel to be trained
- ☐ DSP determines training needs and arrange skill-based training for SSH Team *
- ☐ SSH Team participates in skill-based training**
- ☐ **<u>STOP</u>**: Verify all forms are appropriately signed and training is complete before DSP assume responsibility for provision of care.
- ☐ DSP establishes student-specific health file and medication administration record
- ☐ DSP distributes DMMP/MAA/Hyper and Hypoglycemia emergency plan to SSH Team members and other school staff per FERPA guidelines
- ☐ DSP provides care to student as outlined in DMMP/MAA
- ☐ DSP documents in student health records all care (including student responses to care)
- ☐ In the event of non-urgent unexpected response or error, follow school procedure.
- ☐ Inform parent in a timely manner
- ☐ In the event of **suspected emergency, always call 9-1-1 first**, then call parent
- ☐ Follow Hyper/Hypoglycemia emergency plan
- ☐ Follow school policy for responding to emergencies (See sample Diabetes MERT protocol)
- ☐ DSP maintains regular communication with SSH Team. If appropriate, evaluate for eligibility for a Section 504 Academic Accommodations Plan
- ☐ DSP secures updated DMMP/MAA, and training before the start of each school year or more frequently if student and/or school personnel needs dictate

Performance Standard 1: LEGAL CONSIDERATIONS

The Michigan School Code and Public Health Code (applicable for schools with school nurses) dictate the legal requirements for support provided in schools to students with health and medication needs. 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 may qualify for reasonable accommodations in the school setting so they are successfully supported and their schooling is not adversely affected by their disability or perceived disability.
American Diabetes Association

Diabetes Care Tasks Training Modules
Legal Considerations (PPT)
Watch the Video (3:00)

Performance Standard 2: COORDINATION OF CARE

Collaboration and cooperation are key elements in creating a Circle of Support for planning and implementing successful diabetes management at school. To work collaboratively, a **school health team** should be assembled to include people who are knowledgeable about diabetes, the school environment, Federal, State, Education and Nursing laws. The school health team is distinct from the **student's personal diabetes health care team.**

The school health team members work together to implement the medical orders in the **Diabetes Medical Management Plan (DMMP)** developed by the student's **personal diabetes health care team,** using the strategies outlined by the school nurse in **the Individualized Health Care Plan (IHP).**

In addition, the school health team should be part of the group that develops and implements the student's **Section 504 Plan**, if there is a need for one.

School Health Team	Student with diabetes Parent/guardian School nurse or other qualified personnel Other school health care personnel Trained diabetes personnel Principal and other administrators 504/IEP Coordinator Office Staff Teacher(s) Guidance counselor Coach(es) and other school staff members responsible for the student

Personal Health Care Team	**Student with diabetes** **Parent/guardian** **Medical Provider** **Nurse** **Registered Dietician (if available)** **Diabetes Educator (if available)** **Clinic Social Worker (if available)**

Performance Standard 3: STUDENT HEALTH PLANS

►DMMP Diabetes Medical Management Plan
Information in the DMMP may include:

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

American Diabetes Association
Diabetes Care Tasks Training Modules
Diabetes Medical Management Plan (PPT)
Watch the Video (2:27)

►Medication Administration Authorization (Included in the new DMMP) Provides the health care provider's orders that allow for medication to be on school property and to be administered to students according to Physician's, Physician's Assistant's (PA) or Nurse Practitioner's (NP) instructions and written parent/guardian permission.

►Diabetes Care Guide (Prepared by the School Nurse or Diabetes Care and Education Specialist) Provides a user friendly one-page guide to individualized care for the student with diabetes. It is completed during planning and training using the information on the DMMP completed by the students' medical provider.

►**<u>ECP Emergency Care Plans for Hypoglycemia and Hyperglycemia</u> (Included in the DMMP)** Provides explicit steps for diabetes medical emergencies, including Hypoglycemia and Hyperglycemia. The ECP may be used for staff who do not 'need to know' all information on the DMMP but will be expected to respond to medical emergencies for students with Diabetes.

►**<u>IHP Individualized Health Care Plan</u> (Prepared by the School Nurse**) sometimes called the nursing care plan, is based on the medical orders in the student's DMMP and incorporates an assessment of the school environment as well as student-specific information (e.g., familial, psychosocial, and developmental information).
Information in the IHP <u>may</u> include:

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

Performance Standard 4: TRAINING

Diabetes care must be carried out as specified in the student's Diabetes Medical Management Plan or DMMP.

Nonmedical school personnel, called "trained diabetes personnel" or "designated school personnel" can be trained and supervised to perform diabetes care tasks safely in the school setting. In addition to learning how to perform general diabetes care tasks, trained diabetes personnel should receive student-specific training and be supervised by the School Nurse or Diabetes Care and Education Specialist. Locate a diabetes educator

Care tasks performed by trained diabetes personnel may include blood glucose monitoring, insulin administration (by syringe, pen, or assistance with a pump), glucagon administration, ketone testing, and basic carbohydrate counting.

The school nurse has a critical role in training and supervising trained diabetes personnel to ensure the health and safety of students with diabetes. In addition, a student's health care provider or a diabetes educator may assist in training nonmedical personnel in diabetes care. Given the rapid changes in diabetes technology, therapies, and evidence-based practice, the school nurse who provides care to students with diabetes and facilitates diabetes management training for school personnel has a professional responsibility to acquire, maintain knowledge and competency related to diabetes management.
All school personnel should be given training about diabetes and how to manage it. Training should be broken down into different levels depending on the responsibility of each staff member towards the student with diabetes.
The training should be administered by a School Nurse or a Diabetes Care and Education Specialist. Locate a diabetes educator
Training should take place at the beginning of each school year and should be repeated when a current student is newly diagnosed with diabetes or when a student with diabetes enrolls in the school. Refresher training is to be done as the needs of the student change. The trainer shall document the training.

►Diabetes Training Documentation should include student specific training

Tier 1 training

Administered to all school personnel at the beginning of the year. This training may be provided at a staff meeting and could consist of viewing the Overview of Diabetes video or providing the Level1 PowerPoint Presentation.

Tier 1 training content:

- An overview of diabetes
  https://www.youtube.com/watch?v=ClxIVUfwDd4&feature=youtu.be
- Tier 1 PowerPoint Presentation 'Keeping Students with Diabetes Safe at School"
- General training on diabetes care tasks:
  - Blood glucose monitoring
  - Ketone testing (urine and blood)
  - Insulin administration
  - Glucagon administration
  - Basic carbohydrate counting
- How to recognize and respond to hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose).
- Roles and responsibilities of individual staff members
- Who to contact for help in an emergency?

►Handouts

What is Diabetes
Know the Signs-Hypoglycemia

Know the Signs-Hyperglycemia

Tier 2 training

Designed for school personnel who have responsibility for the student with diabetes throughout the school day, including but not limited to: classroom, physical education, music, and art teachers, as well as other personnel such as lunchroom staff, coaches, and bus drivers.

Tier 2 training content:

- Tier 2 Emergency Care PowerPoint
    - Content from Tier 1 with specific instructions for what to do in case of an emergency
    - Roles and responsibilities of individual staff members
    - Expanded overview of diabetes
    - Procedures and brief overview of the operation of devices (or equipment) commonly used by students with diabetes
    - Impact of hypoglycemia (low blood glucose) or hyperglycemia (high blood glucose) on behavior, learning, and other activities
    - ►Emergency Care Plans and how to activate Emergency Medical Services in case of a diabetes emergency
    - Tips and planning needed for the classroom and for special events
    - What to do during a schoolwide emergency (e.g., lockdown or evacuation)
    - Overview of the legal rights of students with diabetes in the school setting

See Medical Emergency Response Protocol below.

Medical Emergency Response Protocol

Potential Medical (Hypoglycemia) Emergency Identified
(Student is having a seizure, unable to eat/drink, unresponsive or unconscious)
↓
Note the time
Check the scene for safety
Protect student from injury and initiate actions below

❖ **Call 9-1-1 immediately:**
- Make call from location of incident, if possible.
- Use speaker mode on phone, if possible.
- Be prepared to provide EMS Dispatcher with location name and address, and entrance door number nearest to the emergency situation.
- Don't hang up the phone until instructed to do so by the EMS Dispatcher.

❖ **Immediately initiate the student's Hypoglycemia Emergency Care Plan (ECP)/Emergency Action Plan (EAP)**
- **Administer Glucagon per orders**
- If no Hypoglycemia ECP/EAP on file, employ Basic First Aid/CPR/AED training.

❖ **Notify front office of potential Medical Emergency.**
❖ **Announcement** (☐ OVER-HEAD; ☐ WALKIE-TALKIE)
"Attention Staff and Students: We are now going into Secure Mode* for a medical emergency in Room ________________. MERT team please respond." (*all to stay in place)

❖ **Available MERT members immediately carry out assigned tasks.**
- Take AED and any emergency medical supplies including extra glucagon to location.
- **Administer Glucagon per orders (if not done already)**
- Inform Central Administration of Emergency.
- Contact parents; Provide regular updates; Meet in the parking lot when they arrive.
- Unlock the gate/door and direct traffic.
- Meet the ambulance, guide to location of emergency. (If elevator needed to reach location of emergency, direct EMS to entrance door nearest the elevator.)
- Provide copy of the student emergency card/medical records to EMS.
- Control the scene; Clear the area by directing uninvolved persons to alternate location.
- Document situation and response on Emergency Response/Incident Report form.

❖ **If student is unconscious but breathing:**
- Position on side, keep airway open, monitor breathing –
- **If breathing stops or breathing becomes ineffective, start CPR and use AED as soon as it is available.**
- **<u>Ensure that 9-1-1 has been called.</u>**

❖ **Conduct debriefing session of incident and response following each event.**

***When logical and possible, initiate actions simultaneously!**

Tier 3 training
For two or more (ideally four staff members should be trained) school staff members designated as trained diabetes personnel who will perform or assist the student with diabetes care tasks.

Tier 3 training content:

- Tier 3 Daily Support PowerPoint Presentation
- Content from Tier 1 and Tier 2+
    - Student-specific training, when addressing each diabetes care task, including:
        - ►Diabetes Medical Management Plan (DMMP), 504 Plan, IEP, or other education plan
        - Clear identification and understanding of the task as outlined in the student's DMMP
        - Blood glucose monitoring
        - ►Ketone testing (urine)
        - Insulin administration
        - Glucagon administration
        - ►Basic carbohydrate counting
        - Each student's symptoms and treatment for hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose)
        - Step-by-step instruction on how to perform the task using the student's equipment and supplies
    - How to document all care tasks provided
    - Plan for ongoing evaluation

- ►Diabetes Care Guide can be used to establish clear parameters on when to perform the task, when not to do so, and when to ask for help from a health care professional.

Ideally, at least four adults should be trained as a Tier 3. Monitoring all employees who assist students with diabetes is the responsibility of each school.

All supplies for treatment, including the materials necessary to administer glucagon, are provided by the parent/guardian.

- ► 'Diabetes Management at School Equipment and Supplies Checklist' can be used to verify adequate supplies are on hand.

- ►Advocacy Tools are available to provide to parents should be provided if parents express difficulty obtaining supplies.
    - 'Staff Handout'
    - 'Family Guide'

TRAINING: Content and Resources

Understanding Diabetes

Diabetes Overview https://www.youtube.com/watch?v=ClxIVUfwDd4&feature=youtu.be
Diabetes is a chronic disease in which the body does not make or properly use insulin, a hormone needed to convert sugar, starches, and other food into energy. People with diabetes have increased blood glucose (sugar) levels because they lack insulin, have insufficient insulin, or are resistant to insulin's effects. High levels of glucose build up in the blood and spill into the urine; as a result, the body loses its main source of fuel. When insulin is no longer made, it must be obtained from another source--insulin shots or an insulin pump. When the body does not use insulin properly, oral medications may be taken instead of, or in addition to, insulin. Neither insulin nor other medications, however, are cures for diabetes: they only help control the disease.

Taking care of diabetes is important. If not treated appropriately, diabetes can lead to serious health problems. The disease can affect the blood vessels, eyes, kidneys, nerves, gums, and teeth, and it is the leading cause of adult blindness, lower limb amputations, and kidney failure. People with diabetes also have a higher risk of heart disease and stroke. Some of these problems can occur in teens and young adults who develop diabetes during childhood. The good news is that research shows that these problems can be greatly reduced or delayed by keeping blood glucose levels near normal.

There are two main types of diabetes: Type 1 and Type 2. Type 1 diabetes is sometimes referred to as "juvenile onset diabetes." Type 1 diabetes results from the body's failure to produce insulin. Type 2 diabetes is sometimes referred to as "adult onset diabetes." Type 2 diabetes is caused by insulin resistance (a condition in which the body fails to properly use the insulin it makes), combined with relative insulin deficiency. Although type 2 diabetes generally occurs in adults an increasing number of children and adolescents are being diagnosed with type 2 diabetes.

Maintaining good blood glucose control is important to the health of a person with diabetes. There are many factors involved in the day-to-day management of diabetes including eating nutritious food in appropriate quantities, getting regular physical activity, monitoring blood glucose levels, and taking medications when necessary.

American Diabetes Association
Diabetes Care Tasks Training Modules
Diabetes Basics (PPT)
Watch the Video (4:39)

Blood Glucose Monitoring

Blood Glucose Monitoring Overview

Blood glucose monitoring is critical to diabetes management. Blood glucose levels fluctuate throughout the day. Regular blood glucose monitoring provides information for management decisions. It is also critical for the identification, treatment, and prevention of high and low blood glucose levels.

The frequency and timing of regular blood glucose tests should be outlined in the physician's written orders for the student. Additional blood glucose testing may be required when there is a change in physical activity level, food intake, and medication or when the student is not feeling well.

Many students are able to perform blood glucose monitoring themselves in non-emergency situations. Other students, because of their age, maturity level, or other factors, may require an adult to check their blood glucose or assist them with this task. All students may need an adult's assistance to check blood glucose when experiencing severe hypoglycemia.

In order to check blood glucose, the parent/guardian will provide the following tools:

- Blood glucose meter
- Testing strip (specific to each meter)
    - Test strips should be dated when opened as they expire 6 months from opening
    - Test strips have an expiration date even if not opened
- Lancet (a sharp, pin-like tool)
- Sharps container (to dispose of lancets)

Preparation

Begin by having the student wash and dry their hands thoroughly or use hand sanitizer. If assisting or performing the blood glucose check for the student, put on disposable gloves and when finished, wash hands thoroughly after removing gloves.

Performing the Blood Glucose Test

Turn the blood glucose meter on if it does not turn on automatically when a test strip is inserted. Using the test strips supplied by the parent/guardian, insert a test strip into the meter. Blood samples for use with the meter are often obtained from the side of the finger but some meters allow blood samples from other parts of the body such as the forearm. Follow the instructions specific to the meter provided by the parent/guardian on how and where to obtain blood for the meter.

The results from the blood glucose test will be displayed on the meter. Processing times vary. Most meters will display results within one minute. Dispose of the lancet in a sharp's container. Test strips may be discarded in a regular trash can. Record the blood glucose result and as needed, take action according to the physician's written orders for the student.

Meters do not only display numbers. Some display "Lo" or "Hi" for results outside of the meter's parameters. Some display error messages. Consult with the meter manual to determine the meaning of messages. A copy of the meter manual should be supplied by the parent/guardian and kept in the health office.

American Diabetes Association
Diabetes Care Tasks Training Modules
Blood Monitoring (PPT)
Watch the Video (2:22)

Continuous Glucose Monitoring (CGM)
The CGM system works through a sensor placed on the skin. It transmits readings to a small recording device that sounds an alarm if blood sugar gets too high or low. Whether diabetes is managed with a pump, daily injections, or oral medications, CGM can help.

Children using certain devices have the capability to share data with parents and caregivers remotely. This enables children to receive real-time guidance from parents on diabetes management. A parent's access to this data does not absolve the school/childcare program/camp of its responsibility to provide diabetes care. Data sharing with school/childcare/camp staff should be discussed and agreed upon by parents and the school/childcare program/camp.

Management Plan (DMMP) must ALWAYS be consulted before using CGM or Sensor data to make treatment decisions.

American Diabetes Association
Diabetes Care Tasks Training Modules
CGM (PPT)

Basic Carbohydrate (Carb) Counting
The main purpose of carbs in the diet is to provide energy as your body's main fuel source. The carbs plus the amount of insulin you have in your body determine your blood sugar levels and have a big impact on how you feel.

There are three main types of carbohydrates in food: Starches, sugars, and fiber. Starches—or complex carbohydrates—include starchy vegetables, dried beans, and grains. Sugars include those naturally occurring (like in fruit) and added (like in a cookie). Fiber comes from plant foods vs. animal products like eggs, meat, or fish.

Carbohydrate counting, or "carb counting," is a method of meal planning for people with diabetes based on counting the number of grams of carbohydrate in food. It helps many people with diabetes manage their food intake and blood sugar. Carb counting provides more choices and flexibility when planning meals. It involves counting the number of carb grams in a meal and matching that to a dose of insulin, as instructed by the diabetes provider. With the right balance of physical activity and insulin, carb counting can help manage blood sugar.
Foods without labels such as fruits and vegetables are often better options, and you can learn to estimate how much carbohydrate is in them.

Carb counting is easier when the information is on the food label. Reading food labels will tell how much carb is in foods that tend to be processed.

- Look at how much carbohydrate is in the serving of food planned to eat. The two items on the label that are most useful are the serving size and the total carbohydrate amount.
- Look at the **serving size**. All the information on the label is about this amount of food. If eating 2 or 3 servings, then double or triple the information on the label.
- Look at the **grams of total carbohydrate**.
    - Added sugars and other bullets below the total carbohydrate listing are included in the total carbohydrate. They are called out to provide more information about the food item.

COOK's Children's' carb counting video
►Ready, Set, Start Counting

Insulin Administration

Inside the pancreas the hormone insulin is made in the beta cells, which are part of the Islets of Langerhans. These islets also have alpha cells, which make glucagon, as well as delta cells. With each meal, beta cells release insulin to help the body use or store the blood sugar it gets from food.
In people with **Type 1 diabetes**, the pancreas no longer makes insulin. The beta cells have been destroyed and they need insulin shots to use glucose from meals.
People with **Type 2 diabetes** make insulin, but their bodies don't respond well to it. Some people with Type 2 diabetes need diabetes pills or insulin shots to help their bodies use glucose for energy.

Types of insulin

- ✓ **Rapid-acting insulin**, begins to work about 15 minutes after injection, peaks in about 1 hour, and continues to work for 2 to 4 hours. *Types: Insulin glulisine (Apidra), insulin lispro (Admelog, Humalog), and insulin aspart (Fiasp, NovoLog)*
- ✓ **Regular or short-acting insulin** usually reaches the bloodstream within 30 minutes after injection, peaks anywhere from 2 to 3 hours after injection, and is effective for approximately 3 to 6 hours. *Types: Human Regular (Humulin R, Novolin R, Velosulin R)*
- ✓ **Intermediate-acting insulin** generally reaches the bloodstream about 2 to 4 hours after injection, peaks 4 to 12 hours later, and is effective for about 12 to 18 hours. *Types: NPH (Humulin N, Novolin N, ReliOn)*
- ✓ **Long-acting insulin** reaches the bloodstream several hours after injection and tends to lower glucose levels up to 24 hours. *Types: detemir (Levemir), and glargine (Basaglar, Lantus)*
- ✓ **Ultra long-acting** reaches the blood stream in 6 hours, does not peak, and lasts about 36 hours or longer. Types: *degludec (Tresiba),* glargine u-300 (Toujeo)

Insulin comes in different concentrations. The concentration of insulin is the number of units of insulin in one milliliter (mL). Insulin vials and pens commonly have a concentration of 100 units in 1 mL (100 units/mL), which is called U-100. However, some insulin products come in a higher concentration. Given that a brand of insulin may come in different concentrations, it is important to look at the insulin pen or vial for the concentration. For the safety of the of the person with diabetes, insulin should only be administered according to instructions on the package insert.

American Diabetes Association
Diabetes Care Tasks Training Modules
Insulin Basics (PPT)
Watch the Video (3:36)

Insulin Pen
An insulin pen is a device that makes injecting insulin easier and more convenient compared to using a syringe.

Advantages of Insulin Pens:

- Easy to use and carry around
- No need to draw insulin from a vial (bottle)
- Easy to adjust dose
- Less wastage of expired insulin
- Less scary than a syringe
- Does not require refrigeration as long as you keep it out of direct sunlight in room temperature (only new unopened insulin pens require refrigeration)

Insulin by Pen (PPT)
Watch the Video (2:01)

InPen Smart Pen
InPen is the only smart pen system that tracks active insulin. At any time, the user can check the app and see how much insulin is still active in the body from previous doses. InPen uses this information to let the user know if they need a correction dose. It also helps to avoid stacking.

Advantages of InPen Smart Pen:

- Personalized Dose Recommendations
  The InPen dose calculator recommends a personalized dose based on blood glucose, the carbohydrates eaten, and active insulin.

- Active Insulin Tracking
  InPen is the only smart pen system that tracks active insulin. At any time, user can check the app and see how much insulin is still active in the body from previous doses.

- Integrates with Dexcom G5/G6 through Apple Health
  Works with Bluetooth-connected meters

- Reminders across all devices
  InPen reminds you if you forget your typical doses.

- **Insulin status alerts**
  InPen notifies you when insulin gets too hot or cold, or if it will expire soon.

- Automated logbook
  Get a glimpse into your diabetes over the past 90 days.
  - *The InPen logbook provides a summary of:*
    - Doses from the InPen
    - Blood glucose
    - Carbohydrates
    - Dose calculator recommendations
    - Prime doses
    - Cartridge replacements
    - Insulin doses manually logged

- Pair multiple pens
  You can use multiple InPens — one for school, home, work or gym bag.

- View and share data
  InPen reports help you visualize how insulin and meals affect glucose so that you can share reports with your healthcare provider or family members.

- Real-time info, at a glance
  Quickly check active insulin and recent doses from lock screen.

Insulin Pump

An insulin pump is a battery-powered device used to deliver rapid-acting insulin to the body through a catheter, replacing the need for periodic injections.
basal rate a steady trickle of low levels of longer-acting insulin
bolus (BOH-lus) an extra amount of insulin taken to cover an expected rise in blood glucose, often related to a meal or snack.

American Diabetes Association
Diabetes Care Tasks Training Modules
Insulin by Pump (PPT)
Watch the Video (1:50)

Understanding Hyperglycemia, Its Causes, Signs & Symptoms

Hyperglycemia
Hyperglycemia is a term that refers to high blood glucose level in the blood.
The irony is that with a high amount of glucose floating around in the blood the body cells are actually starving because glucose cannot get in.

An isolated high blood glucose reading is cause for concern, but not alarm. For example, blood glucose is expected to be somewhat higher following a meal or snack, but it should also drop once insulin starts to work. However, it is also important to note that hyperglycemia can occur more rapidly in students with insulin pumps if a pump malfunctions or delivers less insulin. Illness or infection can also contribute to a more rapid escalation of hyperglycemia.

Hyperglycemia becomes an increasing concern when several consecutive readings have been high, or when accompanied by vomiting.

As hyperglycemia progresses, the student may be nauseous or be dehydrated and listless– often it looks flu-like. Any student with diabetes who presents with flu-like symptoms should immediately perform a blood glucose check, contact the school nurse and/or parent/guardian as directed by the student's DMMP.

Hyperglycemia most often does not appear to be as dramatic as low blood glucose, so it is perceived as less threatening. Yet untreated, high blood glucose presents a much greater threat, especially for those students who are dependent on insulin.

If there is not enough insulin for any reason, (pump malfunction, failure to take insulin or insulin not working effectively) there may be a breakdown in fat, causing ketones to form. Ketones may build up in the blood and may result in diabetic ketoacidosis (DKA). Fortunately, the onset of hyperglycemia and progression to DKA is usually pretty slow. As a result, the recognition and treatment of mild hyperglycemia is vitally important. The student's DMMP should determine precisely what actions should be taken at each level of severity of hyperglycemia.

Symptoms vary somewhat from individual to individual, or from episode to episode and may include:

- Thirst
- Blurred vision
- Fatigue/sleepiness
- Lack of concentration
- Weight loss
- Stomach pains
- Frequent urination
- Sweet, fruity breath
- Increased hunger
- Flushing of skin

The following symptoms indicate that hyperglycemia has escalated.
Mild symptoms plus:

- Dry mouth
- Nausea
- Sweet, fruity breath
- Vomiting
- Stomach cramps

This last group of symptoms indicate **severe hyperglycemia,** and probable ketoacidosis.
Mild and moderate symptoms plus:

- Labored breathing
- Confusion
- Profound weakness
- Unconscious

The important thing to remember is that intervention at any of these levels will prevent progression to more severe symptoms.

Hyperglycemia Risks and Complications
There are several important reasons to learn the signs, treatment, and prevention strategies for hyperglycemia.

- If left untreated for an extended period, hyperglycemia resulting from insufficient insulin can lead to "diabetic ketoacidosis" (DKA) and/or coma and death. The onset is more rapid for students who wear insulin pumps.

- High blood glucose can affect a student's general well-being. Students who do not feel well are less able to learn and participate in school activities.

- When glucose levels remain high over time or are recurring, serious life-limiting complications of diabetes develop. Diabetes is the leading cause of adult blindness, lower limb amputations, kidney failure, heart disease and stroke.
- Many students with diabetes will not experience symptoms from high glucose levels until the level is far above target range. Therefore, glucose testing is needed to identify otherwise undetectable high glucose levels.

Treating Hyperglycemia
Treating high glucose levels in accordance with the student's DMMP, enables students to participate fully in their education and enhances their health and well-being in the future. To prevent progression, action needs to be taken at the first signs of hyperglycemia, in accordance with the student's DMMP.
The goal in the treatment of hyperglycemia is to lower the blood glucose level to within a student's target range.

Always follow the individual student's DMMP.
Generally, the action steps for hyperglycemia are:

- First of all, verify status with a blood glucose check as specified in the DMMP.
- Secondly, check ketones as specified in the DMMP.
- Allow free use of bathroom and access to water.
- Administer insulin as specified in the DMMP.
- Recheck blood glucose per DMMP.
- The parent/guardian should be notified immediately when the conditions for contact are present as specified in the DMMP.
- Note patterns and need for bathroom or water access and communicate with student, school nurse or parent/guardian as specified in DMMP.

Causes of Hyperglycemia

- **Too little insulin**
- Forgetting to "cover" a meal or snack with rapid-acting insulin can happen. A concern is when students have not taken their long-acting or basal insulin. Students on pumps are especially vulnerable to high blood glucose, if their infusion site pulls out or occludes, preventing basal insulin delivery.
- **Too much food or food that is not covered by insulin.**
- This may be inadvertent, not realizing how carbohydrate-rich a particular food is. For example, a student who is used to eating grocery store bagels at home, may not realize that some shop bagels are two time as rich in carbohydrates.
- **Decreased physical activity.**
- **Other factors may also play a role:**
    - Expired or "spoiled" insulin:
        - Sometimes insulin that is beyond expiration or has been stored improperly can lose its potency and can cause hyperglycemia.
    - Illness, injury, infection
        - An otherwise "unexplained" high glucose reading may be a sign of onset of illness.
    - Stress
    - Hormone fluctuations, including menstrual periods
    - Other hormones
        - Such as glucagon, growth hormone, adrenaline, cortisol or medications

Avoiding Hyperglycemia

Because severe hyperglycemia is generally slow to develop, school personnel can do a lot to prevent or minimize hyperglycemia by doing the following:

- Timing is very important in all aspects of diabetes management. Eat on time, check blood glucose level on time, take insulin on time, and physical activity on time.

- Ensure that insulin dosing is accurate, according to guidelines in the DMMP. The DMMP should specify what assistance, if any, is needed. Take appropriate action according to DMMP if a missed dose of insulin is suspected or if an insulin pump malfunctions.

- The same kind of accuracy in "dosing" needs to happen with food as well. Many students will be able to choose foods independently if provided with carbohydrate information. However, some students may need assistance or monitoring as indicated in the DMMP.

- "Extra snacks" can be a problem if not worked into the overall meal plan for the day. On the other hand, many special snacks can be accommodated in consultation with the parent/guardian. Consult with parent/guardian prior to serving extra snacks.

- Changes in snack, meal, or physical activity times should only be made after consultation with parent/guardian and/or school nurse.

Long-term complications
Keeping your blood sugar in a healthy range can help prevent many diabetes-related complications. Long-term complications of untreated hyperglycemia can include:

- Cardiovascular disease
- Nerve damage (neuropathy)
- Kidney damage (diabetic nephropathy) or kidney failure
- Damage to the blood vessels of the retina (diabetic retinopathy), potentially leading to blindness
- Clouding of the normally clear lens of your eye (cataract)
- Foot problems caused by damaged nerves or poor blood flow that can lead to serious skin infections, ulcerations, and in some severe cases, amputation
- Bone and joint problems
- Teeth and gum infections

Caring for the Student with Mild Hyperglycemia
If blood-test result is slightly above “normal” (as indicated in the DMMP):

- Continue regular activity.
- Drink water or glucose-free drinks.
- Monitor blood-glucose levels by checking regularly.
- Chart blood-glucose test results.

Caring for the Student with Moderate to Severe Hyperglycemia
If blood-test result is moderately high:

- Don’t engage in strenuous exercise.
- Drink water or glucose-free drinks.
- Inject additional insulin if instructed by physician or parents.
- Monitor blood-glucose levels by checking regularly.
- Chart blood-glucose test results.

If blood-test result is very high:

- Don’t engage in strenuous exercise.
- Drink water or glucose-free drinks.
- Test ketone level if advised by parents or physician.
- If high, contact parent or physician immediately.
- Monitor blood-glucose levels by checking regularly.
- Chart blood-glucose test results.

American Diabetes Association
Diabetes Care Tasks Training Modules
Hyperglycemia (PPT)
Watch the Video (1:53)

Ketones

Ketone Checks

- Ketones are acids that result when the body does not have enough insulin and uses fats for energy.
- Ketones may be observed when insulin is not given, during illness or extreme bodily stress, or with dehydration.
- Ketones can cause abdominal pain, nausea, and vomiting.
- Without sufficient insulin ketones continue to build up in the blood and result in diabetic ketoacidosis (DKA).

Reasons for checking for ketones

It is important to test for ketones because if not detected early, particularly during illness, they will continue to build up in the body and may result in one of the two emergencies of diabetes, diabetic ketoacidosis, often referred to as "DKA".

DKA is the number one reason for hospitalizing children with diabetes in the U.S.
It is the early detection of ketones and treatment with insulin that prevents hospitalizations for DKA. DKA is a condition that occurs due to insufficient insulin in the body. This can be due to illness, not enough insulin/medication doses or omitting insulin injections.

If the measurement shows medium or large ketones to be present, extra insulin may need to be provided by the parents/guardians to reduce the level of ketones. The individual student's DMMP should specify when ketones are to be checked.

Generally, ketones should be checked when:

- Repeated blood glucose readings are over the target range as specified in the DMMP
- During acute illness, infection or fever
- If the student has any of the following symptoms of DKA:
  - Nausea
  - Vomiting or diarrhea
  - Abdominal Pain
  - Fruity breath odor
  - Rapid breathing
  - Fatigue or Lethargy
  - Thirst and frequent urination

Diabetic Ketoacidosis DKA

Unlike low blood glucose, which can progress very quickly, the progression of untreated high blood glucose to DKA is usually a slow process. An isolated high blood glucose reading, in the absence of other symptoms is not cause for alarm.

DKA usually develops over hours, or even days. However, DKA can progress much more quickly for students who use insulin pumps, or those who have an illness or infection. Individuals with diabetes are most at risk when symptoms of DKA are mistaken for flu and high blood glucose is unchecked and untreated.

Checking for Ketones:

Ketones can be measured in either the blood (using a ketone specific meter) or in urine. Urine ketone measurements continue to be most common in the school setting.

Urine Ketone Checking Instructions:

1. Gather supplies:
    a. vial of ketone strips,
    b. urine cup
2. Student urinates in clean cup.
3. Put on gloves, if performed by someone other than student.
4. Dip the ketone test strip in the paper cup containing urine. Shake off excess urine.
5. Wait 15 - 60 seconds, as indicated on the directions printed on the bottle label.
6. Read the results at the designated time by comparing the color on the strip to the color chart printed on the label on the bottle. Be careful not to wait longer than recommended to read the result or false results may occur.
7. Record results and take action per DMMP.

Urine Ketone Results

- When recording results record the descriptor from color coding on the packaging.
- Record both the word and numerical result labels.
- Note: At this point in the training the trainer demonstrates checking of urine ketones and how to read results when compared to color coding on packaging.

Expiration of Ketone Strips

- Ketone strips stored in bottles expire six (6) months after opening. However, see bottle for details as expiration after opening may vary according to brand.
- Ketone strips stored in individual foil packages expire according to date on box or foil package.

Treatment of Ketones

Generally:

- No ketones = no action needed
- Trace ketones = encourage drinking water
- Small ketones = encourage drinking water
- Moderate ketones = Parent pick up - may need insulin at home
- Large ketones = Parent pick up insulin critical

American Diabetes Association
Diabetes Care Tasks Training Modules
Ketones (PPT)
Watch the Video (2:31)

Understanding Hypoglycemia, Its Causes, Signs & Symptoms

<u>Hypoglycemia Overview</u>

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 below the student’s target blood glucose range.

Hypoglycemia usually can be treated easily and effectively. If it is not treated promptly, hypoglycemia can lead to unconsciousness and convulsions and can be life threatening.

Early recognition of its symptoms and prompt treatment, in accordance with the physician’s written orders for the student, are necessary for preventing severe symptoms that may place the student in danger. This information, contained in the Quick Reference Emergency Plan, should be provided to all school personnel who have responsibility for the student with diabetes (see sample in the resource section).

<u>Causes of Hypoglycemia</u>

Hypoglycemia usually occurs as a result of administering too much insulin, skipping or delaying meals or snacks, 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 education classes.

<u>Signs and Symptoms of Hypoglycemia</u>

Hypoglycemia is not always completely preventable, and 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.

Hypoglycemia can impair thinking abilities and sometimes can be mistaken for misbehavior.
If a student with diabetes

- Has a sudden change in behavior
- Becomes lethargic, combative, or unconscious
- Is having a seizure or convulsion

presume that the student has hypoglycemia.

Caring for the Student with Mild to Moderate Hypoglycemia

When a student with diabetes has symptoms of hypoglycemia, it is important to treat it right away. Begin by checking the student's blood glucose level, and if appropriate treat for hypoglycemia. If a meter is not accessible, and the student has symptoms, go ahead and treat for hypoglycemia.

Use the Rule of 15

Step 1:

Have the student eat or drink something with **15 grams** of carbohydrate. Suggestions include:

- Glucose tablets equaling 15 grams of carbohydrate
- ½ can regular (non-diet) soda
- 6-7 lifesavers
- 1 c. non-fat milk
- 1 tbs. sugar (3 single serving packets), honey, or corn syrup
- 2 tbs. raisins

The physician's written orders for the student may provide more specific direction on what carbohydrate source should be used.

Step 2

Wait **15 minutes**, check the blood glucose level. If the blood glucose is still below his or her target range give the student another 15 grams of carbohydrate and check again after 15 minutes.

If the student's blood glucose remains too low even after treatment, contact the school nurse (if possible) and the parent/guardian. The student may need to be seen by his or her health care provider.

American Diabetes Association
Diabetes Care Tasks Training Modules
Hypoglycemia (PPT)
Watch the Video (3:12)

Understanding Glucagon and How it should be Stored

Glucagon Overview

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 administered when the student's blood glucose level gets so low that the student passes out, is unresponsive, experiences seizures, or cannot safely eat, drink or swallow.

Although it may cause nausea and vomiting when the student regains consciousness, glucagon can be a life-saving treatment and cannot harm a student, even if the student's blood sugar is already high.

The student's parents/guardian should supply the school with a glucagon emergency kit and be responsible for replacing the kit when it has expired. This 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.

Storing Glucagon

Glucagon may be stored at room temperature according to the manufacturer's directions. The school nurse and trained designated personnel must have ready access to the glucagon emergency kit at all times, including on field trips and during a disaster.

American Diabetes Association
Diabetes Care Tasks Training Modules
Glucagon Administration (PPT)
Watch the Video (2:24)

Understanding When and How to Administer Glucagon

When Glucagon Should Be Used

Glucagon is used to treat severe hypoglycemia. Severe hypoglycemia is rare at school and generally can be prevented with prompt treatment when the early signs of low blood glucose are recognized (See Signs and Symptoms of Hypoglycemia).

When hypoglycemia is severe, the school nurse or trained designated personnel must respond immediately. Glucagon should be given according to the physician's written statement when a student with diabetes is unresponsive or unconscious, if the student is having a seizure or convulsions, or if the student cannot safely eat, drink, or swallow. Severe hypoglycemia can cause brain damage or death.

If a blood glucose meter is not readily available and the student is exhibiting the signs and symptoms of severe hypoglycemia:

1. Call 9-1-1
2. Activate the MERT (Medical Emergency Response Team)
3. Treat the student with glucagon **if it has been prescribed by the student's healthcare provider and a trained person is available**. If there is no prescription for glucagon, treat as per the student's DMMP and call 911 and the student's parent/guardian.

How Glucagon is Administered

- Glucagon - Intramuscular (IM)
- Glucagon Emergency Kit- IM
- GlucaGen HypoKit – IM
- Baqsimi™ – Nasal
- Gvoke- Auto-Injector/ Subcutaneous injection

Steps for Administering Glucagon/Glucagen/GlucaGen

- Never attempt to give a student suffering from severe hypoglycemia food or a drink or to put anything in the mouth because it could cause choking.
- Position the student safely on their side for comfort, protection from injury and to prevent choking in the event of vomiting, a possible reaction to glucagon administration.
- Have another school staff member call for emergency medical assistance (911) and the student's parent/guardian while glucagon is being administered. Do not delay administering glucagon while these calls are made.
- Remove the cap from the glass vial containing dry powder.
- Remove cap from syringe and insert the needle into vial through rubber stopper.
- Inject all the fluid in syringe into the bottle containing the dry powder.
- Roll to mix until all powder is dissolved, and solution is clear.
- Inspect the vial. The solution should be clear and colorless. Do not administer if discolored or does not dissolve well.
- Hold the vial upside down in one hand.
- Insert the syringe into the vial.
- Draw the prescribed amount of solution into the syringe (refer to healthcare provider's written orders for the student).
- Bare the site. The best sites for injection are buttocks, thighs, and upper arms.
- Inject the glucagon at 90° angle into the tissue under cleansed area.
- Push syringe plunger all the way down. Count to five.
- Remove needle from skin and dispose of syringe safely into a sharp's container
- Dispose of any unused portion of the mixed glucagon.
- Confirm that 911 has been called.
- Stay with the student, keeping him/her on their side until they regain consciousness or emergency personnel have arrived.

It may take 15-20 minutes for the student to regain consciousness. It is likely that emergency personnel will have arrived on the scene and taken responsibility for treatment. If they have not:

- Check blood glucose.
- Give sips of fruit juice or regular soda once the student is awake and able to eat/ drink.
- Follow the healthcare providers written orders for the student.
- Record the glucagon administration in the student's health record and on the medication log.

Do not be surprised if:

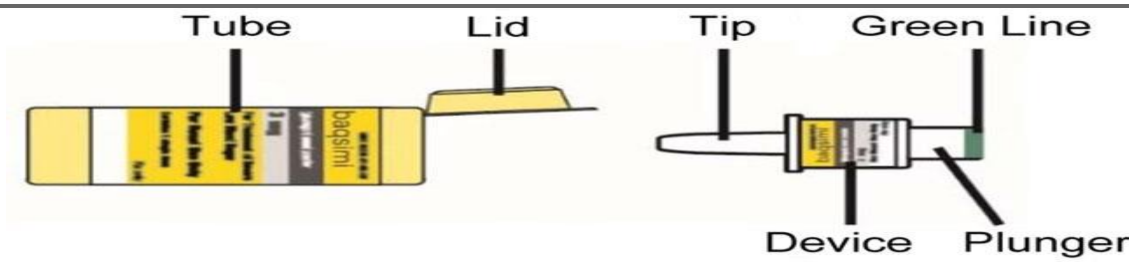
- The student does not remember being unconscious, is incoherent or has a headache.
- Blood glucose becomes very high (over 200).
- Nausea or vomiting occur.

Steps for Administering Baqsimi™

BAQSIMI™ (glucagon) nasal powder 3 mg

Read the Instructions for Use for BAQSIMI before using it. BAQSIMI is used to treat very low blood sugar (severe hypoglycemia) that may cause you to need help from others. You should make sure you show your caregivers, family and friends where you keep BAQSIMI and explain how to use it by sharing these instructions. **They need to know how to use BAQSIMI before an emergency happens.**

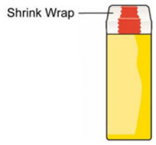
Tube and Device Parts



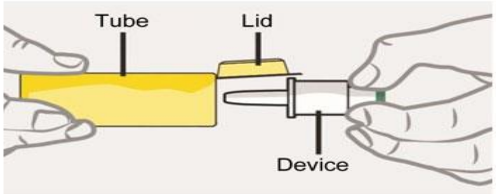
Important Information to Know

- **Do not** remove the Shrink Wrap or open the Tube until you are ready to use it.
- If the Tube has been opened, BAQSIMI could be exposed to moisture. **This could cause BAQSIMI not to work as expected.**
- Do not push the plunger or test BAQSIMI before you are ready to use it.
- BAQSIMI contains 1 dose of glucagon nasal powder and **cannot** be reused.
- BAQSIMI is for nasal (nose) use only.
- BAQSIMI will work even if you have a cold or are taking cold medicine.

Preparing the Dose

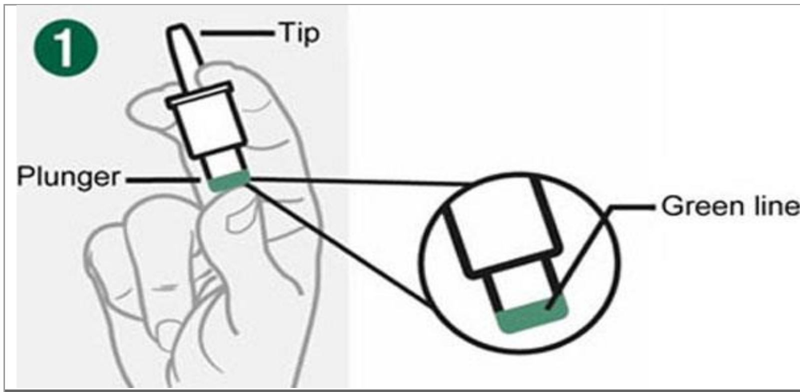
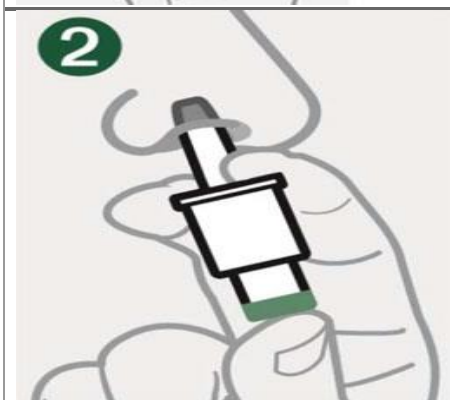
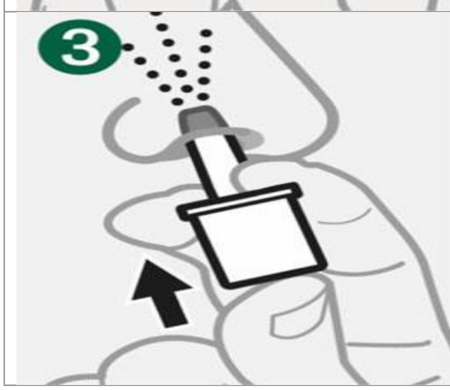


- Remove the Shrink Wrap by pulling on red stripe.



- Open the Lid and remove the Device from the Tube.
- **Caution: Do not press the Plunger until ready to give the dose.**

Giving the Dose

	**Hold Device between fingers and thumb.** **Do not push Plunger yet.** **Green Line**
	**Insert Tip** gently into one nostril until finger(s) touch the outside of the nose.
	**Push Plunger** firmly all the way in. **Dose is complete when the Green Line disappears.**

After giving BAQSIMI
Call for emergency medical help right away.

If the person is unconscious turn the person on their side. **Write the date and time on the used Device and Tube.**

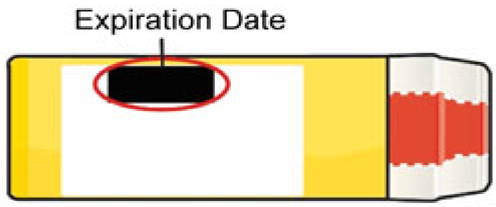
Encourage the person to eat as soon as possible. When they are able to safely swallow, give the person a fast-acting source of sugar, such as juice. Then encourage the person to eat a snack, such as crackers with cheese or peanut butter.

If the person does not respond after 15 minutes, another dose may be given, if available and instructed in DMMP.

Storage and Handling
Do not remove the Shrink Wrap or open the Tube until you are ready to use it.

Store BAQSIMI in the shrink-wrapped Tube at temperatures up to 86º F (30ºC).

Replace BAQSIMI before the expiration date printed on the Tube or carton.



Other Information
Caution: Replace the used BAQSIMI right away so you will have a new BAQSIMI in case you need it.

Keep BAQSIMI and all medicines out of the reach of children.

For Questions or More Information about BAQSIMI Visit www.baqsimi.com

←Use this link for video instructions

Steps for Administering Gvoke

1. Pull red cap off

2. Push Yellow end down on skin of upper arm, stomach or thigh.
Hold for 5 seconds.

←

Use this link for Gvoke video instructions

Performance Standard 5: ONGOING DIABETES MANAGEMENT AND SUPPORT

American Diabetes Association: Diabetes Care Tasks Training Modules

Psychosocial (PPT)
Child Care (PPT)
Before and After School Care (PPT)
After School Programs Sports/Camps (PPT)
Nutrition and Physical Activity (PPT)
Watch the Video (2:31)

Ongoing Evaluation

Blood Sugar Trends
A1C is a test that measures the person's average blood sugar level over the past 2 to 3 months. Hemoglobin (HEE-mo-glo-bin) is the part of a red blood cell that carries oxygen to the cells and sometimes joins with the glucose in the bloodstream. Also called hemoglobin A1C or glycosylated (gly-KOH-sih-lay-ted) hemoglobin, the test shows the amount of glucose that sticks to the red blood cell, which is proportional to the amount of glucose in the blood.

Information for Teachers
A few practical implications for educators related to the prevention and/or intervention of hyper- and hypoglycemia:

- Students may need a snack prior to any physical activity.
- Students with hyperglycemia or hypoglycemia often do not concentrate very well. Students may need to have information repeated.
- Students should have adequate time for taking medication, checking blood glucose, and eating.
- During academic testing:
    - Students should check blood glucose before and during testing, if specified in their plan.
    - Students should have access to food/drink and restroom during the testing period
    - Students should be excused from testing with an opportunity for retake later, should a serious high or low blood glucose episode occur.

Resources:

1. National Association of School Nurses. (2016). *Diabetes management in the school setting* (Position Statement). Silver Spring, MD: Author. https://www.nasn.org/advocacy/professional-practice-documents/position-statements/ps-diabetes

2. How Do You Plan Effective Diabetes Management in the School Setting?, NIH, National Institute of Diabetes, Digestive and Kidney Diseases, https://www.niddk.nih.gov/health-information/communication-programs/ndep/health-professionals/helping-student-diabetes-succeed-guide-school-personnel/diabetes-overview/effective-diabetes-management-school-setting#emergencycareplans

3. Michigan State Board of Education Model Policy on the Management of Diabetes in the School Setting, https://www.michigan.gov/documents/mde/SBE_Model_Policy_on_the_Management_of_Diabetes_in_the_School_Setting_FINAL_11-8-11_370189_7.pdf

4. JDRF School Advisory Toolkit for Families, https://www.jdrf.org/wp-content/docs/JDRF_School_Advisory_Toolkit.pdf

5. Diabetes Care Tasks at School: What Key Personnel Need to Know, http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/school-staff-trainings/diabetes-care-tasks.html

A special thank you to Sue Zacharski and members of this committee for your dedication and commitment to supporting Students with Diabetes in Michigan schools.

Supporting Student with Diabetes in School Committee

Workgroup	Name	Organization
Advocacy	Crystal Woodward	American Diabetes Association
	Denise Pentescu	Formerly JDRF
	Joan Mason	Parent Advocate
	Jacinta Florek	Michigan Medicine
	Stephanie Knight	Michigan Medicine
	Deborah Bach-Stante	State of Michigan Office of Nursing Programs
	Jared Burkhart	Michigan AAP
	Amy Zaagman	Michigan Council for Maternal and Child Health
	Gary Dougherty	American Diabetes Association
	Nancy D'Hondt	Ascension St. John
	Anna Whitaker	Oakland ISD/Health Division
	Denise Cade	Detroit Public Schools Community District
Communication	Brittany Carey	Michigan Medicine
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	Tiffany Stone	Michigan Association of Health Plans
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	Donna Doyle	Michigan Medicine
	Jacinta Florek	Michigan Medicine
	Dr. Colleen Buggs	Children's Hospital of Michigan
	Dr. Donna Eng	Helen Devos Children's
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	Dr. Barone	Henry Ford Health System
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	Bridget Bertrand	Ascension
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	Jennifer Larrea	Hurley Diabetes
	Kim Lombard	State of Michigan MDHHS Diabetes and Kidney Unit
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	Amy Martinez	Helen Devos Children's
	Amy Foreman	Helen Devos Children's
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	Nicole Matti	American Diabetes Association
	Sara Fischer	Beaumont
	Emily Falk	Beaumont
	Dianne Miller	Beaumont
Additional Support	Karen Yoder	MDHHS Adolescent and School Health Unit
	Lauren Neely	MDHHS Diabetes and Kidney Unit