

The cover page features a vertical strip on the left side with a yellow and black checkered pattern at the top and bottom, and a red and white decorative pattern in the middle. This strip contains three photographs: a young woman smiling, a young girl smiling, and a young boy looking to the side. The main title is at the top, and the subtitle and date are in the center. Contact information for the Maryland State Department of Education and the Maryland Department of Health is at the bottom. Logos for both departments are at the bottom right.

# MARYLAND STATE SCHOOL HEALTH SERVICES GUIDELINE

## MANAGEMENT OF DIABETES IN SCHOOLS

**MAY 2017**

**(DMMP Revised June 2019)**

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## FOREWORD

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There is a strong relationship between academic achievement and a child’s physical, emotional, and mental health. This link is the foundation for providing school health services as an important component of a school program. School health services provide primary prevention aimed at keeping students in schools through appropriate screenings, early identification of children at risk for physical, emotional and mental health concerns, and case management of students with chronic health concerns.

The Annotated Code of Maryland, Education Article, §7-401 requires the Maryland State Department of Education (MSDE) and the Maryland Department of Health (MDH) to jointly develop public standards and guidelines for school health programs. The guidelines developed under §7-401 contain recommendations for minimum standards of care and current best practices for the health service topics addressed. The following Management of Diabetes in Schools: Maryland State School Health Services Guideline (Guideline) was developed in accordance with that requirement and is based on the expressed needs of the local school health services programs. It is intended that this Guideline will be used by the local school systems in developing local school health services policies and procedures to provide consistent and safe care to the students of Maryland. Specific laws and regulations that direct school nursing practice or other health services are identified in the Guideline.

In 2016, the Maryland legislature passed [House Bill 771](#), Chapter 277, entitled “Public Schools – Administration of Diabetes Care Services – Guidelines,” and codified in the Annotated Code of Maryland, Education Article, §7-426.4, requiring MDH and MSDE to develop guidelines related to the provision of care to students with diabetes. To implement these guidelines, local school health services programs should recognize the role of the school health services coordinator as required under the Annotated Code of Maryland, Education Article, §7-401(C)(2)(ii), to “ensure that public schools adhere to local health services guidelines.” Local school systems and local health departments should support the role of the school health services coordinator to implement these guidelines and consult with the Maryland State Department of Education and the Department of Health who will:

- ❑ Assist and provide technical assistance to local school health programs to support their efforts to plan for students with special health needs;
- ❑ Provide training to all appropriate school staff regarding issues related to students with special health needs including, but not limited to, planning, maintaining a safe environment, and medication administration issues; and
- ❑ Monitor the implementation of school health services programs, including but not limited to, programs and policies related to students and staff with special health needs.

This document was developed with the input and review of the Maryland Board of Nursing and represents nursing practice guidelines that are consistent with the Maryland Nurse Practice Act and regulations. These guidelines do not override any existing state or federal laws. Any questions concerning legal obligations should be addressed to the local school system legal counsel.



## APPLICABLE LEGAL AUTHORITIES

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Americans with Disabilities Act of 1990, As Amended (ADA)

<https://www.ada.gov/pubs/adastatute08.pdf>

Family Educational Rights and Privacy Act (FERPA)

<http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html>

Individuals with Disabilities Education Improvement Act (IDEIA)

<https://legcounsel.house.gov/Comps/Individuals%20With%20Disabilities%20Education%20Act.pdf>

Rehabilitation Act of 1973, Section 504

<http://www2.ed.gov/about/offices/list/ocr/504faq.html>

Annotated Code of Maryland, Education Article § 7-401

School health program

<http://mgaleg.maryland.gov/webmga/frmStatutesText.aspx?article=ged&section=7-401&ext=html&session=2017RS&tab=subject5>

Annotated Code of Maryland, Education Article § 7-426.4

Public Schools - Administration of Diabetes Care Services – Guidelines

[http://mgaleg.maryland.gov/2017RS/Statute\\_Web/ged/7-426.4.pdf](http://mgaleg.maryland.gov/2017RS/Statute_Web/ged/7-426.4.pdf)

Annotated Code of Maryland, Courts and Judicial Proceedings Article § 5-603

Emergency medical care

<http://mgaleg.maryland.gov/webmga/frmStatutesText.aspx?article=gcj&section=5-603&ext=html&session=2015RS&tab=subject5>

Maryland Nurse Practice Act –Regulations

[http://www.dsd.state.md.us/comar/subtitle\\_chapters/10\\_Chapters.aspx#Subtitle27](http://www.dsd.state.md.us/comar/subtitle_chapters/10_Chapters.aspx#Subtitle27)

School Health Services Standards — For All Students with Special Health Needs

Code of Maryland Regulations 13A.05.05.08

<http://www.dsd.state.md.us/comar/comarhtml/13a/13a.05.05.08.htm>

## EXECUTIVE SUMMARY

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Diabetes is a chronic disorder of carbohydrate, fat, and protein metabolism characterized by hyperglycemia and glycosuria resulting from inadequate production or utilization of insulin. The care of students with diabetes involves daily medication administration, monitoring of food intake and physical activity. Diabetes management in the school setting also requires attention to the student's academic needs and rights. Federal law grants all students the right to equal opportunity to participate in all school activities and school sponsored events. Any student with a chronic condition such as diabetes cannot be denied access to any school activity based on their needs related to their medical condition. These Federal provisions, along with quality medical/nursing management principles, form the foundation upon which diabetes care takes place in the school setting. This comprehensive Guideline outlines care for students with diabetes including development of an individualized health plan, emergency plan, school staff training, and educational supports for the student with diabetes. Planning for diabetes care in the school setting requires a collaborative approach with the school nurse as the leader related to health services. The Guideline stresses the importance of a coordinated team approach that includes the student and their family, the diabetes care specialist and other health care providers, teachers, counselors and other school staff, to implement routine and emergency diabetes medical care and the educational activities for students with diabetes. The nursing appraisal and the nursing assessment form the basis upon which individualized health plans and emergency plans are developed by the school nurse. These nursing tasks are outlined in the Guideline. Based on nursing judgment, the school nurse may delegate certain diabetes care tasks. The Code of Maryland Regulations 10.27.11.02 (6), under the authority of the Maryland Nurse Practice Act (Health Occupations Article, Subsection 8), defines delegation as “the act of authorizing an unlicensed individual, a certified nursing assistant, or a medication technician to perform acts of registered nursing or licensed practical nursing.” For the purposes of the Guideline, the term “delegation” is used to describe authorizing nursing tasks to be performed by Certified Medication Technicians (CMT) and/or Certified Nursing Assistants (CNA) as a routine part of their job, and the term “trained” is used to describe the provision of instruction and direction to authorize tasks to be performed by unlicensed school staff who do not routinely perform the task(s). The decision as to whether the student's health care needs may be met by delegation to other school health services staff (e.g., CMT, CNA) or by training of an unlicensed individual (e.g., teacher, coach, other school staff) is made using the criteria for delegation as outlined in the Maryland Nurse Practice Act, all applicable regulations, and the registered nurse's professional judgment. Diabetes care should be provided according to the student's diabetes medical management plan/health care provider orders, Individualized Health Plan (IHP) and local school system policy. In the absence of a delegation decision and plan or training of unlicensed school staff, the school system is still accountable to ensure the student's needs are fully met to comply with both state and federal laws.

The school nurse should communicate the students' needs to the school administrator, and work with the school administrator so appropriate plans may be made. Additionally, the school nurse should work with the school health services coordinator or supervisor/manager for students with complex and/or challenging needs when needed. It is the school's responsibility to be sure a school nurse, another school health services staff, or trained school staff is available to provide (or support the student's self-management) needed care as indicated in the Diabetes Medical Management Plan (DMMP)/health care provider orders during the school day and during all school-sponsored activities. Resources for training unlicensed school personnel are not included in this document.

A list of curriculum content/training materials may be found in the resources section of this document. **The provision of diabetes care to students is not a required condition of employment for school staff not employed as part of the school health services program. A school administrator cannot require a teacher to perform diabetes care tasks by virtue of the student’s placement in that teacher’s class.**

The school has the responsibility to provide appropriate staff to provide, or support, the routine and emergency needs of students with diabetes during school-sponsored events and field trips based on the student’s DMMP/health care provider orders and nursing assessment. Based on nursing judgement, the school nurse, a substitute nurse (e.g., another nurse who is not the usual school nurse), other school health services program staff or other trained school staff, should be available during all school-sponsored activities (i.e., activities attended by the student as a participant; not activities attended as an observer) to provide needed diabetes care based on the student’s needs or support the care of students who self-manage their diabetes. When appropriate, based on the activity, parents should be given the opportunity to participate if they choose. However, **parents cannot be required to participate in/attend school-sponsored events and activities or field trips as a condition of the student’s participation.**

An important element of diabetes management is coordinating blood glucose monitoring, meals, snacks, physical education (or exercise and physical activity) and medication administration. Students with diabetes may require accommodations. Students with diabetes should be individually assessed for their eligibility for services under Section 504 and if eligible, an appropriate 504 accommodations plan should be developed by the Section 504 plan team. If a student with diabetes qualifies for special education services, an Individualized Education Program (IEP) may also include specific accommodations. The school nurse should work with the school administration and be included as a valuable team member attending the Section 504 eligibility meetings to provide information related to the student’s diabetes management needs. The school nurse, in collaboration with the school administrator, parents, and health care provider may recommend to the Section 504 plan team any accommodations needed during a school-sponsored event, or activity, or field trip. An informational brochure is included in the Guideline to assist schools in the development of appropriate Section 504 plans for students with diabetes. This brochure contains a list of sample accommodations for students with diabetes. The list contains a broad range of services and modifications that should be considered, in accordance with the student’s DMMP/health care provider orders and nursing assessment, for students with diabetes ranging from kindergarten through high school. The list is not exhaustive nor is it meant to suggest that these accommodations are appropriate for every student. Individual student needs will vary, but the education plans are likely to address the common elements listed in the brochure.

Local school systems are required to adhere to the federal requirements under Section 504 when evaluating students for eligibility and when developing a Section 504 plan. Accommodations for any particular student will vary based on an individualized assessment that is designed to provide students with diabetes equal opportunity to participate in school programs and activities. Accommodations for individual students should reflect the unique needs of individual students, be developmentally appropriate and school/activity specific. As the student advances through the school system, his/her needs may change, therefore, accommodations and the Section 504 plan should change accordingly. This guideline provides general information regarding Section 504 as it may apply to students with diabetes and is not meant to be a substitute for the individualized

assessment that must be done for each student. Specific questions regarding the Section 504 plan process should be addressed to the local school health services coordinator and/or the student services team.

Diabetes care is provided according to the student’s DMMP/health care provider orders. The school nurse makes decisions regarding how to implement the DMMP/health care provider orders and serves as the liaison between the health care team, school staff, administration, pupil services staff, parents/guardians, food service managers, and the student regardless of who is the designated case manager. School diabetes management requires an understanding of roles and responsibilities of school health services staff, school administrators, school food service staff, other school staff, parents/guardians and students in the care and education of students with diabetes as outlined in the Guideline. In addition, it requires strong nursing leadership and nursing judgment to determine the best and safest mechanisms to meet the daily needs of students with diabetes.

Care for students with diabetes should be individualized. This Guideline is an important tool to guide local school health services programs to develop local policy and procedures to meet the needs of students with diabetes. Ongoing communication between schools, school health services staff, families, health care providers and students is an important aspect of the successful implementation of the Guideline.

## SECTION I: BACKGROUND

### INTRODUCTION

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Diabetes is a chronic condition requiring daily management. Optimal diabetes management requires a balance between food, exercise and insulin/medications. This balance is achieved through regular blood glucose monitoring, insulin administration, monitoring carbohydrate intake, and physical activity. Quality medical/nursing management principles, Maryland School Health Services Standards, the Maryland Nurse Practice Act, Section 504 of the Rehabilitation Act of 1973 (Section 504), the Americans with Disabilities Act of 1990 (ADA) and its subsequent amendments, the Individuals with Disabilities Education Act (IDEA) as amended, and the Annotated Code of Maryland, Education Article § 7-426.4 form the legal foundation upon which diabetes care takes place in the school setting. This comprehensive Guideline outlines the team based approach for the care of students with diabetes including development of an individualized health plan, emergency plan, school staff training, and educational supports for the student with diabetes.

All students have the right to equal access to all school activities and school sponsored events. Any student with a chronic condition such as diabetes cannot be denied access to any school activity based on their needs related to the medical condition.<sup>1, 2, 3</sup> Keeping students with diabetes safe in school requires procedures for rapid recognition and treatment of hypoglycemia and hyperglycemia. This requires the development of a diabetes medical management plan and emergency plan and may also require unlicensed school staff to provide certain diabetes management care, when appropriate, in accordance with this Guideline as required by Annotated Code of Maryland, Education Article § 7-426.4.<sup>4</sup>

When a student with diabetes enters a school or a student in the school 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 an individualized health plan to meet his/her needs in the school setting based on the nursing assessment and the student's DMMP/health care provider orders. The school nurse should refer to the [\*Maryland State School Health Services Guideline on Nursing Appraisal\*](#) for general guidance on conducting a nursing assessment for students with chronic conditions. Care of the student with diabetes is guided by the student's DMMP/health care provider orders. The school nurse is also responsible for informing and training appropriate school personnel of the special health needs of students with diabetes and providing guidance regarding their need for accommodations (i.e., blood glucose monitoring, transportation, field trips, and participation in educational activities). Additionally, the school nurse is instrumental in the reinforcement of individualized diabetes education and information for the student and family.

## PURPOSE

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The purposes of this Guideline are to:

1. Provide school health services programs with information, resources and tools for training and planning, and a framework for policy development related to team based diabetes management that equips them to provide quality school diabetes management;
2. Assist school health services program staff to manage and coordinate the care of students with diabetes so students remain safe in school, are supported to optimally learn, and can have an equal opportunity to participate in all aspects of school programming, including after school activities and other school sponsored events;
3. Guide the development and implementation of diabetes medical management plan (DMMP)/health care provider orders, individualized health plans, Section 504 plans and emergency plans for students with diabetes; and
4. Define the roles and responsibilities of school health services staff, school administrators, school food service staff, other school staff, parents/guardians and students in the care and education of students with diabetes.

## SECTION II: MANAGEMENT OF DIABETES

### DEFINITION OF DIABETES

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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 damage to eyes, kidneys, nerves, heart and blood vessels.

There are three types of diabetes. These include:

- ❑ **Type 1 Diabetes:** Type 1 diabetes is an autoimmune disease. The autoimmune process results in the destruction of the beta cells of the pancreas causing an inability of the pancreas to produce insulin. A person with Type 1 diabetes needs daily administration of insulin to live;
- ❑ **Type 2 Diabetes:** Type 2 diabetes results from the body's inability to use insulin adequately due to insulin resistance. Type 2 diabetes is managed with diet, exercise, and medications. Sometimes insulin is required to treat type 2 diabetes; and
- ❑ **Gestational Diabetes:** Gestational diabetes is a temporary hormonally mediated state of insulin resistance that occurs during pregnancy and is managed primarily with diet. Physical activity and insulin may also be required. Gestational diabetes usually resolves after childbirth, but increases the mother and the child's risk of developing diabetes later in life.

Optimal diabetes management requires a balance between food intake (which increases blood glucose), exercise (which reduces blood glucose) and insulin/medications. When there is an imbalance, hypoglycemia (low blood glucose) or hyperglycemia (high blood glucose) may result.

### ROUTINE DIABETES MANAGEMENT

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Routine diabetes management requires coordination of blood glucose monitoring, meal planning, physical activity, and administration of insulin and other medication(s). For students with diabetes, these routine tasks must be performed in the context of the student's academic and other learning activities. School diabetes management should seek to provide diabetes care that minimizes disruption to the student's academic experience. Providing services through a collaborative team approach as well as student self-management of diabetes are effective strategies to achieve this goal.

### BLOOD GLUCOSE MONITORING

Blood glucose monitoring may be ordered by the student's health care provider before lunch, before physical activity/exercise, before snacks, for symptoms of hypoglycemia or hyperglycemia, and/or other times (e.g., during an illness or recovery from an illness). Blood glucose monitoring in the classroom (or other locations in the school) is allowed, and should be supported as appropriate based on individual student needs. School system policy should not

prohibit blood glucose monitoring in the classroom. Determination of the student’s ability to perform blood glucose monitoring in the classroom should be made based on several factors including DMMP/health care provider orders, nursing assessment, specific aspects of the school setting and the student’s developmental capability. When assessing the student’s ability to perform blood glucose monitoring in the classroom the school nurse should consider, as indicated, whether:

- The health care provider has indicated on the student’s DMMP/health care provider orders the student is independent in doing blood glucose monitoring;
- The student desires to perform blood glucose monitoring in the classroom;
- The student can perform the procedure safely for him/herself and the protection of others;
- The student is aware of blood spill clean-up procedures/standard precautions;
- The equipment is safely stored and easily accessible to the student;
- The student is able to implement the plan for disposal of used lancets and blood glucose monitoring materials;
- The student feels comfortable performing the procedure outside of the health suite or there is a private space available;
- The classroom teacher is aware of the student’s diabetes and needed care in the classroom; and
- The student is capable of consistently correctly responding to the blood glucose result.

### CONTINUOUS GLUCOSE MONITORING (CGM)

Some students may utilize a continuous glucose monitor (CGM). The CGM works through a sensor inserted under the skin and measures interstitial fluid glucose levels at regular intervals and sends the current recorded level to a monitor. The monitor may be part of the insulin pump or a separate device, which may include a smartphone that is carried or worn by the student in a pocket, backpack, or purse. The CGM is a useful tool for identifying blood glucose trends and can enhance the ability of the student’s personal diabetes health care team to make needed adjustments to the student’s diabetes care plan.<sup>5</sup>

The CGM sets off an alarm when glucose levels are outside a set range or when they are increasing or decreasing at a rapid rate. Appropriate action should be taken in accordance with the student’s DMMP/health care provider orders. **It is important to note that at this time, it is not routinely recommended that treatment decisions and diabetes care plan adjustments be based solely on CGM results.** School nurses should discuss this indication for CGM use on a case-by-case basis with the student’s health care provider. The sensor’s glucose levels should be confirmed with a blood glucose meter whenever the reading suggests a need for treatment.<sup>5</sup> The school nurse or trained school staff should implement the student’s DMMP or emergency plan for low alarms which may include verifying the blood glucose in the classroom or other designated location. If



the student is not able to perform the finger stick independently, a trained school staff may perform the finger stick. If necessary, the student should be escorted to the health room for a finger stick when not symptomatic.

Some CGMs transmit data remotely to multiple devices at the same time allowing the school nurse, the student's health care providers, as well as the parent/guardian access to the CGM data and alarms in real time at locations remote from the student. School nurses are not responsible for the continuous receipt of CGM results throughout the school day. Parents may communicate to the school nurse when notified of a high or low blood glucose result from a CGM. The school nurse should address the use of cell phone technology with the family and the provider on a case-by-case basis. Due to confidentiality concerns, school nurses should not maintain communication with a CGM through their personal cell phones.

Some pumps have the data from continuous blood glucose monitoring displayed on the pump screen. Communication between the pump and the CGM has led to a "threshold suspend pump" feature. This feature allows for the automatic cessation of insulin delivery from the pump when a pre-set low blood glucose threshold is detected by the CGM. When this occurs, the pump alarms and stops insulin delivery for two hours, unless the user manually restarts insulin delivery.

The following actions should be considered and implemented for students utilizing a CGM<sup>5</sup>:

- Confirm CGM results with blood glucose meter check before taking action on the sensor reading according to the student's DMMP/health care provider orders;
- Check finger stick blood glucose level regardless of CGM if student has signs or symptoms of hypoglycemia;
- Give insulin injections at least three inches away from the CGM insertion site;
- Develop a plan in collaboration with the student, parent/guardian and provider regarding CGM use for sports participation;
- Develop a plan in collaboration with the student, parent/guardian and provider regarding response to CGM alarms;
- Reinforce sensor placement with approved medical tape if the adhesive is peeling;
- Return sensor and device to the parent/guardian if the CGM becomes dislodged. Do not throw any part away; and
- Refer to the manufacturer's instructions on how to use the student's device.

### KETONE MONITORING

Ketones develop because of insufficient insulin or lack of adequate carbohydrate intake and rarely due to elevated blood glucose. Unlike syringe injected insulin where a basal insulin can be present for several hours, when using an insulin pump, students can very quickly (1-2 hours) develop

ketones as a result of sudden cessation of insulin delivery (e.g., pump failure, site dislodging, insufficient bolusing). Ketone monitoring may be done via blood or urine testing and should be performed based on a student’s DMMP/health care provider orders. Urine ketone levels lag behind blood levels. While blood testing provides more “real-time” results, cost may prohibit some students from using blood ketone monitoring.

### CLINICAL LABORATORIES IMPROVEMENT ACT REQUIREMENTS

Each school with a student with diabetes in attendance must comply with the Federal and State requirements of the Clinical Laboratories Improvement Act (CLIA) to perform or assist students to perform or interpret finger stick blood glucose or urine or blood ketones testing.<sup>6</sup> CLIA requires manufacturer’s instructions for laboratory testing devices/equipment to be available on site for all devices used in the building. This may be done by having parents/guardians provide the necessary user manuals or by accessing them from manufacturer’s websites and storing them electronically or in a binder in the health suite.

### INSULIN ADMINISTRATION

Some students with type 1 or type 2 diabetes may need assistance administering their insulin while others may administer on their own. Those needing assistance may be supported by a school nurse or an appropriately trained school staff. Insulin should be administered according to the student’s DMMP/health care provider orders. Every effort should be made to administer insulin in a manner that minimizes disruption to the student’s schedule; however, It may be necessary to require insulin be administered in the health suite.

In order for children to receive medication or have medical procedures performed (e.g., blood glucose monitoring) 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 health care provider. However, the student’s health care provider may authorize the student’s parent/guardian to make changes to the orders (e.g., carbohydrate ratios, insulin dosage) within the parameters identified for each student and specified on the diabetes order form. This authorization may be necessary to maintain appropriate diabetes control and should be carried out in collaboration with the health care provider and the student’s parent/guardian. This process requires ongoing communication between the school, school nurse, parent/guardian, and health care provider.

### INSULIN PUMP MANAGEMENT

Students using pumps for insulin administration should have details of their insulin regimen on the DMMP/health care provider orders specifying the pump settings, including basal rates, carbohydrate ratios, correction factor and blood glucose target. The pump will calculate the insulin dose based on the blood glucose and carbohydrates to be eaten at a specific meal/snack. The pump calculation of the insulin dose is based on a defined algorithm that takes into account “insulin on board” (IOB); that is, it adjusts the needed insulin based on the amount of insulin remaining in the body (on board) from the previous insulin bolus by subtracting the IOB from the amount needed for the next bolus. The pump will indicate how the bolus amount was calculated based on the pump settings. The specific algorithm for IOB varies between pumps and type of insulin (e.g., action

time and time since last dose). **There is no need for the school nurse to verify/recalculate the pump derived insulin dose. The sophisticated nature of this calculation to determine the needed insulin bolus dose cannot be replicated by hand by the school nurse. However, the school nurse should verify the pump settings (based on the student’s diabetes medical management plan (DMMP)/health care provider orders or any updates provided by the parent/guardian) and that the correct blood glucose and carbohydrate amount eaten is entered in the pump. Once settings, carbohydrate intake and blood glucose entry is verified, the insulin dose calculated by the pump may then be administered.**

Parents/guardians and/or students who self-manage are required to communicate any changes with pump settings to the school nurse. The school nurse should document these changes in the student’s health record. Changes in pump settings should be consistent with the DMMP/health care provider orders. Changes outside the parameters of the DMMP/health care provider orders should be communicated to the school nurse by the health care provider. A collaborative approach should be used to determine the best mechanism for communication of changes in pump settings.

### **SELF-MANAGEMENT**

Based on nursing assessment and provider orders, students who are developmentally capable and have received appropriate and adequate instruction should be supported to self-manage their diabetes including administration of insulin. The school nurse should assess each student individually. Information and input from the student’s parents/guardian, school staff, health care provider, and the student should be used to assess the student’s ability to self-manage including ability to self-administer insulin. Based on nursing judgment and considering the student’s developmental abilities and school schedule, the nurse will develop a plan for the student to self-manage their diabetes. Students who self-manage may also need assistance to perform diabetes care tasks from time to time.

For students to self-manage their diabetes, the health care provider and parent/guardian must indicate on the school diabetes medication order form which diabetes management tasks the student can perform independently and those for which they need supervision or assistance. It is important to understand the needs and the self-management skills of students with diabetes change over time and in different settings. This may require new orders from their health care provider and should be reflected on the student’s IHPs. It may also trigger a change to a Section 504 plan or IEP. (See Section IX for additional discussion of this topic). Communication between the school nurse, student, parent/guardian, and health care provider is important when supporting students to self-manage their diabetes. Students who self-manage their diabetes should be permitted to perform diabetes care tasks in the classroom, other locations at the school and at all school-sponsored events.

## SECTION III: RECOGNITION AND MANAGEMENT OF HYPOGLYCEMIA AND HYPERGLYCEMIA

### MANAGEMENT OF HYPOGLYCEMIA

Hypoglycemia occurs when the blood glucose level is abnormally low, usually below 70 mg/dl.<sup>7</sup> Severe hypoglycemia, if left untreated, can cause seizures, coma or death. Hypoglycemia has many causes. Certain situations may place a student at risk of hypoglycemia. Causes include but are not limited to those contained in Table 1.

**Table 1**

<b>CAUSES OF HYPOGLYCEMIA <sup>7</sup></b>
Excess insulin
Delayed or skipped meals or snacks
Insufficient carbohydrate intake
Increased, intense or unplanned exercise or physical activity
Illness, especially gastrointestinal illness

Common signs and symptoms of hypoglycemia are contained in Table 2. The list in Table 2 is not all-inclusive. Symptoms may vary between/be unique to individuals. It is important for mild hypoglycemia to be treated quickly to prevent severe hypoglycemia. Severe hypoglycemia is a medical emergency; therefore, it is important for school staff to know the signs of hypoglycemia and how to respond according to the student’s DMMP/health care provider orders and emergency plan.

**Table 2**

<b>SIGNS AND SYMPTOMS OF HYPOGLYCEMIA <sup>5,7,8</sup></b>		
<b>Organ System</b>	<b>Mild/Moderate Sign(s)/Symptom(s)</b>	<b>Severe</b>
<b><i>Mouth/Throat</i></b>		Inability to swallow
<b><i>Nose/Eyes/Ears</i></b>	Blurred vision	
<b><i>Skin</i></b>	Sweating; pallor	
<b><i>Heart</i></b>	Dizziness; palpitation; lightheadedness	
<b><i>Mental</i></b>	Drowsiness; anxiety/nervousness; restlessness; depressed mood; irritability; confusion/disorientation; unsteady/uncoordinated movement; inability to concentrate; abnormal behavior/changed personality	
<b><i>Neurologic</i></b>	Dizziness; tremor/shakiness; slurred speech; tingling in the hands, feet, lips, or tongue; headache; blurred vision; weakness; lethargy	Seizures; Unconsciousness; Unresponsive
<b><i>Other</i></b>	Hunger	Increased symptoms despite treatment for mild/moderate symptoms; Death

Prevention of hypoglycemia is an important aspect of diabetes management. Hypoglycemia can develop and evolve quickly (in minutes), so actions and plans to prevent hypoglycemia and quickly respond to hypoglycemia should be included in each student’s individualized health plan and/or emergency plan as specified in the student’s DMMP/health care provider orders. Treatment for hypoglycemia is guided by a student’s DMMP/health care provider orders. Delegation to a CMT and/or CNA or training and instruction to a designated unlicensed school staff may be required to ensure a rapid response to hypoglycemia. See the National Diabetes Education Program resource at the end of the Guideline for information regarding the principles of hypoglycemia management and emergency planning.

**MILD OR MODERATE HYPOGLYCEMIA**

**Mild or moderate hypoglycemia** should be treated quickly by the school nurse or other designated and trained school staff to prevent progression to severe hypoglycemia and eliminate or reduce the need for emergency intervention. Symptoms of low blood glucose should be treated quickly with a fast-acting sugar according to the student’s DMMP/health care provider orders and individualized health plan (IHP). When a student is having symptoms or reports hypoglycemia, immediately administer fast-acting sugar. See examples of fast-acting sugar in Table 3. **Specific products for individual students are dictated by the student’s DMMP/health care provider orders and parent preference.**

**Table 3**

<b>Examples of Fast-Acting Sugar (for approximately 15 grams of sugar)</b>	
100% fruit juice	4 ounces
Regular (not diet) soda	4-6 ounces
Easily chewable candy	<ul style="list-style-type: none"> <li>• 2-3 rolls of Smarties®</li> <li>• 10 Sweet Tarts®</li> <li>• 15 Skittles®</li> <li>• 15 regular jelly beans</li> <li>• 7-8 gummy Life Savers®</li> </ul>
Cake decorating gel (fat free)	3 teaspoons (1 Tablespoon)
Table sugar	<ul style="list-style-type: none"> <li>• 1 Tablespoon</li> <li>• 4 packets</li> </ul>
Glucose Tabs	3-4 tabs
Insta-Glucose® or similar product	Based on instructions

After treating hypoglycemia, it is important to continue monitoring blood glucose according to the student’s DMMP/health care provider orders. Follow the student’s DMMP regarding consumption of a meal or snack following treatment for hypoglycemia. If symptoms increase or blood glucose continues to decrease, follow the student’s DMMP/health care provider orders regarding glucagon administration and **call 911.**

**SEVERE HYPOGLYCEMIA**

Severe hypoglycemia is a medical emergency; therefore, it is important to have quick access to Glucagon. Glucagon is a hormone that is produced by the pancreas that raises blood glucose by

causing the release of glycogen (a form of stored carbohydrate) from the liver. When used as a medication, it raises blood glucose in instances of hypoglycemia. The school nurse may delegate glucagon administration to another member of the school health services team.<sup>9, 10</sup> In addition, since glucagon is an emergency medication, glucagon may be administered by trained unlicensed school staff designated to do so.<sup>10,11</sup>

Dosing and formulations of some glucagon products are contained in Table 4 as a reference. This does not constitute an exclusive list of formulations. **Each instance of glucagon administration should be administered in the dosage and route prescribed by the student’s DMMP/health care provider orders. If glucagon is administered, a call to 911 is required.**

**Table 4**

<b>FORMULATION AND MANUFACTURERS’ DOSING OF GLUCAGON</b> <sup>8,12</sup>			
<b>Dosing Category</b>	<b>Weight</b>	<b>Glucagon Dosage and Administration</b>	<b>Device Formulation/ Products</b>
Older Child (>6 years of age) and Adult	Greater than 44 lbs. (20 kg)	1.0 mg (1.0 unit) subcutaneous, intramuscular  May repeat in 15 minutes if necessary	<ul style="list-style-type: none"> <li>• Glucagon Kit<sup>®</sup></li> <li>• GlucaGen HypoKit<sup>®</sup></li> </ul>
Younger Child (<6 years of age)	Less than 44 lbs. (20 kg)	0.5 mg (0.5 unit ) subcutaneous, intramuscular  <b>Equal to: ½ adult dose of Glucagon</b>  May repeat in 15 minutes if necessary	<ul style="list-style-type: none"> <li>• Glucagon Kit<sup>®</sup></li> <li>• GlucaGen HypoKit<sup>®</sup></li> </ul>

**Glucagon works only when the liver has sufficient glycogen stores. It is important to give sips of sugared drinks (e.g., juice or regular soda) as soon as the student is able to take fluids by mouth. Alternatively, other fast-acting sugar products may be used orally or intrabuccally according to the student’s DMMP/health care provider orders.**

When a person is having, or is suspected of having a **hypoglycemic emergency**, the following emergency actions should be taken:

1. Rapidly assess Circulation, Airway, and Breathing, (CAB’s) and begin CPR as necessary;
2. Administer glucagon according to student’s DMMP/health care provider orders/emergency plan. Manufacturer’s instructions for the use of the Glucagon Kit<sup>®</sup> may be found at the manufacturer’s web site (<http://www.lillyglucagon.com/#how-to-use>). See [Appendix A](#) for alternate instructions for administering glucagon;
3. If there is no DMMP/Health Care Provider Order Form or glucagon available, follow protocol as outlined in the *“Guidelines for Emergency Care in Maryland Schools”* for diabetes emergencies;

4. Call 911 or direct someone to call 911. Notify the dispatcher that you are calling regarding a child (<18 y.o.) or an adult (>18 y.o.) with a diabetes hypoglycemia emergency and that glucagon was given for severe hypoglycemia with unconsciousness.<sup>13</sup> Follow EMS instructions;

**SPECIAL NOTE-- Emergency medical care is required for persons treated with glucagon for severe hypoglycemia. Therefore, 911 should always be called if glucagon is administered.**

5. Discard sharps in accordance with the local blood borne pathogens procedures;
6. Continue to monitor vital signs (if trained to do so) and respond as indicated;
7. Place student in recovery position (**Note--after receiving glucagon a student may vomit. Observe and monitor to avoid choking if student vomits**);
8. Loosen restrictive clothing. Give nothing by mouth except as ordered by an authorized prescriber as part of an emergency plan to treat hypoglycemia;
9. When the student responds, give supplemental carbohydrate (snack or meal) according to student's emergency plan;
10. Stay with the student until 911 personnel arrive and accept care responsibilities;
11. Continue to monitor blood glucose level according to the student's DMMP/health care provider orders;
12. Notify parent/guardian or student's emergency contact;
13. Follow local school system emergency policy regarding 911 calls;
14. Complete documentation of the incident, including the time of glucagon administration, and 911 and parent notifications according to any local documentation guidelines;
15. Send documentation of the event, including vital signs, interventions and student's identifying information to the hospital with EMS personnel according to local policy; and
16. Maintain a copy of the above documentation for the health record according to local policy.

When a student experiences hypoglycemia it is important for the school nurse to communicate with the student and the student's parent/guardian regarding the precipitating factors and work with the student and the family to implement prevention interventions as appropriate. This should be done in collaboration with the student's health care provider and appropriate school personnel when needed.

## MANAGEMENT OF HYPERGLYCEMIA

Hyperglycemia is when the blood glucose is above the target range for an individual. In general, hyperglycemia is due to a mismatch between carbohydrate intake, insulin, and physical activity. Severe hyperglycemia can develop over a period of hours to weeks and can cause a hyperglycemic emergency needing prompt intervention in the school setting. Diabetic ketoacidosis (DKA) is characterized by hyperglycemia (>250 mg/dl), ketosis, acidosis and dehydration.<sup>14, 15, 16, 17</sup> In rare cases, DKA may occur with a blood glucose level <200-250 mg/dl.<sup>18</sup> Another more rare hyperglycemic emergency is hyperglycemic hyperosmolar state (HHS) which is characterized by extreme hyperglycemia (>600 mg/dl) and hyperosmolarity often with little acidosis or ketosis.<sup>15, 16, 17</sup> Some of the most common causes of hyperglycemia and precipitating factors for DKA and HHS are contained in Table 5. Insufficient insulin and infection are the most common causes. Management of hyperglycemia requires fluids, treatment of the underlying cause, and may require insulin administration.

**Table 5**

<b>CAUSES OF HYPERGLYCEMIA</b> <sup>15, 16, 17</sup>
Insufficient insulin (e.g., under treatment, non-compliance)
Illness
Inadequate glucose lowering medication
Decreased physical activity
Medications (e.g., corticosteroids)
Infection
Injury
Severe emotional or physical stress
Insulin pump malfunction
Drugs (e.g., cocaine) or alcohol

Signs and symptoms of hyperglycemia are contained in Table 6.

**Table 6**

<b>SIGNS AND SYMPTOMS OF HYPERGLYCEMIA</b> <sup>5, 16, 17</sup>		
<b>Organ System</b>	<b>Mild/Moderate Sign(s)/Symptom(s)</b>	<b>Severe/Emergency</b>
<b>Mouth/Throat</b>	Dry mouth; increased thirst	Extreme thirst; dehydration; fruity smelling breath
<b>Nose/Eyes/Ears</b>	Blurred vision	
<b>GI</b>	Change in appetite; nausea	Vomiting; severe abdominal pain
<b>Lung</b>		Heavy breathing; shortness of breath; rapid breathing
<b>Heart</b>		Chest pain
<b>Mental</b>		Sleepiness; lethargy; depressed consciousness
<b>Kidney</b>	Frequent or increased urination	
<b>Other</b>	Fatigue	



In the school setting, hyperglycemia should be treated according to the student's DMMP/health care provider orders and emergency plan. When treating hyperglycemia, it is important to consider the possibility of the presence of ketones and risk to progress to a hyperglycemic emergency (i.e., DKA). When treating ketones, additional insulin may be needed to account for ketone induced insulin resistance. Any additional insulin for correction of hyperglycemia with ketones should be done in accordance with the student's DMMP/ health care provider orders.

The school nurse or other designated school staff should follow the student's DMMP/health care provider orders for the management of hyperglycemia. In general, hyperglycemia should be managed as outlined below. See the National Diabetes Education Program resource at the end of the Guideline information on the principles of hyperglycemia management and emergency planning.

**If the student has severe symptoms of ketosis such as altered mental status or is vomiting and unable to keep down fluids, the student requires immediate medical care. Call 911 or direct someone to call 911 and follow the student's DMMP/health care provider orders and Emergency Plan.**

When a student experiences severe hyperglycemia it is important for the school nurse to communicate with the student and the student's parent/guardian regarding the precipitating factors and work with the family and the health care provider to determine if there is a pattern to the student experiencing hyperglycemia. The school nurse should work with the student and the family and the health care provider to implement prevention interventions as appropriate based on any identified cause (e.g., noncompliance in students who self-manage their diabetes).

## SECTION IV: THE NURSING PROCESS RELATED TO STUDENTS WITH DIABETES

### THE NURSING APPRAISAL

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School management of students with diabetes is individualized and begins with a nursing appraisal. Based on the results of the appraisal and nursing judgment, a nursing assessment and development of an individualized health plan may be needed.

#### INFORMATION SOURCES TO GUIDE THE NURSING APPRAISAL

The school nurse should be informed of the medical, educational, and social issues regarding students with diabetes to the greatest extent possible. The school nurse should collect this information from a review of medical and educational records (i.e., the school health record, the Student Record Card, emergency health card, and the student cumulative education record).

It is necessary for the school nurse to obtain information related to the student's health condition(s) from the parent/guardian and the student's diabetes care provider and other health care providers including any certified diabetes educator working with the student and their family. This should include:

- Up-to-date history of diabetes status from parent/guardian and diabetes care provider(s);
- Up-to-date and accurate history of other medical conditions/diagnosis from parent/guardian and health care provider(s);
- Other relevant health information and assessments from the student's health care provider(s);
- The student's DMMP/health care provider orders; and
- Additional information from the following sources if needed:
  - Student (as developmentally appropriate)
  - Teaching staff
  - Coaches or other leaders of school sponsored after-school activities
  - Classroom observation(s).

### THE NURSING ASSESSMENT

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After review of the information obtained from the appraisal, the school nurse should assess the health needs of students with diabetes. The school nurse should use local standard assessment procedures and the procedures outlined in the *"Maryland State School Health Services Guidelines: Nursing Appraisal/Assessment of Students with Special Health Needs"* to conduct the nursing assessment. The school nurse should know and follow the [Family Educational Rights and Privacy Act \(FERPA\)](#), local policies regarding release of records, information sharing, and confidentiality

when performing the nursing appraisal, assessment and health care planning. Information gleaned from the nursing assessment may require additional follow-up to determine if a student qualifies for a Section 504 plan or IEP (addressed in Section XI). The school nurse should follow local school system protocol in communicating this information to the appropriate school officials.

### IDENTIFYING INFORMATION/CONTACT INFORMATION

Identifying information, information specific to the student's diabetes, and treatment needs should include, but not be limited to the following:

- Name of parent/guardian, address, phone number, and emergency contacts;
- Student's date of birth (DOB) and grade;
- Primary care provider's name and phone number; and
- Diabetes care provider's name and phone number.

### MEDICAL HISTORY

An important part of the medical history is a thorough assessment of the current diabetes status and treatment. Much of this information is included on the DMMP/health care provider orders. The diabetes specific information along with other relevant medical history may include the following:

- Other medical conditions;
- Current medication and treatment orders for diabetes and other identified conditions, and the indications for their use;
- Emergency medications and the indication for their use;
- History of side effects or adverse reactions to current and/or past medications;
- Family history of diabetes;
- Development of disease, progress of disease, and initial diabetes diagnosis date/age, honeymoon phase;
- History of diabetes emergencies and emergency department visits for hypoglycemia and hyperglycemia/DKA;
- Signs and symptoms of hypoglycemia unique to the student;
- Previous glucagon use;
- Most recent hemoglobin A1C;

- Patterns of blood glucose levels/level of diabetes control;
- Number of days of school missed in the past year;
- Routine and emergency care/medication orders and instructions;
- Written copy of health care provider's meal/diet recommendations;
- Student awareness of symptoms of hypoglycemia/hyperglycemia;
- Blood glucose monitoring:
  - Frequency; times
  - Equipment used for blood glucose monitoring
  - Target range of blood glucose levels
  - Level of independence and goals for independence with blood glucose monitoring
- Use of a continuous glucose monitor (CGM) for monitoring trends:
  - Glucose trend information
  - Who receives the trend information
  - Necessary equipment for the CGM
  - Level of independence with use of the CGM goals for independence
- Ketone testing:
  - Urine vs. blood
  - Frequency; times and reasons for
  - Type of ketone test strips used
  - Level of independence and goals for independence
- Insulin administration:
  - Method of insulin administration (pump vs. syringe vs. pen)
    - For students using insulin pumps, the following should be assessed:
      - Type of insulin pump
      - Length of time on pump therapy
      - Verify pump settings
      - Document parent/guardian and/or student communication regarding changes in pump settings
  - Level of independence and goals for independence
  - Self-administration

## SELF-MANAGEMENT ASSESSMENT

Only those tasks that a student can perform based on the nursing assessment and DMMP/health care provider orders should be allowed to be performed independently. Not all skills need be at the same level of independence (e.g., a student who self-manages may not be able to prepare and insert infusion set but may still be allowed to self-manage.) The self-management assessment results should be documented, and parents/guardians, and the student, should acknowledge the plan regarding self-management. This acknowledgment does not constitute a contract and is subject to change based on student needs.

The school nurse should assess the student’s ability to perform diabetes management tasks and level of independence with medication/treatment. See [Appendix B](#) for an example of a self-management skills checklist. Self-management skills to be assessed may include the student’s ability to:

- Understand the goals/plans for self-management;
- Follow provider management plan with minimal supervision, or assistance;
- Count carbohydrates, calculate insulin dose;
- Measure insulin and self-inject correctly;
- Use their blood glucose meter and maintain needed supplies;
- Communicate to school staff and respond to symptoms of hypoglycemia or hyperglycemia;
- Treat/respond to hypoglycemia according to their IHP; and
- Store (i.e., away from direct light, extreme heat and freezing temperatures) and discard (i.e., within the number of days of opening specified in the manufacturer’s instructions) insulin vials correctly.

The school nurse should assess whether student demonstrates the following self-management and/or pump management skills when the student’s DMMP/health care provider orders indicates the student may self-manage:

- Setting a basal rate/temporary basal rate
- Disconnecting pump
- Reconnecting pump at infusion set
- Preparing infusion set
- Inserting infusion set

- Troubleshooting alarms and malfunctions
- Counting carbohydrates
- Bolusing insulin
- Calculating an insulin dose
- Resetting basal rate profiles
- Setting a temporary basal rate
- Administering an insulin injection if needed for dislodging of cannula
- Changing batteries
- Ability and willingness to meet student self-management responsibilities

#### EDUCATIONAL HISTORY/INFORMATION

- School performance
- Grade level
- Information needed for revision of existing/development of Section 504 plan
- Participation in special programs, (e.g., vocational program, work-study program, dropout prevention program, alternative education program, infant and toddler program, early childhood intervention, etc.)
- Participation in school sponsored after-school activities
- Transportation type and needs (e.g., length of bus ride, length of walk, does the student carry emergency supplies)

#### PSYCHOSOCIAL CONSIDERATIONS

- Family status and available supports
- Family stressors
- Ability of student and family to cope with disease
- Student and family understanding of the condition
- Parent/guardian ability to meet their [responsibilities](#) as outlined in [Section VIII](#) below

- History of diabetes education
- Developmental considerations (e.g., adolescent specific concerns)
- Involvement in disease related support groups
- Any issues related to access to health care and diabetes supplies;
- Health insurance needs and other additional resources
- Cultural considerations
- Level of independence and plans/goals for independence

The school nurse should maintain an up-to-date student health record for students with diabetes. The health record should contain:

- Current DMMP/health care provider orders;
- An initial and annually reviewed and updated health appraisal and nursing assessment;
- A current emergency plan; and
- Current emergency contact information and numbers, updated at least annually.

## INDIVIDUALIZED HEALTH PLANS

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The school nurse should develop a written individualized health plan (IHP) to provide appropriate diabetes management in school. The IHP should be based on the information obtained in the nursing appraisal and assessment and the student's DMMP/health care provider orders. The plan should be developed in collaboration with the student's parent/guardian and the student's health care provider(s). The plan should outline the student's needs and the specific interventions appropriate to meet those needs. The IHP is not meant to be a substitute for a Section 504 plan or IEP. Many of the issues addressed in an IHP should be considered when determining eligibility for and content of a Section 504 plan or IEP (see section XI for additional discussion on this topic).

The student's health care provider should submit the DMMP/health care provider order form to communicate the needed diabetes care in the school setting. See [Appendix C](#) for the Maryland Diabetes Medical Management Plan/Health Care Provider Order Form. The IHP should include the student's routine and emergency medication as ordered by the student's health care provider as well as address the unique aspects of the individual student's school experience/activities. The IHP includes the nursing diagnoses and desired student outcomes. Desired outcomes to monitor and evaluate the IHP should include student safety, independence in managing their diabetes, and equal access to school-sponsored activities. The school nurse interventions and evaluation of student outcomes should be documented. The plan should include processes for diabetes care during field trips and school-sponsored events and during times when a school nurse and/or other school health services staff is not available. The plan should also

identify unlicensed school staff trained to provide specified diabetes care tasks as prescribed in the student’s DMMP/health care provider orders. The decision to train unlicensed school staff and the specific staff member (s) trained is based on the school nurse’s judgment.

The school nurse should review the IHP at least annually and update as needed. The following information gathered from the nursing assessment should be considered when developing IHPs for students with diabetes:

- Compliance with expected behavioral aspects of management plan;
- Challenges to participation in care during school;
- Developmental factors that facilitate or impede management;
- Existing or potential barriers to best practice management (e.g., compliance, developmental, or behavioral issues);
- Parent/guardian concerns and expectations;
- Student concerns;
- Classroom, bus, and cafeteria accommodations (See section on [education planning](#));
- The plan to alert and train school staff regarding student’s diabetes and expected role in implementation of emergency plan (as appropriate if trained) when the school nurse/school health services staff is not available;
- The student’s schedule and activities (e.g., physical education, lunch, recess, transportation to/from school, school-sponsored activities and events (including field trips and after school activities) to ensure student needs are met if school personnel need to be available to administer insulin during the school day and during other school-sponsored events and activities;
- Knowledge of student’s diabetes by appropriate school staff, including substitutes;
- Recommended accommodations to communicate to the Section 504 plan team based on nursing assessment and the student’s DMMP/health care provider orders;
- Medication administration, including:
  - Student’s ability to self-manage;
  - Need to delegate medication administration to a CMT;
  - Need to train designated unlicensed school staff (based on nursing judgment and in accordance with the Maryland Nurse Practice Act) to administer medication according to student’s DMMP/health care provider orders;



- Student's ability to recognize and communicate to designated school staff when experiencing symptoms of hyperglycemia/hypoglycemia;
- Storage of the medication and/or equipment including light and temperature exposure prevention precautions;
- Storage and plan for access to snacks and fast-acting glucose;
- Needs for immediate access to emergency medication (e.g., emergency plan); and
- Student's understanding and demonstration of medication administration technique.

A copy of the nurse's final IHP should be placed in the student's health record, shared with the parents/guardian, and may be shared with the student's health care provider with parent/guardian consent.

## **EMERGENCY PLANS/PROTOCOLS**

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Based on the nursing assessment and the DMMP/health care provider orders, the school nurse should develop an emergency plan for students with diabetes. The plan should communicate how to recognize and treat hypoglycemia/hyperglycemia. The plan should ensure glucagon and/or fast-acting sugar is immediately accessible to all designated school personnel and the emergency protocol to be followed in the event of severe hypoglycemia (e.g., fast-acting sugar and/or glucagon administration). In addition, a plan should be developed to address hyperglycemia and pump/equipment failure issues. The emergency plan should include, but not be limited to:

- Health care provider's emergency orders/specific emergency interventions needed;
- Emergency contact information that is updated as changes occur;
- The plan to address hypoglycemia in the classroom;
- Signs and symptoms for which emergency care may be needed;
- Procedures for classroom teachers and other school staff to contact the school nurse or other school health services staff in an emergency;
- Who and when to call 911 according to medical orders and local school system policy;
- How glucagon and fast acting sugar will be stored to allow immediate availability to students and staff for those students who do not possess and/or self-administer their medication;
- A plan for an adult to accompany a student to the health suite as appropriate when necessary;
- The protocol for how school staff should contact the school nurse in an emergency; and

- A list of school staff designated and trained to administer glucagon.

To facilitate immediate access to fast-acting glucose and glucagon to treat hypoglycemia and the need to respond quickly to hyperglycemia, the school nurse should consider the following when developing an emergency plan:

- Size and layout of the school building;
- Health services staffing model;
- Plan for having snacks, fast acting sugar located at multiple sites within the building;
- Plan for having beverages located at multiple sites within the building for hypoglycemia (sugared) or hyperglycemia (water or low calorie);
- Plan for immediate access to glucagon;
- Plan for students who self-manage to securely self-carry emergency supplies for immediate access (e.g., a fanny pack);
- Procedures for notifying the nurse of symptoms; and
- Availability of trained designated unlicensed school staff to administer fast-acting glucose and/or glucagon when a nurse is not available.

Emergency plans should also include plans for disaster preparedness in the event of situations such as lockdown, sheltering in-place and evacuation.<sup>19</sup> Refer to the Maryland State School Health Services Guideline [\*“Guideline for Emergency Planning for School Nurses.”\*](#) The plan should make provision for diabetes management medications and supplies needed during a disaster or emergency.

The school nurse should provide a copy of the emergency plan to the parent/guardian and appropriate school staff who have direct contact with the student (including bus drivers), and place a copy in the student's health record. Providing a copy of the plan to school staff should be in a manner determined by the school nurse to allow immediate access while also protecting the student's confidentiality.

## **DELEGATION OF NURSING TASKS RELATED TO DIABETES MANAGEMENT**

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The registered nurse is always the leader of the school health services team. See the guideline entitled [\*“Role of the School Health Services Staff in Schools.”\*](#) The Maryland Nurse Practice Act (Annotated Code of Maryland, Health Occupations Article, Title 8) and regulations (COMAR, Title 10, Subtitle 27) allows certain nursing functions to be delegated. Delegation is “the act of authorizing an unlicensed individual, a certified nursing assistant, or a medication technician to perform acts of registered nursing or licensed practical nursing.”<sup>20</sup> For the purposes of this Guideline, the term “delegation” is used to describe authorizing nursing tasks to be performed by

a CMT and/or CNA as a routine part of their job, and the term “trained” is used to describe the provision of instruction and direction to authorize tasks to be performed by an unlicensed school staff who does not routinely perform the task(s). The decision as to whether the student's health care needs may be met by delegation to other school health services staff (e.g., CMT, CNA) or by training an unlicensed individual (e.g., teacher, coach, other school staff) is made using the criteria for delegation outlined in the Maryland Nurse Practice Act, all applicable regulations, and the **registered nurse's professional judgment**.

When a school nurse is not available to provide the care needed by students with diabetes or other special health care needs (either during the day, on field trips or during after-school or other school sponsored activities), [COMAR 13A.05.05.08](#) and this Guideline, as required under Annotated Code of Maryland, Education Article § 7-426.4, require the principal and the school health services staff person to identify school staff to receive training to provide needed services to students with special health needs (including diabetes).<sup>21</sup> Trained unlicensed school staff may include, but are not limited to: teachers, school administrators, coaches and athletic trainers. The decision to include trained school staff to perform certain diabetes care tasks is based on the nursing assessment of student needs/care required as specified in the student's DMMP/health care provider orders, and nursing judgment as to whether the care may be provided in a safe manner by trained school staff. Diabetes care provided by trained school staff should be provided according to the student's DMMP/health care provider orders, IHP and local school system policy.

The school nurse (who must be an RN) will determine the appropriate person (e.g., a delegate such as a CMT and/or CNA or trained unlicensed school staff) to whom responsibility for performing and supervising blood glucose monitoring, insulin administration, administration of glucagon in an emergency, and any other treatments/medications may be delegated. The school nurse will also evaluate and determine whether a student is able to self-administer medication or do blood glucose monitoring in the classroom. This determination is made based on the nursing assessment of each student, and with input from the authorized prescriber and the parent/guardian.

Unlicensed school staff may be trained to administer insulin or support self-management of other diabetes care tasks (e.g., blood glucose monitoring, insulin administration). These staff are not required to become a CMT if they are not administering medications as a routine part of their job duties. The school nurse determines if it is appropriate to train unlicensed school staff to provide diabetes care. This decision is based on nursing judgment on a case-by-case basis with the student's health and safety as the primary concern. The acts of delegation to a CMT and/or CNA or training a school staff to administer insulin is not prohibited in the Maryland Nurse Practice Act,<sup>22</sup> but both delegation and training must be done in accordance with the Maryland Nurse Practice Act,<sup>23</sup> all applicable regulations, best practices and principles of delegation, and local school system policy. The registered nurse in a school setting (or any other setting) is not required to delegate or train an unlicensed person to perform a nursing task.<sup>24</sup> **However, in the absence of a delegation or training decision and plan, the school system is still accountable to ensure the student's needs are met to comply with both state and federal laws.** The school nurse should communicate the student's needs to the school health services coordinator or manager, and school administrator and work with the school administrator so appropriate plans may be made. It is the school's responsibility to be sure a school nurse, other school health services staff, or trained school staff is available to provide (or support the student's self-management) needed care as indicated in the DMMP/health care provider orders during the school day and during all school-sponsored

activities. Training school staff to provide diabetes care in an emergency (e.g., provision of fast-acting glucose or administration of glucagon) is also a task that may be delegated. The Maryland Nurse Practice Act allows nurses to instruct and provide direction to unlicensed persons who are not a CMT or CNA to administer emergency medications.<sup>11</sup> Specific training provided to each school staff is determined by the school nurse based on a case-by-case basis based on student need, nursing judgment and school staff member capability.

## SECTION V: MEALS AND SNACKS

Meal and snacks for students with diabetes are based on individual student needs. The school nurse should communicate with the on-site school food service manager to determine any necessary cafeteria procedures and mechanism to obtain carbohydrate content of school meals. The specific insulin regimen and carbohydrate counting are the most common method for balancing insulin needs with exercise and food intake. In general, there are no forbidden foods for students with diabetes. All students should be encouraged to eat healthily. The health care provider in conjunction with the student and family will develop an effective meal plan considering the scheduled school meal times and the student's overall needs. The plan for snacks should include any recommendations for snacks and appropriate placement of snacks based on student needs (e.g., the health suite, classrooms, with students, and in other areas of the school). Classroom teachers and other school staff should be aware of the importance of meal schedules and the need for snacks. Students should always be provided their meals and snacks according to their individualized meal plan and given adequate time to consume their meals or snacks. To avoid hypoglycemia, it is important that meals and snacks not be delayed.

When planning meals and snacks for students with diabetes, the school nurse should know whether the student will bring lunch or purchase at school and assess the student's level of understanding and independence with meal choices. Students who obtain school meals as part of any United States Department of Agriculture (USDA) school meal program (i.e., school breakfast program or school lunch program) are entitled to meal modifications because of their special health need. In order to plan for meal/food accommodations, the following information is required for both free and reduced priced meals as well as full price meals. USDA regulations 7 C.F.R. Part 15b requires substitutions or modifications in school meals for children whose disability restricts their diet. A child with a disability or special health need must be provided food substitutions when a statement signed by a licensed health care provider supports the need. The health care provider must provide a statement of the following information on a form provided by the local school system:

- The child's disability or special health need;
- An explanation of why the disability or health need restricts the child's diet;
- The major life activity affected by the disability or health need;
- The food or foods to be omitted from the child's diet; and
- The food or choice of foods that must be substituted.

## SECTION VI: PHYSICAL EDUCATION, EXERCISE, AND PHYSICAL ACTIVITY

Exercise and physical activity are important elements of diabetes management. Schools must offer students with diabetes equal access to physical education classes and team sports. Accommodations may be needed and should be specified in the student's Section 504 plan or IEP and/or emergency plan and be based on the student's DMMP/health care provider orders. Planning to respond to an emergency during physical education class or other physical activity should include a plan to provide immediate and easy access to fast acting glucose and for timely glucagon administration according to a student's emergency plan. Physical education teachers, coaches, and athletic trainers should be aware of the student's diabetes care needs, understand their role in implementing any needed accommodations, and understand their role in responding to an emergency according to the student's emergency plan. This may include supporting the student to carry and maintain their supplies and snacks on athletic fields or other physical activity locations (e.g., gymnasium) as necessary.

## SECTION VII: SCHOOL-SPONSORED ACTIVITIES AND FIELD TRIPS

According to Federal law, all students have the right to equal access to educational activities. No student may be denied participation in a field-trip or other school sponsored activities because of the need for medication/treatment or requirement of additional assistance.<sup>1,2</sup> This requirement applies to student attendance as a participant (e.g., member of a club or athletic team) and does not pertain to activities where the student is participating as an observer/spectator (e.g., attending an athletic event or theatrical performance). The [school has the responsibility](#) to provide appropriate staff to provide or support the needed diabetes care during school sponsored activities and events (including field trips and after school activities) based on the student's DMMP/health care provider orders and nursing assessment. The school nurse, a substitute nurse (e.g., another nurse who is not the usual school nurse), or trained school staff should be available during all school-sponsored activities to provide needed diabetes care based on the student's needs or support the care of students who self-manage their diabetes. When appropriate, based on the activity, parents should be given the opportunity to participate if they choose. However, **parents cannot be required to participate in/attend a school-sponsored activity, event, or field trip as a condition of the student's participation.**

The staff person in charge of a planned school-sponsored activity or event should give sufficient notice of the activity (as stated in local school system policy for field trip notification) to the school nurse so preparations can be made and a plan developed to ensure the needs of the student are met. It is the school's responsibility to arrange for an appropriate person to attend the activity, event or trip to meet the routine and emergency needs of students with diabetes. This may be a nurse, CMT/CNA or unlicensed school staff. The school nurse determines, in collaboration with the parent/guardian, diabetes care provider and school administrator, the most appropriate person to attend the school sponsored event to provide or support diabetes care based on a nursing assessment, the student's needs and nursing judgment. The school nurse is not required to train unlicensed school staff to provide diabetes care during school sponsored events when in the nurse's

judgment it is not safe to do so.<sup>24</sup> Unlicensed school staff cannot be required to be trained to provide diabetes care during school sponsored activities. In that case, the school nurse must work with the school administrator to make sure the student has safe and equal opportunity to participate in the activity.<sup>1, 2</sup>

The school nurse is responsible to communicate the needs of students with diabetes to the school staff in charge of the activity. The school nurse will provide a copy of the emergency plan for students with diabetes (including for those students who self-manage their diabetes) to school staff in charge of the school-sponsored activity prior to the activity. The school nurse should work with the family to be sure all the student's supplies, equipment, medications, and food are packed and taken on the field trip or easily and immediately available during other school sponsored activities. The school nurse should also be sure the school staff understands the emergency plan, how to implement the plan (including administration of emergency medications as ordered and trained to do so), and is aware of the most likely emergency needs of the specific student. Communication should be documented, be done in a manner to ensure the student's safety and should include both verbal and written communication.

Medications needed for diabetes should be administered to students during school-sponsored trips/activities as ordered in the student's DMMP/health care provider orders. Medications must be administered in compliance with the Maryland State School Health Services Guideline: "[\*Administration of Medication in Schools\*](#)" and according to the student's DMMP/health care provider orders. The school nurse, in collaboration with the school administrator, parent/guardian, and health care provider may recommend to the Section 504 plan team any accommodations needed during a field trip/school-sponsored activity.

## SECTION VIII: CARE COORDINATION

### CARE COORDINATION ROLES AND RESPONSIBILITIES

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Care coordination and collaboration between schools and health care providers and providing a safe learning environment is shown to improve A1C levels and the quality of life for students with diabetes.<sup>25</sup> The school nurse is always the leader of the school health services team (e.g., the leader in implementing and coordinating diabetes care in the school setting) regardless of the school health services program service delivery model. Diabetes care is provided according to the DMMP/health care provider orders and provided through a collaborative team based approach within each school. The school nurse makes decisions regarding how to implement the DMMP/health care provider orders and the members of the diabetes care team (e.g., who provides the care to students with diabetes) in the school setting.

Some students with diabetes may have a designated school case manager to coordinate his/her Section 504 plan or IEP. The Section 504 plan team or IEP team will designate the case manager who could be the school nurse. For students without a Section 504 plan or IEP, the school nurse serves as the case manager. The school nurse also serves as the liaison between the health care team, school staff, administration, pupil services staff, parents/guardians, food service staff, district dietician, and the student regardless of who is the designated case manager. The school nurse may

also refer the student and/or family for counseling, support groups, and medical care including referrals to school system staff to determine eligibility for a Section 504 plan or IEP.

Effective case management requires coordination between all persons involved in the care of the student. The school nurse is the lead in determining the most effective method(s) to implement the collaborative process for each student with diabetes. In addition, each team member has a set of responsibilities for the care of the student as indicated below.

### PARENT/GUARDIAN RESPONSIBILITIES

Parents/guardians are integral to planning, care, and coordination of care for all students with diabetes. School nurses should involve the student’s parent/guardian to the fullest extent possible. It is important for school nurses and parents/guardians to work collaboratively to provide for the health and safety of these students. In addition, the Annotated Code of Maryland, Education Article, § 7-426 designates parents/guardians with certain responsibilities. Parents/guardians are responsible to:

- Inform the school nurse or other school health services staff that their student has diabetes;
- Provide the school with emergency contact information that is accurate and updated as needed;
- Provide the school with complete, accurate, and up-to-date medical information related to the student’s diabetes;
- Provide the appropriately completed written diabetes medical management plan/health care provider order form;
- Communicate with the school nurse and the health care provider regarding medication orders allowed to be adjusted within the specified parameters in the manner requested by the school nurse;
- Provide timely communication to the school nurse regarding any changes in insulin pump settings;
- Provide written authorization for sharing of information between the school and the student’s diabetes care provider;
- Provide any other health care provider orders;
- Supply non-expired routine and emergency medications and medication administration and dosing devices/equipment as needed throughout the school year;
- Supply non-expired routine and emergency medications and medication administration devices/equipment for long term care (up to 72 hours in the event of a disaster or emergency) including:

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- Insulin and insulin administration supplies;
  - Blood glucose meter, test strips, lancets;
  - Urine/blood ketone test strips;
  - Glucagon kit;
  - Batteries for meter and pump if applicable;
  - Pump and pump supplies if appropriate;
  - Fast acting sugar (and any needed measuring/dosing devices) as ordered by the health care provider; and
  - Any other needed supplies to provide care according to provider orders;
- Perform blood glucose monitor control testing or provide control solution to the school;
  - Provide appropriate snacks and beverages (including a refillable water bottle if possible) for during school and for after-school time as needed;
  - Provide the school and the school nurse with up-to-date and timely information regarding the student’s participation in school sponsored after-school activities (e.g., clubs, sports, academic supports/tutoring, make-up work) to allow a reasonable amount of time to arrange staffing for addressing the student’s diabetes care needs;
  - Work with the school team (e.g., school nurse, Section 504 team) to develop the plan of care and the 504 plan to the best of their ability;
  - Work with the school nurse to develop and implement a plan for increased diabetes care self-management, as appropriate, in collaboration with the student’s health care provider;
  - Monitor the proper storage (i.e., away from light and high temperatures) and routinely check the expiration dates of medications for students who self-carry;
  - Provide the school nurse user manuals for any diabetes care devices and equipment if requested; and
  - Provide the recommended and preferred medical identification bracelet/necklace indicating student has diabetes.

### **STUDENT RESPONSIBILITIES**

Coordinating and managing the care of students with a diagnosis of diabetes requires the school nurse to communicate to the student their role in the planning process. Student participation in planning must be developmentally appropriate. Student responsibilities must also be developmentally appropriate and may include, but are not limited to:

- Provide accurate, timely and up-to-date information regarding after-school activities to allow a reasonable amount of time to plan for staffing to meet the student’s diabetes care needs;



- Follow diabetes management plan/IHP;
- Communicate with the school nurse or other designated school staff regarding symptoms of hypoglycemia or hyperglycemia and other illnesses which may impact diabetes management;
- Communicate accurate information regarding carbohydrate intake;
- Act responsibly when possessing and self-administering medications, specifically, not to misuse medication;
- Dispose of sharps appropriately; use standard precautions as instructed by the school nurse;
- Collaborate with the school nurse, parent/guardian and health care provider in care planning (as capable to do so);
- Provide timely communication to the school nurse regarding changes in pump settings; and
- Provide self-management or participate in learning self-management.

### SCHOOL RESPONSIBILITIES

The Annotated Code of Maryland, Education Article, § 7-426 specifies certain school and school administrator responsibilities for the emergency care of students with diabetes. This is in addition to other legal obligations placed on school officials under state and federal law. School administrators should work closely with school nurses and other school staff to plan and coordinate the care for these students. The school administrator and school nurse collaborate to gather, maintain, and review school-wide information required to meet the student's needs.

Each jurisdiction should have a plan for what to do in the event a parent/guardian does not provide diabetes medications and supplies.

The school should provide the following:

- Sharps container(s);
- Appropriate storage for insulin and syringes;
- Access to medication, blood glucose monitoring and ketone testing equipment, and snacks;
- Meal and snack accommodations (if applicable) in compliance with USDA requirements;
- Adequate staffing to administer insulin and glucagon according to the student's diabetes management plan, individualized health plan, and emergency plan; and

- Appropriate staff to provide or support the needed diabetes care during school sponsored events and field trips based on the student’s DMMP/health care provider orders and nursing assessment.

### **SCHOOL ADMINISTRATOR RESPONSIBILITIES**

School administrators must be aware of students with a diagnosis of diabetes, and should work with the school nurse to support the implementation of a team approach to the health care needs of all students including those with diabetes. To that end, school nurses should provide aggregate data to the school administrator on the number of students with diabetes in the student population, and any needed accommodations. For students with a Section 504 plan or IEP, necessary accommodations are determined by the Section 504 or IEP team based on a variety of factors, including but not limited to the school nurse assessment findings and recommendations, the student’s DMMP/health care provider orders, and input from the parent/guardian and the student as appropriate. Administrators are responsible for ensuring that schools follow the law regarding Section 504 plans and IEPs.

School administrator responsibilities are to:

- Support the school nurse as the leader of the school health services team;
- Ensure the education and safety of the student;
- Review data provided by the school nurse regarding students with diabetes and needed accommodations;
- Support the school nurse’s training, outreach, education, and awareness activities, which include, but are not limited to:
  - Training school staff (e.g., coaches, teachers, cafeteria workers, bus drivers) to recognize signs and symptoms of hyperglycemia and hypoglycemia, to use emergency medications as indicated in students’ emergency plan according to local policy;
  - Planning for implementation of student DMMP/health care provider orders, IHP and emergency plans during school sponsored events;
  - Providing outreach and education for parents/guardians, other caregivers, and the general school community;
  - Ensuring classroom teachers, including substitute teachers, have access to emergency plans;
  - Making routine medications and testing equipment as accessible as possible to minimize disruption to education and avoid treatment delay; and
  - Making emergency medications, fast acting carbohydrates, and water as accessible as possible to avoid treatment delay;
  - Supporting the school nurse’s efforts to promote adherence to the parent/guardian and student responsibilities;

- Support the school nurse’s recommendations regarding school health services staffing necessary to administer insulin and glucagon according to the student’s DMMP/health care provider orders, IHP, and emergency plan;
- Support the school nurse’s decision to identify and train appropriate school staff on the school system policy to ensure trained school staff is available to respond in an emergency including administration of emergency medications;
- Support the school nurse’s decision to identify and train appropriate school staff on the school system policy and applicable federal and state laws and regulations to ensure trained school staff is available to assist in the implementation of the student’s IHPs when needed and when appropriate as determined by the school nurse;
- Support implementation of the student’s Section 504 plan, IEP or other written accommodation plan and other state or federal laws related to needed accommodations; and
- Support the participation of students with diabetes on field trips, during after-school activities, and other school sponsored events by providing needed diabetes management care in accordance with the student’s DMMP/health care provider orders, IHP, Section 504 plan or IEP (if applicable), and emergency plan in accordance with applicable law, state and federal statutes, regulations and policy.

## **SECTION IX: SCHOOL STAFF AWARENESS, EDUCATION, TRAINING, AND RESPONSIBILITIES**

### **SCHOOL STAFF AWARENESS AND EDUCATION**

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School-wide awareness and education regarding diabetes for school staff is necessary to manage diabetes in the school setting. Awareness and education may include, but is not limited to:

- Definition of diabetes including types of diabetes;
- Effective diabetes management principles;
- Types of accommodations common during school or school activities;
- Symptoms to report to the school nurse (i.e., symptoms of hypoglycemia/hyperglycemia);
- Confidentiality protections;
- Disability awareness needed in classroom;
- Review of the school emergency plan/protocol;

- Maintenance of emergency plans/protocols with information provided to staffing substitutes, (e.g., classroom, school health, transportation, and food services staff);
- Medication information related to storage, access, locations, and administration technique; and
- Education for school visitors or volunteers with student contact, as needed per local policy.

School staff awareness and education should be done annually and whenever a student's condition and care needs change.

## SCHOOL STAFF TRAINING

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The school nurse, substitute nurse (e.g., another nurse who is not the usual school nurse), other school health services staff, or trained school staff should be available during the school day and at all school sponsored activities to provide needed diabetes care or to support students who self-manage their diabetes. The school nurse should provide training on blood glucose monitoring, insulin and glucagon administration and other diabetes care as prescribed by the student's DMMP/health care provider orders to appropriate school staff when based on nursing judgment it is safe to do so. Appropriate school staff may include CMT and/or CNA, teachers, school principals, coaches and athletic trainers. In addition to providing school-wide awareness and education, the school nurse should apprise all appropriate school staff who have responsibility during the day for a student with diabetes of the student's emergency plan and the daily care needed by the student. The school nurse, the school administrator and the school staff will also determine who will be designated to perform, or support the student to perform, diabetes care tasks when a school nurse is not available. **A school administrator cannot require a teacher to perform diabetes care tasks by virtue of the student's placement in that teacher's class.** Training for unlicensed school staff to provide or support diabetes care should be done at least annually, whenever needed, and when a student's condition changes. Training should be done according to the student's DMMP/health care provider orders and in accordance with the Maryland Nurse Practice Act.<sup>26</sup>

The local school health services program, in consultation with the local school system, should determine who will be trained at each school site to provide or support diabetes care and keep records of initial and subsequent training that takes place. Consideration must be given to expected turnover or transfer of staff. The school nurse should train, monitor, and evaluate the competency of the individuals designated to administer glucagon to ensure they are fully capable of carrying out the task. School systems may be obligated to conduct additional training on Section 504, IDEIA, and other related legal obligations beyond the requirements described below.

Training for school staff on diabetes care must be consistent with the requirements of Annotated Code of Maryland, Education Article, § 7-426.4. Training content should include, but is not limited to:

- Definition of diabetes;
- Recognition of symptoms of hypoglycemia and hyperglycemia and the appropriate actions to take including procedures to report observations to the school nurse;
- Implementation of student’s emergency plan and school emergency protocols including administration of fast acting glucose and/or glucagon when trained to do so;
- Implementation of student’s Section 504 plan including bus accommodations;
- Implementation of school staff responsibilities;
- Procedures to support students who self-manage their diabetes;
- Confidentiality requirements; and
- Implementation and communication of student diabetes needs within substitute plans (teacher, school health staff, transportation, and food services).

Based on the registered nurse’s judgment, school staff may be trained to administer insulin or support self-management of other diabetes care tasks (e.g., blood glucose monitoring). The registered nurse determines this on a case-by-case basis with the student’s health and safety as the primary concern. The act of delegation and/or training school staff to administer insulin is not prohibited in the Maryland Nurse Practice Act (NPA),<sup>22</sup> but the delegation must be done in accordance with the NPA, applicable regulations, this Guideline, any other applicable regulations, best practices and principles of delegation, and local school system policy. The registered nurse in a school setting (or any other setting) is not required to delegate.<sup>24</sup> However, in the absence of a delegation decision and plan, the school system is still accountable to ensure the student’s needs are met to comply with both state and federal laws.

## **SCHOOL STAFF RESPONSIBILITIES**

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School staff with direct responsibility for students with diabetes should receive student specific education and training to support implementation of the student’s DMMP/health care provider orders. School staff are important members of the school team responsible for implementing a team based approach to school diabetes management. Each team member contributes to the management of students with diabetes in ways including, but not limited to those tasks listed in Table 7. Based on the needs of individual students, the school nurse may train and educate certain designated school staff to provide medications and/or fast acting carbohydrates according to the student’s IHP and/or emergency plan in certain situations. This should be done in accordance with the applicable statutes, policies and regulations. School nurses should train all school staff who contribute to the implementation of a student’s DMMP/health care provider orders. See Section VII for information related to training school staff to meet the responsibilities listed in Table 7. School staff cannot be required to provide or support diabetes related care.

Table 7

<b>RESPONSIBILITIES OF SELECT SCHOOL STAFF RELATED TO THE MANAGEMENT OF DIABETES IN SCHOOLS</b>	
<b>Bus Drivers</b>	Reading and understanding all pertinent health care information provided by the school nurse regarding a student’s diabetes and diabetes management; implement the student’s emergency plan as instructed and/or trained by the school nurse; communicate problems or concerns with the transportation office, school nurse and school administrator, and parent/guardian as instructed or trained.
<b>Coaches, Athletic Trainers, and Advisors for School Sponsored Activities</b>	Communicate to the school nurse students with diabetes as indicated on a pre-participation sports physical; understanding all pertinent health care information provided by the school nurse regarding a student’s diabetes and diabetes management; respond to an emergency during athletic or other activities as instructed and/or trained by the school nurse; communicate problems or concerns to the school nurse and school administrator as instructed or trained.
<b>School Registered Dietician and Food Services Personnel</b>	Reading and understanding all pertinent health care information provided by the school nurse regarding a student’s diabetes and diabetes management related to the student’s meal plan; make school nurse aware of menu choices; maintain accurate and up-to-date nutritional analysis and share this information with the school nurse, student (as appropriate) and parent/guardian to facilitate accurate carbohydrate counting.
<b>School Counselor</b>	Participate in disability awareness activities as necessary; assist with support groups/counseling as needed; assist with educational planning (e.g., Section 504 plan development and implementation).
<b>Pupil Personnel Worker</b>	Assist the school nurse to work with families to address transportation concerns, home teaching and attendance concerns.
<b>School Psychologist</b>	Assist student with psychological supports for coping, adjustment and any behavioral strategies to support diabetes management and self-management.
<b>Teachers (including substitute teachers)</b>	Reading and understanding all pertinent health care information provided by the school nurse regarding a student’s diabetes and diabetes management; maintain accurate substitute folder; review substitute folder; be aware of the classroom needs (e.g., routine care and emergency care) and Section 504 plans for students with diabetes; respond to an emergency as instructed and/or trained by the school nurse; communicate problems or concerns to school nurse, school administrator, and parent/guardian as instructed or trained.
<b>Trained School Staff</b>	Respond to an emergency as instructed and/or trained by the school nurse; support daily diabetes management for students who self-manage as instructed and/or trained by the school nurse; administer insulin according to a student’s DMMP/health care provider orders as trained by the school nurse when the nurse is not available and based on nursing judgment.

## SECTION X: DIABETES EDUCATION FOR STUDENTS WITH DIABETES

In addition to school-wide awareness and education, students with diabetes should receive individual student diabetes education as appropriate. This should be done in collaboration with parents/guardians and the student’s health care provider or a Certified Diabetes Educator working with the health care provider. Student education should be developmentally appropriate and encourage, and facilitate, self-management in school. Student diabetes education may include, but is not limited to:

- Understanding of their emergency plan including when and how to notify a school staff person when having symptoms of hyperglycemia/hypoglycemia;
- Monitoring blood glucose including the use of the CGM, if applicable;
- Counting carbohydrates;
- Calculating an insulin dose;
- Administering insulin, if self-managing;
- Self-carrying and using diabetes supplies, using snacks/fast acting glucose, and using insulin administration devices (e.g., pump, syringe and vial, or pen) appropriately; and
- Advocating for themselves and communicating regarding health needs.

School nurses should also provide resources to parents/guardians of students with diabetes. See the [resource list](#) at the end of the Guideline.

## SECTION XI: EDUCATION PLANNING

### INDIVIDUALIZED EDUCATION PROGRAMS (IEP), Section 504 PLANS AND OTHER ACCOMMODATIONS

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According to [Section 504 of the Rehabilitation Act of 1973](#), all students with disabilities who are eligible under Section 504 are entitled to have access to a free and appropriate public education (FAPE).<sup>2</sup> This entitles students to necessary accommodations for them to have an equal opportunity to safely participate in all school activities and school sponsored after school events and activities. No student may be denied participation in field trips and afterschool activities on the basis of their needs for diabetes management. In addition to classroom accommodations, policy and procedures must be in place to allow routine and emergency care to be provided to these students when a school nurse is not available. This may include hiring temporary school health staff for field trips and afterschool activities and/or training school staff to provide diabetes care if based on nursing judgment it is safe to do so. The school nurse should provide necessary training to school staff to implement any medically relevant sections of a student’s Section 504 plan.

The nursing assessment is part of the process to gather information needed to determine whether and what type of accommodations are needed for each individual student with diabetes. Necessary accommodations are determined by the Section 504/IEP team and based a variety of factors including but not limited to the school nurse assessment findings and recommendations, the student's DMMP/health care provider orders, and input from the parent/guardian and the student as appropriate. Accommodations for individual students should reflect the unique needs of individual students, be developmentally appropriate and school/activity specific. Having diabetes does not automatically qualify a student for a Section 504 plan. All students with diabetes are eligible, however, for a Section 504 team assessment to determine the need for a Section 504 plan. Following such assessment, many students with diabetes are determined by the Section 504 plan team to require a Section 504 plan. If a student with diabetes qualifies for special education services, an Individualized Education Program (IEP) may also include specific accommodations related to diabetes. The school nurse should work with the school administration to implement any medically relevant accommodations required as determined by the Section 504 plan team. As the student advances through the school system, his/her needs may change, therefore, accommodations and the Section 504 plan should be reviewed at least annually and updated as required by law and when the medical needs of the student change.

The following should be considered when developing a Section 504 plan or IEP for a student with diabetes to protect the health and safety of the student and to be sure the Section 504 plan or IEP meets the medical needs of the student with diabetes:

- Vocational assignment;
- Physical education;
- Field trip/school sponsored activities;
- Transportation to and from school;
- Methods/strategies to minimize lost instruction time or recess time because of nutritional and/or diabetes management accommodations;
- Extra and co-curricular activities; and
- Methods/strategies for students to use to obtain classwork missed due to time in the health suite for routine care or for care of hyper/hypoglycemia.

Examples of accommodations that should be considered by the Section 504 or IEP team for students with diabetes in accordance with the student's DMMP/health care provider orders and school nurse assessment, include, but are not limited to:

- Easy/immediate access to snacks (provided by parent/guardian) and water;
- Blood glucose monitoring in the classroom, other locations in the school, or other learning environments;



- Self-administration of insulin in the classroom, other locations in the school, or other learning environments;
- Training of school staff to administer medications (based on school nurse assessment and nursing judgment);
- Modification of procedures for academic testing (e.g., quizzes, exams, standardized testing);
- No penalty for absences or tardiness due to diabetes management activities or illness or issues that escalate to prolonged blood glucose levels outside of target range;
- Unrestricted use of the restroom; and
- Ability to visit the school nurse as needed.

This list is not exhaustive nor is it meant to suggest that these accommodations are required, or appropriate, for all students. Accommodations for any particular student will vary based on an individualized assessment that is specific to each student. This general summary does not constitute legal advice. School nurses should contact their local school health services coordinator and/or the student services team to ensure they comply with state and federal law, as well as school system policies in developing a Section 504 plan or IEP. See [Appendix D](#) for a Section 504 plan planning resource that contains a list of examples of accommodations that should be considered by the Section 504 or IEP team for students with diabetes in accordance with the DMMP/health care provider orders and nursing assessment.

## **SECTION XII: DIABETES ACTIVITIES MONITORING AND EVALUATION**

The school nurse should evaluate and monitor diabetes management activities in the school. The school nurse must assess the student's response to, and the effectiveness of, the emergency plan and/or IHP to meet the student's health and educational needs on an ongoing basis. Monitoring and evaluation may result in establishment or revision of emergency plans and/or IHPs. For students with a Section 504 plan or IEP, a school nurse may need to coordinate with a case manager or other school system officials to ensure proper implementation of those plans.

Evaluation and monitoring of diabetes management may include, but is not limited to:

- Orders reviewed with parents/guardians and health care provider annually and as necessary (e.g., medication or care needs changes);
- Documentation of medications and treatments given;
- Communication with the health care provider and family;

- Documentation of the specific school staff trained to provide or support routine diabetes management and/or respond in an emergency;
- Classroom observation;
- Monitoring classroom time missed;
- School absences; and
- Academic performance.

## SECTION XIII: LIABILITY PROTECTIONS

[Maryland Code Annotated, Education Article §4-106](#), and [Courts and Judicial Proceedings Article §5-518](#) provide certain protections from liability to school employees who act within the scope of their employment and without malice or gross negligence. These statutes also protect volunteers and school board members under certain circumstances. Other legal protections and defenses (such as the “Good Samaritan Law” in [Courts and Judicial Proceedings Article §5-603](#)) may also be available for qualified individuals. This information is not meant to constitute legal advice, and employees are advised to consult with their school system attorney concerning any specific questions or concerns.

[Maryland Code Annotated, Education Article §7-426.4\(d\)](#) states that “an individual who has received instruction to provide diabetes care services to students in accordance with these guidelines is not civilly liable for any act or omission in the course of providing diabetes care services to a student if: (i) the individual is acting in good faith while providing diabetes care services to a student who is in need of diabetes care services or to a student who the individual believes in good faith to be in need of diabetes care services; (ii) the diabetes care services are provided in a reasonably prudent manner; and (iii) the diabetes care services are provided to the student without fee or other compensation.” This does not affect, and may not be construed to affect, any immunities from civil liability or defenses established by any other provision of law to which an individual may be entitled.

## SECTION XIV: GLOSSARY, RESOURCES, REFERENCES, AND APPENDICES

### GLOSSARY

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**Americans with Disabilities Act of 1990, As Amended (ADA):** A federal law that protects people with disabilities from discrimination.

**Section 504 Plan:** An education plan developed by a school team for a student with a disability in accordance with Section 504 of the Rehabilitation Act of 1973 and 34 C.F.R. Part 104 that specifies services designed to meet the student's individual educational needs so the student can access a free and appropriate public education (FAPE).

**A1C:** The A1C (or glycated hemoglobin, glycosylated hemoglobin, hemoglobin A1C and HbA1c) test is a measure of what percentage of hemoglobin (the protein in red blood cells that carries oxygen) has glucose (sugar) attached. It is used to diagnose diabetes and track diabetes control. The A1C test result reflects the average blood sugar level for the past two to three months.

**Accommodations:** Individualized changes or adjustments in a school setting that provide a student with a disability equal opportunity to participate in school programs and activities.

**Authorized Prescriber:** A physician, nurse practitioner, certified midwife, podiatrist, physician's assistant or dentist, according to Annotated Code of Maryland, Health Occupations §12-101(b).

**Basal Insulin:** Long-acting or intermediate-acting insulin administered once or twice a day to control blood glucose levels overnight and between meals. Basal insulin may be used as part of an insulin plan combined with other types of insulin.

**Blood Glucose Level:** The amount of glucose in the blood.

**Blood Glucose Meter:** A small, portable device that measures how much glucose is in the blood. Meters measure the blood glucose with a test strip on which a sample of blood, usually from the finger prick, has been applied. The meter displays the blood glucose level on a display.

**Blood Glucose Monitoring:** The act of checking the amount of glucose in the blood.

**Bolus Insulin:** A dose of rapid acting or short acting insulin given to cover the carbohydrate in a meal or snack and to lower blood glucose levels that are above target.

**Blood Ketone Testing:** Use of a meter to test the blood for ketones (or ketone bodies).

**CAB's:** The acronym for "Circulation, Airway, and Breathing" used in the assessment of an ill individual by a health care provider or first responder.

**Carbohydrates or carbs:** One of the three sources of energy in food for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. Foods that contain carbohydrates raise blood glucose levels.

**Carbohydrate (Carb) Counting:** A popular meal planning approach for people with diabetes that involves calculating the number of grams of carbohydrate, or choices of carbohydrate, eaten at meals or snacks.

**Certified Medication Technician (CMT):** An individual who completes a 20-hour course in medication administration approved by the Maryland Board of Nursing and is certified by the Board.

**Co-curricular:** Those activities that take place outside the class, regardless of time, that are a requirement of the course, (e.g., chorus or band). The student must participate in these activities in order to take the course.

**Continuous Glucose Monitor:** A device that records interstitial glucose levels at regular intervals continuously throughout the day. The results are transmitted to an insulin pump or other monitor. The monitor alarms when the blood glucose level is too high or too low.

**Correction Factor:** The amount of insulin needed to lower blood glucose to the target level (also called insulin correction factor or insulin sensitivity factor).

**CPR:** The acronym for “Cardiopulmonary Resuscitation.” CPR is done in response to a circulation, airway, or breathing emergency in an attempt to maintain oxygenation to the brain and vital organs until normal body functions are restored or rescue personnel arrives.

**Delegation:** The act of authorizing an unlicensed individual, a certified nursing assistant, or a medication technician to perform acts of registered nursing or licensed practical nursing ([Code of Maryland Regulations 10.27.11.02 \(6\)](#)).

**Diabetic Ketoacidosis (DKA):** An emergency condition in which extremely high blood glucose levels, along with a severe lack of insulin, result in the breakdown of body fat for energy and an accumulation of ketones in the blood and urine.

**Diabetes Medical Management Plan (DMMP):** The Maryland health care provider order form that contains the instructions and medication orders provided by a student’s health care provider and indicates the health care services and medications needed by a student to treat the student’s diabetes at school.

**Emergency Plan:** A document that specifies the actions needed to manage a student’s specific, medical condition in the event of a medical emergency.

**Family Educational Rights and Privacy Act (FERPA):** A Federal law that, with certain exceptions, prohibits schools from disclosing personally identifiable information in a student’s education record, unless the school obtains prior written consent from the student’s parent/guardian or from the eligible student (i.e., a student who is 18 years or older or who attends an institution of postsecondary education).

**Free and Appropriate Public Education (FAPE):** Education provided by public schools to students with disabilities designed to meet their individual needs to the same extent that the needs of nondisabled students are met. An appropriate education may include regular or special education and related aids and services to accommodate the unique needs of individuals with disabilities.

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

**Glucose:** A simple sugar found in the foods we eat that is needed to fuel the body. The body carries glucose through the blood to the cells where it is used for energy. In people with diabetes, glucose cannot enter the cells and be changed into energy due to lack of insulin or because the insulin the body produces, does not work properly.

**Glucose Tablets or Gel:** Special products that deliver a pre-measured amount of pure glucose. They are a quick-acting form of glucose used to counteract hypoglycemia.

**Glycogen:** The form of carbohydrate that is stored in the liver and muscles and released into the blood stream when energy is needed by the body.

**Honeymoon Phase:** A period after initial diagnosis of type 1 diabetes characterized by reduced insulin requirements and good glycemic control.

**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, headache and behavior changes. Severe hypoglycemia can lead to seizures and unconsciousness.

**Individualized Education Program (IEP):** A written document required under the Individuals with Disabilities Education Improvement Act for students with disabilities that outlines their need for special education and related services.

**Individualized Health Plan (IHP):** A type of nursing care plan developed by the school nurse utilizing data from a nursing appraisal/assessment that is specific to a student with a chronic health condition and designed to meet the student's unique health care needs.

**Individuals with Disabilities Education Act (IDEA):** A Federal law that provides funds to States to support special education and related services for children with disabilities, administered by the Office of Special Education Programs in the U.S. Department of Education. To be eligible for services under IDEA, a student's diabetes must impair his or her educational performance so that he or she requires special education and related services. IDEA also contains specific confidentiality protections for student records.

**Insulin:** A hormone made in the pancreas required for glucose to enter cells to be used as energy. Insulin is deficient or reduced in effectiveness in the cells of people with diabetes.

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

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

**Insulin Resistance:** A condition in which the cells in the body do not respond normally to the action of insulin. Many people with type 2 diabetes have insulin resistance.

**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.

**Lancet:** A small needle, inserted in a spring-loaded device, used to prick the skin and obtain a drop of blood for checking blood glucose levels.

**mg/dl (milligrams per deciliter):** A term used in blood glucose monitoring to describe how much glucose is in a specific amount of blood.

**Nurse Practice Act:** A statute enacted by the legislature of any state or by the appropriate officers of the district that delineates the legal scope of the practice of nursing within the geographical boundaries of the jurisdiction. The Maryland Nurse Practice Act is codified in the Annotated Code of Maryland, Health Occupations Article, Title 8. The accompanying regulations are found in the Code of Maryland Regulations Title 10, Subtitle 27.

**Nursing Appraisal:** The process by which a designated school health services professional identifies health problems that may interfere with learning. These may include health observations, interviews, and conferences with parents/guardians, students, educators, and other health professionals.

**Nursing Assessment:** The act of gathering and identifying data that assists the nurse, the client, and the client's family to identify the client's health concerns and needs. (Nurse Practice Act, Annotated Code of Maryland, Health Occupations Article, Title 8; COMAR Title 10, Subtitle 27.)

**Pancreas:** The organ behind the lower part of the stomach that makes insulin.

**School Nurse:** A registered nurse currently licensed by the Maryland Board of Nursing who works in a school setting.

**School-Sponsored Events and Activities:** Academic and non-academic school programs and activities that receive federal financial assistance, including federal funds (see [34 C.F.R. part 104](#)) and therefore subject to Section 504 of the Rehabilitation Act of 1973. These activities are those the student attends as a participant and not those attended as an observer.

**Self-Administration:** The application or consumption of medication by an individual in a manner directed by the health practitioner without additional assistance or direction.

**Self-Carry:** The possession of a medication on an individual’s person to allow quick access to and administration of the medication and to allow self-administration when specified.

**Target or Target Range:** The ideal range of blood glucose levels as determined by people with diabetes and their diabetes health care team.

**Test Strips:** Specially designed strips used in blood glucose meters to check blood glucose levels or in urine testing for ketones.

**Unlicensed School Staff:** Non-medical school staff who are not part of the school health services program and meet the definition of an “Unlicensed Individual” under Code of Maryland Regulations 10.27.11.02 (23). This may include, but is not limited to teachers, coaches, athletic trainers, administrators, and cafeteria workers.

**Urine Ketone Testing:** Measuring the level of ketones in the urine using test strips.

## RESOURCES

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**Academy of Nutrition and Dietetics:** <http://www.eatright.org/>. The Academy of Nutrition and Dietetics is the world's largest organization of food and nutrition professionals and is committed to improving the nation's health and advancing the profession of dietetics through research, education and advocacy. Members offer preventive and medical nutrition therapy services in a variety of settings and use nutrition services to treat chronic conditions, illnesses or injuries. The Maryland Chapter <http://www.eatwellmd.org/> works to optimize the health and well-being of Marylanders through food and nutrition and to empower members to be Maryland's food and Nutrition leaders.

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

**American Association of Diabetes Educators (AADE):** <https://www.diabeteseducator.org/>. The AADE is a multidisciplinary organization of health professionals who provide diabetes care and education on diabetes in children and adolescents.

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

- School staff training information:

- “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?referrer=https://www.google.com/>

- Safe at School program:

- <http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/>

- Position Statement: Jackson CC, Albanese-O'Neill A, Butler KL, et al. Diabetes care in the school setting: a position statement of the American Diabetes Association. *Diabetes Care*. 2015;38(10):1958-63. Available at:  
<http://care.diabetesjournals.org/content/38/10/1958.full?patientinform-links=yes&legid=diacare;38/10/1958%20-%20xref-ref-1-1>.

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



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

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

**Federal education laws that may pertain to students with diabetes:**

- Individuals with Disabilities Education Act:  
<http://idea.ed.gov/part-c/downloads/IDEA-Statute.pdf>
- Rehabilitation Act of 1973  
<http://www2.ed.gov/about/offices/list/ocr/504faq.html>

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

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

**Maryland School Health Services Guidelines:** Annotated Code of Maryland, Education Article §7-401 requires the Maryland State Department of Education and the Maryland Department of Health to develop public standards and guidelines for school health services programs. These guidelines cover a range of topics related to provision of school health services.

<http://marylandpublicschools.org/about/Pages/DSFSS/SSSP/SHS/SHSGuidelines.aspx> **Maryland Code Annotated, Courts and Judicial Proceedings Article § 5-603.** Emergency medical care. [Md. Courts and Judicial Proceedings Code Ann. § 5-603](http://marylandpublicschools.org/about/Pages/DSFSS/SSSP/SHS/SHSGuidelines.aspx)

**National Association of School Nurses:** <https://www.nasn.org/>

- Diabetes Resources: <http://www.nasn.org/ToolsResources/DiabetesinChildren>
- Position Statement: Nursing Delegation to Unlicensed Assistive Personnel in the School Setting <http://www.nasn.org/Portals/0/positions/2014psdelegation.pdf>
- “Principles for Practice: Nursing Delegation to Unlicensed Assistive Personnel in the School Setting” by Nichole Bobo, MSN, RN  
[https://portal.nasn.org/members\\_online/members/viewitem.asp?item=S081&catalog=MAN&pn=1&af=NASN](https://portal.nasn.org/members_online/members/viewitem.asp?item=S081&catalog=MAN&pn=1&af=NASN)
- “Managing Diabetes at School: Tools for the School Nurse”  
[https://portal.nasn.org/members\\_online/members/viewitem.asp?item=S065&catalog=MAN&pn=1&af=NASN](https://portal.nasn.org/members_online/members/viewitem.asp?item=S065&catalog=MAN&pn=1&af=NASN)

**National Diabetes Education Program (NDEP):** [www.ndep.nih.gov](http://www.ndep.nih.gov). The NDEP is a federally sponsored program of NIH and CDC for diabetes prevention and improving diabetes treatment and outcomes for people with diabetes.

- “Helping the Student with Diabetes Succeed: A Guide for School Personnel”  
<https://www.niddk.nih.gov/health-information/health-communication-programs/ndep/health-care-professionals/school-guide/section3/Documents/NDEP-School-Guide-Full.pdf>

**National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK):** Conducts, supports, and coordinates research on diabetes and other serious diseases affecting health and provides important health information to the public. <http://www.niddk.nih.gov/>

**Office of Civil Rights (OCR):** <https://ed.gov/about/offices/list/ocr/aboutocr.html>

The OCR works to ensure equal access to education through vigorous enforcement of civil rights in schools in the USA.

- “Free Appropriate Public Education for Students With Disabilities: Requirements Under Section 504 of the Rehabilitation Act of 1973”  
<http://www2.ed.gov/about/offices/list/ocr/docs/edlite-FAPE504.html>.
- “Parent and Educator Resource Guide to Section 504 in Public Elementary and Secondary Schools”  
<https://www2.ed.gov/about/offices/list/ocr/docs/504-resource-guide-201612.pdf>

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

**Pediatric Education for Diabetes in Schools** (National Version), developed by the PADRE foundation in collaboration with NASN; [www.pedsonline.org](http://www.pedsonline.org)

**Specialized Health Needs Interagency Collaboration (SHNIC):** SHNIC is a community-based program housed at the Kennedy Krieger Institute that provides training and technical assistance to parents/guardians and personnel from schools and community service programs throughout Maryland. The SHNIC program has developed resources to assist school nurses to train school staff to provide certain diabetes care tasks. This information for school nurses is located at <https://www.kennedykrieger.org/community/community-programs/specialized-health-needs-interagency-collaboration/information-school-n>

**USDA, Food and Nutrition Services:** [Accommodating Children with Special Dietary Needs in the School Nutrition Programs: Guidance for School Food Service Staff.](http://www.usda.gov) <http://www.usda.gov>

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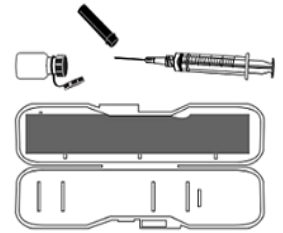
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**APPENDIX A**  
**Glucagon Administration Instructions**

## To prepare glucagon for injection:

1. Locate emergency kit.
2. Remove the flip-off top from the powdered glucagon vial.



3. Remove needle cover from the syringe filled with diluting fluid. Insert needle into the powdered glucagon vial. Push the needle plunger to inject the entire liquid solution into the powdered vial.



4. Without removing the needle from the vial, gently swirl or roll to mix the powder. The powder should completely dissolve and the solution should be clear and colorless.



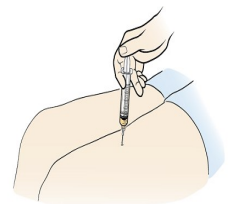
5. Hold vial upside down and draw up prescribed amount of medication into the syringe.



**Note:** If the dose given is to a child over 44 pounds, the entire solution (1mg) would usually be given. For a smaller child less than 44 pounds,  $\frac{1}{2}$  the solution would usually be used (0.5mg). Check orders to verify dose.

6. Withdraw needle from vial and hold syringe upright. Gently push up plunger to remove any excess air from syringe.
7. Cleanse injection site if alcohol swab available. Expose injection site. Insert needle and inject medication.

- ⇒ For subcutaneous injection only: Pinch skin/tissue and insert needle.
- ⇒ For intramuscular injection: Insert needle straight into tissue at a 90 degree angle.



8. Withdraw needle and apply light pressure at the injection site.
9. Dispose of sharps in container.
10. Turn child on their side.

**APPENDIX B**

**Sample Maryland Diabetes Self-Management Skills Assessment Checklist**

## Maryland Diabetes Self-Management Skills Assessment Checklist

Valid from \_\_\_/\_\_\_/\_\_\_ to \_\_\_/\_\_\_/\_\_\_ (not to exceed 12 months) or School Year \_\_\_\_\_

Knowledge of DMMP/Health Care Provider Order Form	Needs Assistance	Needs Supervision	Independent
Student verbalizes signs, symptoms, and treatment of HYPOGLYCEMIA: Low Blood Sugar: <input type="checkbox"/> Hungry <input type="checkbox"/> Weak/Shaky <input type="checkbox"/> Headache <input type="checkbox"/> Dizziness <input type="checkbox"/> Confusion Very Low Blood Sugar: <input type="checkbox"/> Nausea <input type="checkbox"/> Slurred speech <input type="checkbox"/> Clamminess <input type="checkbox"/> Blurred vision <input type="checkbox"/> Loss of concentration Student's Usual Signs/Symptoms of Low Blood Sugar: _____			
Student verbalizes signs, symptoms, and treatment of HYPERGLYCEMIA: High Blood Sugar: <input type="checkbox"/> Increased thirst <input type="checkbox"/> Increased urination <input type="checkbox"/> Tired/drowsy <input type="checkbox"/> Blurred vision <input type="checkbox"/> Warm, dry or flushed skin <input type="checkbox"/> Weakness/muscle aches Very High Blood Sugar: <input type="checkbox"/> Nausea/vomiting <input type="checkbox"/> Abdominal pain <input type="checkbox"/> Extreme thirst <input type="checkbox"/> Fruity breath odor Student's Usual Signs/Symptoms of Low Blood Sugar: _____			
Student identifies when and who to seek for assistance with diabetes management.			
Student identifies diabetes supplies needed at school and where they are stored.			
Skills: Blood Glucose Monitoring	Needs Assistance	Needs Supervision	Independent
Student demonstrates correct technique and understanding of blood glucose monitoring: <input type="checkbox"/> Washes hands <input type="checkbox"/> Verifies code of meter and matches test strip <input type="checkbox"/> Operates lancing device <input type="checkbox"/> Inserts test strip <input type="checkbox"/> Obtains blood sample <input type="checkbox"/> Records and communicates results <input type="checkbox"/> Interprets results			
Insulin administration: Method of Insulin Delivery: <input type="checkbox"/> Syringe <input type="checkbox"/> Pen <input type="checkbox"/> Pump <input type="checkbox"/> Carbohydrate Insulin Dose: One unit of insulin per _____ grams of carbohydrate <input type="checkbox"/> Calculates insulin to carbohydrate ratio per DMMP/Health Care Provider Order Form <input type="checkbox"/> Administers insulin at appropriate times <input type="checkbox"/> Can calculate the correction dose			



Skills: Insulin Administration	Needs Assistance	Needs Supervision	Independent
Insulin administration by SYRINGE: <ul style="list-style-type: none"> <li><input type="checkbox"/> Selects appropriate injection site</li> <li><input type="checkbox"/> Draws up correct dose in syringe</li> <li><input type="checkbox"/> Verifies insulin dose</li> <li><input type="checkbox"/> Injects insulin</li> <li><input type="checkbox"/> Disposes of sharps safely</li> <li><input type="checkbox"/> Records administration</li> </ul>			
Insulin administration by PEN: <ul style="list-style-type: none"> <li><input type="checkbox"/> Selects appropriate injection site</li> <li><input type="checkbox"/> Primes pen with insulin, if necessary</li> <li><input type="checkbox"/> Dials correct insulin dose</li> <li><input type="checkbox"/> Verifies insulin dose</li> <li><input type="checkbox"/> Injects insulin</li> <li><input type="checkbox"/> Disposes of sharps safely</li> <li><input type="checkbox"/> Records administration</li> </ul>			
Insulin administration by PUMP: <ul style="list-style-type: none"> <li><input type="checkbox"/> Demonstrates basic pump function and troubleshooting (how to give a bolus, suspend pump, check pump status, verify dose delivered, change batteries, check insulin reservoir, and identify and respond to alarms)</li> <li><input type="checkbox"/> Reports pump malfunctions to appropriate staff</li> <li><input type="checkbox"/> Ensures pump safety during physical activity</li> <li><input type="checkbox"/> Locates backup pump supplies, insulin, and syringe or pen in event of pump malfunction</li> <li><input type="checkbox"/> Demonstrates ability to use insulin syringe or pen in event of pump malfunction</li> <li><input type="checkbox"/> Records administration</li> </ul>			
Skills: Management of Hypoglycemia	Needs Assistance	Needs Supervision	Independent
Management of Low Blood Glucose (below _____ mg/dl) Treatment Plan: <ul style="list-style-type: none"> <li><input type="checkbox"/> Take 15 grams of fast-acting carbohydrates</li> <li><input type="checkbox"/> Retest blood glucose 10 – 15 minutes after treatment</li> <li><input type="checkbox"/> Repeat steps 1 and 2 until blood glucose is above _____ mg/dl</li> <li><input type="checkbox"/> Follow treatment with _____ grams of carbohydrate if more than one hour until next meal/snack or if going to physical activity</li> <li><input type="checkbox"/> Delay exercise if blood glucose is below _____ mg/dl</li> </ul>			

<b>Skills: Management of Hyperglycemia</b>	<b>Needs Assistance</b>	<b>Needs Supervision</b>	<b>Independent</b>
Management of High Blood Glucose (above _____ mg/dl) Treatment Plan: <ul style="list-style-type: none"> <li><input type="checkbox"/> Administer insulin correction dose determined by HCP's order for sliding scale</li> <li><input type="checkbox"/> Retest blood glucose in _____ hours if above ___206___ mg/dl</li> <li><input type="checkbox"/> Conduct ketone urine test if supplied by parent/guardian and ordered by HCP</li> <li><input type="checkbox"/> Conduct ketone blood test if supplied by parent/guardian and ordered by HCP</li> </ul>			
<b>Skills: Ketone Testing</b>	<b>Needs Assistance</b>	<b>Needs Supervision</b>	<b>Independent</b>
Student demonstrates technique for ketone testing and reporting of results: <ul style="list-style-type: none"> <li><input type="checkbox"/> Collects specimen (blood or urine)</li> <li><input type="checkbox"/> Uses test strip appropriately</li> <li><input type="checkbox"/> Records and communicates results</li> <li><input type="checkbox"/> Understands treatment/action according to DMMP/Health Care Provider Order Form</li> </ul>			
<b>Skills: Nutrition and Activity</b>	<b>Needs Assistance</b>	<b>Needs Supervision</b>	<b>Independent</b>
Student verbalizes healthy meal planning.			
Student identifies carbohydrate content of foods.			
Student adjusts foods based on blood glucose results and activity.			
Student verbalizes effects of exercise on insulin dose calculation.			
Student carries snack when engaged in physical activity.			
Student recognizes signs and symptoms of hypoglycemia and takes corrective action.			
Student recognizes signs and symptoms of hyperglycemia and takes corrective action.			
<b>Skills: Safety</b>	<b>Needs Assistance</b>	<b>Needs Supervision</b>	<b>Independent</b>
Student carries fast acting carbohydrate source for signs and symptoms of hypoglycemia.			
Student understands and practices universal precautions.			
Student able to carry diabetes supplies.			
Student does not share diabetes equipment.			
Student has access to emergency contacts.			
Student understands they are subject to periodic checks with nurse to ensure competency in self-management of diabetes care.			

**APPENDIX C**

**Maryland Diabetes Medical Management Plan/  
Health Care Provider Order Form and Form Guidance**

Demographics					
Student Name:	DOB:	Grade:	Diagnosis:		
Parent/Guardian:	Home Phone:	Work Phone:	Cell Phone:		
Insulin Orders					
<b>Insulin Dosing:</b>					
<input type="checkbox"/> Carbohydrate coverage	<input type="checkbox"/> Correction dose only	<input type="checkbox"/> Correction dose plus CHO coverage	<input type="checkbox"/> Fixed dose	<input type="checkbox"/> Fixed dose with correction scale	<input type="checkbox"/> See attached dosing scale
<b>Insulin(s):</b>					
<input type="checkbox"/> <b>Rapid Acting:</b> <input type="checkbox"/> Apidra <input type="checkbox"/> Humalog <input type="checkbox"/> Novolog <input type="checkbox"/> Admelog <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Any of the <b>rapid acting</b> insulins may be substituted for the others					
<input type="checkbox"/> <b>Long Acting</b> (if given at school): _____ Give _____ unit(s) of insulin Sub-Q at _____ (time)					
<b>Insulin Delivery:</b> <input type="checkbox"/> Pen <input type="checkbox"/> Syringe <input type="checkbox"/> Pump (make/model): _____					
<b>Carbohydrate (CHO) Coverage per meal:</b> <input type="checkbox"/> _____ unit(s) of insulin Sub-Q per _____ grams of CHO at breakfast					
<input type="checkbox"/> _____ unit(s) of insulin Sub-Q per _____ grams of CHO at lunch <input type="checkbox"/> _____ unit(s) of insulin Sub-Q per _____ grams of CHO at dinner					
<b>Carbohydrate Dose Adjustment Prior To Strenuous Exercise Within _____ Minutes:</b>					
<input type="checkbox"/> Use exercise/PE CHO ratio of _____ unit(s) of insulin per _____ grams of CHO at breakfast					
<input type="checkbox"/> Use exercise/PE CHO ratio of _____ unit(s) of insulin per _____ grams of CHO at lunch					
<input type="checkbox"/> Use exercise/PE CHO ratio of _____ unit(s) of insulin per _____ grams of CHO at dinner					
<b>Correction Dose:</b> <input type="checkbox"/> Give _____ unit(s) of insulin Sub-Q for every _____ mg/dl greater than BG of _____ mg/dl					
<input type="checkbox"/> If pre-breakfast BG less than _____ mg/dl, subtract _____ unit(s) of insulin dose <input type="checkbox"/> If pre-lunch BG less than _____ mg/dl, subtract _____ unit(s) of insulin dose <input type="checkbox"/> If pre-dinner BG less than _____ mg/dl, subtract _____ unit(s) of insulin dose					
<input type="checkbox"/> <b>Fixed Dose Insulin:</b> _____ unit(s) of insulin Sub-Q given before school meals					
<input type="checkbox"/> <b>Split Insulin Dose:</b>					
Give _____ unit(s) or _____% of meal insulin dose Sub-Q before meal and _____ unit(s) or _____% of meal insulin dose Sub-Q after meal					
<b>Snack Insulin Coverage:</b> <input type="checkbox"/> No snack coverage <input type="checkbox"/> Snack coverage if BG > _____ mg/dl					
<input type="checkbox"/> _____ unit(s) of insulin Sub-Q per _____ grams of CHO					
Insulin Dose Administration Principles				* See page 2 for Hyperglycemia management	
Insulin should be given:					
<input type="checkbox"/> Before meals <input type="checkbox"/> Before snacks <input type="checkbox"/> Other times (please specify): _____ <input type="checkbox"/> For correction if BG > _____ mg/dl and _____ hours since last dose/bolus <input type="checkbox"/> If CHO intake cannot be predetermined, insulin should be given no more than _____ minutes after start of meal/snack <input type="checkbox"/> If parent/guardian requests, insulin should be given no more than _____ minutes after start of meal/snack					
<input type="checkbox"/> Use pump or bolus device calculations per programmed settings, once settings have been verified					
<input type="checkbox"/> Parent/Guardian has permission to increase/decrease insulin correction dose by +/- one (1) unit to three (3) units					
Independent Insulin Administration Skills & Supervision Needs*				*Skills to be verified by school nurse	
<input type="checkbox"/> Insulin dose calculations		<input type="checkbox"/> Carbohydrate counting		<input type="checkbox"/> Measuring insulin	
<input type="checkbox"/> Independent <input type="checkbox"/> With Supervision		<input type="checkbox"/> Independent <input type="checkbox"/> With Supervision		<input type="checkbox"/> Independent <input type="checkbox"/> With Supervision	
<input type="checkbox"/> Independent <input type="checkbox"/> With Supervision		<input type="checkbox"/> Independent <input type="checkbox"/> With Supervision		<input type="checkbox"/> Independent <input type="checkbox"/> With Supervision	
Other Diabetes Medication					
Name of Medication	Time	Dosage	Route	Possible Side Effects	
Authorizations					
<b>HEALTH CARE PROVIDER AUTHORIZATION</b>			<b>PARENT/GUARDIAN AUTHORIZATION</b>		
I authorize the administration of the medications and student diabetes self-management as ordered above.			By signing below, I authorize:		
<b>Provider Name (PRINT):</b>			• The designated school personnel to administer the medication and treatment orders as prescribed above.		
			By signing below, I agree to:		
<b>Phone:</b>			• Provide the necessary diabetes management supplies and equipment; and		
			• Notify the nurse of any changes in my child's care or condition.		
<b>Provider Signature:</b>			<b>Parent/Guardian Signature:</b>	<b>Date:</b>	
<b>Date:</b>			<b>Parent/Guardian Signature:</b>	<b>Date:</b>	
<b>Acknowledged and received by:</b>			<b>School Nurse:</b>	<b>Date:</b>	

**Maryland Diabetes Medical Management Plan/ Health Care Provider Order Form**

Valid from: Start \_\_\_/\_\_\_/\_\_\_ to End \_\_\_/\_\_\_/\_\_\_ or for School Year \_\_\_\_\_

<b>Student Name:</b> _____		<b>DOB:</b> _____
<b>Blood Glucose Monitoring*</b>		*Self-management skills to be verified by school nurse
<b>Blood Glucose (BG) Monitoring:</b>		
<input type="checkbox"/> Before meals <input type="checkbox"/> Before PE/Activity <input type="checkbox"/> After PE/Activity <input type="checkbox"/> Prior to dismissal <input type="checkbox"/> Additional monitoring per parent/guardian request <input type="checkbox"/> For symptoms of hypo/hyperglycemia & anytime the student does not feel well <input type="checkbox"/> <b>Student may independently check BG*</b>		
<b>Continuous Glucose Monitoring</b>		
<input type="checkbox"/> Uses CGM     Make/Model: _____ <b>Alarms set for:</b> Low _____ mg/dl     High _____ mg/dl <input type="checkbox"/> If sensor falls out at school, notify parent/guardian		
<b>Hypoglycemia Management*</b>		*Self-management skills to be verified by school nurse
<b>Mild or Moderate Hypoglycemia (BG below _____ mg/dl)</b>		
<input type="checkbox"/> Provide quick-acting glucose product equal to 15 grams of carbohydrate (or glucose gel), if conscious & able to swallow. <input type="checkbox"/> Suspend pump for BG < _____ mg/dl and restart pump when BG > _____ mg/dl <input type="checkbox"/> Student should consume a meal or snack within _____ minutes after treating hypoglycemia <input type="checkbox"/> Other: _____		
<b>Always treat hypoglycemia before the administration of meal/snack insulin</b>		
<b>Repeat BG check 15 minutes after use of quick-acting glucose</b>		
<ul style="list-style-type: none"> <li>• If BG still low, re-treat with 15 grams quick-acting CHO as stated above</li> <li>• If BG in acceptable range and it is lunch or snack time, have student eat and cover meal CHO per orders</li> <li>• If CGM in use and BG ≥70 mg/dL and arrow going up, no need to recheck</li> </ul>		
<b>Student may self-manage mild or moderate hypoglycemia and notify the school nurse*:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Severe Hypoglycemia</b> (includes any of the following symptoms):		
<ul style="list-style-type: none"> <li>• Unconsciousness</li> <li>• Inability to swallow</li> <li>• Semi-consciousness</li> <li>• Seizing</li> <li>• Inability to control airway</li> <li>• Worsening of symptoms despite treatment/retreatment as above</li> </ul>		
<input type="checkbox"/> <b>GLUCAGON</b> injection: <input type="checkbox"/> 1 mg <input type="checkbox"/> 0.5 mg IM or Sub-Q		
<ul style="list-style-type: none"> <li>• Place student in the recovery position</li> <li>• Suspend pump, if applicable, and restart pump at BG &gt; _____ mg/dl</li> <li>• Call 911 and state glucagon was given for hypoglycemia; notify parent/guardian</li> </ul>		
<input type="checkbox"/> <b>If glucagon is not available or there is no response to glucagon, administer glucose gel inside cheek, even if unconscious or seizing. If glucose gel is administered, place student in recovery position.</b>		
<b>Hyperglycemia Management*</b>		*Self-management skills to be verified by school nurse
<b>If BG greater than _____ mg/dl, or when child complains of nausea, vomiting, and/or abdominal pain, check urine/blood for ketones.</b>		
If urine ketones are <b>trace to small</b> or blood ketones _____ mmol/L:		
<ul style="list-style-type: none"> <li>• Give _____ ounces of sugar-free fluid or water per hour as tolerated</li> <li>• Give insulin as listed in insulin orders <b>no more than every _____ hour(s)</b></li> </ul>		
If urine ketones are <b>moderate to large</b> or blood ketones greater than _____ mmol/L		
<ul style="list-style-type: none"> <li>• Give _____ ounces of sugar-free fluid or water per hour as tolerated</li> <li>• If student uses pump, disconnect pump</li> <li>• Give insulin as listed in insulin orders <b>no more than every _____ hour(s) by injection</b></li> </ul>		
<b>If large ketones and vomiting or large ketones and other signs of ketoacidosis, call 911. Notify parent/guardian.</b>		
Recheck BG and ketones _____ hours after administering insulin		
Contact parent/guardian for: <input type="checkbox"/> BG > _____ mg/dl <input type="checkbox"/> Ketones _____ mmol/L		
<b>Student may self-manage hyperglycemia with trace/small ketones and notify the school nurse*:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Ketone Coverage</b>		
<b>For ketones trace to small (urine)/&lt; _____ mmol/L (blood)</b> <b>For ketones moderate to large (urine)/&gt; _____ mmol/L (blood)</b>		
<input type="checkbox"/> Correction dose plus _____ unit(s) of insulin <input type="checkbox"/> Correction dose plus _____ unit(s) of insulin <input type="checkbox"/> _____ unit(s) of insulin <input type="checkbox"/> _____ unit(s) of insulin		
<b>Parent/Guardian Name:</b> _____	<b>Signature:</b> _____	<b>Date:</b> _____
<b>Provider Name:</b> _____	<b>Signature:</b> _____	<b>Date:</b> _____

<b>Acknowledged and received by:</b> _____	<b>School Nurse:</b> _____	<b>Date:</b> _____
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**Maryland Diabetes Medical Management Plan/ Health Care Provider Order Form**

Valid from: Start \_\_\_/\_\_\_/\_\_\_ to End \_\_\_/\_\_\_/\_\_\_ or for School Year \_\_\_\_\_

<b>Student Name:</b>		<b>DOB:</b>	
<b>Physical Education, Physical Activity, and Sports</b>			
<small>*Self-management skills to be verified by school nurse</small>			
<input type="checkbox"/> Avoid physical education/physical activity/sports if: <input type="checkbox"/> BG < ___ mg/dl <input type="checkbox"/> BG > ___ mg/dl <input type="checkbox"/> Trace/small ketones present <input type="checkbox"/> Moderate/large ketones present <input type="checkbox"/> If BG is ≤ _____ mg/dl, give 15 grams of CHO and return to physical education/physical activity/sports <input type="checkbox"/> May disconnect pump for physical education/physical activity/ sports <input type="checkbox"/> Student may set temporary basal rate for physical education/physical activity/sports* <input type="checkbox"/> Other:			
<b>Transportation</b>			
<small>*Self-management skills to be verified by school nurse</small>			
<input type="checkbox"/> Check BG prior to dismissal <input type="checkbox"/> If BG is not > _____ mg/dl, give _____ grams carbohydrate snack <input type="checkbox"/> BG must be > _____ mg/dl for bus ride/walk home <input type="checkbox"/> Only check BG if symptomatic prior to bus ride/walk home <input type="checkbox"/> Allow student to carry quick-acting glucose for consumption on bus, as needed for hypoglycemia* <input type="checkbox"/> Student must be transported home with parent/guardian if (specify): _____ <input type="checkbox"/> Other:			
<b>Disaster Plan (if needed for lockdown, 72 hr shelter in place)</b>			
<input type="checkbox"/> Continue to follow orders contained in this medical management plan <input type="checkbox"/> Additional insulin orders as follows: <input type="checkbox"/> Other:			
<b>Pump Management</b>			
Type of Pump:	Pump start date:	Child Lock: <input type="checkbox"/> On <input type="checkbox"/> Off	
Basal rates:      ___ unit(s)/hour    ___ AM/PM	___ unit(s)/hour    ___ AM/PM	___ unit(s)/hour    ___ AM/PM	___ unit(s)/hour    ___ AM/PM
___ unit(s)/hour    ___ AM/PM	___ unit(s)/hour    ___ AM/PM	___ unit(s)/hour    ___ AM/PM	___ unit(s)/hour    ___ AM/PM
Additional Hyperglycemia Management:			
<input type="checkbox"/> If BG > _____ mg/dl and has not decreased over _____ hours after bolus, consider infusion site change. Notify parent/guardian <input type="checkbox"/> For infusion site failure: <input type="checkbox"/> Give insulin via syringe or pen <input type="checkbox"/> Change infusion site <input type="checkbox"/> For suspected pump failure, suspend or remove pump and give insulin via syringe or pen <input type="checkbox"/> If BG > ___ mg/dl and <u>moderate to large</u> ketones, student should change infusion site and give correction dose by pen or syringe <input type="checkbox"/> Comments:			
<b>Independent Pump Management Skills and Supervision Needs*</b>			
<small>*Skills to be verified by school nurse. Supervision will be provided if not fully independent when appropriate</small>			
<b>Student is independent in the pump skills indicated below:</b>			
<input type="checkbox"/> Carbohydrate counting	<input type="checkbox"/> Bolus an insulin dose	<input type="checkbox"/> Set a basal rate/temporary basal rate	
<input type="checkbox"/> Reconnect pump at infusion set	<input type="checkbox"/> Prepare and insert infusion set	<input type="checkbox"/> Troubleshoot alarms and malfunctions	
<input type="checkbox"/> Give self-injection if needed	<input type="checkbox"/> Disconnect pump	<input type="checkbox"/> Other:	
<b>Additional Orders</b>			
<input type="checkbox"/> Please FAX copies of BG/insulin diabetes management records every _____ weeks (FAX number: _____ ) <input type="checkbox"/> Other orders:			
<b>Parent/Guardian Consent for Self-Management</b>			
<input type="checkbox"/> I acknowledge that my child <input type="checkbox"/> <b>is</b> <input type="checkbox"/> <b>is not</b> authorized to self-manage as indicated by my child's health care provider. <input type="checkbox"/> I understand the school nurse will work with my child to learn self-management skills he/she is not currently capable of or authorized to perform independently. <b>My child has my permission to independently perform the diabetes tasks listed below as indicated by my child's health care provider:</b> <input type="checkbox"/> Blood glucose monitoring <input type="checkbox"/> Insulin administration <input type="checkbox"/> Pump management <input type="checkbox"/> Carbohydrate counting <input type="checkbox"/> Insulin dose calculation <input type="checkbox"/> Other:			
<b>Parent/Guardian Name:</b>	<b>Signature:</b>	<b>Date:</b>	
<b>Provider Name:</b>	<b>Signature:</b>	<b>Date:</b>	
<b>Acknowledged and received by:</b>	<b>School Nurse:</b>	<b>Date:</b>	

Maryland Diabetes Medical Management Plan/Health Care Provider Order Form

**Guidance Document**

<b>Form Section</b>	<b>Guidance</b>
<p><b>Insulin Dosing</b></p> <p>Carbohydrate coverage</p> <p>Correction dose</p> <p>Fixed dose</p> <p>Fixed dose with sliding scale</p>	<p>Calculated to cover carbohydrate intake at meals or snacks.  <math display="block">\frac{\text{Grams of carbohydrate in meal}}{\text{Insulin to Carb Ratio}} = \text{units of insulin}</math></p> <p>Calculated to correct a high blood glucose level to a desired goal.                      Sample formula:  <math display="block">\frac{\text{Blood glucose} - \text{Target blood glucose}}{\text{Sensitivity factor}} = \text{units for correction}</math></p> <p>Set insulin dose at meals.</p> <p>Set insulin dose which is adjusted based on blood glucose levels.</p>
<p><b>Insulin Delivery</b> Insulin Pumps</p>	<p>It is always helpful to have quick access to the instruction manual or the quick reference guide for each pump. All pump manufacturers have websites with instruction manuals and online trainings.</p>
<p><b>Insulin Dose Administration Principles</b></p>	<p>Insulin dose calculation: round up or down to the nearest half or whole unit. May use clinical discretion: if physical activity follows, round down.</p>
<p><b>Insulin Dose Administration Principles</b></p>	<p>Insulin should be given before a meal. If the CHO intake cannot be determined before the meal, consult with the parents and provider to develop a plan that would work best for the student.</p>
<p><b>Target Blood Glucose Range</b></p>	<p>Suggested ranges per the American Diabetes Association for all pediatric patients with Type 1.</p> <ul style="list-style-type: none"> <li>• Before meals: 90-130 mg/dl</li> <li>• Bedtime/overnight: 90-150 mg/dl</li> </ul>
<p><b>Continuous Glucose Monitoring</b></p>	<p>Monitors glucose level from the interstitial tissue. Provides valuable information on trends in glucose levels, pre- and post-meal glucose levels and glucose changes during exercise. System involves a sensor, transmitter and a receiver. Interstitial reading lags behind blood glucose readings by 5 minutes. Medtronic and Dexcom are the primary CGM manufacturers and each has helpful websites.</p>
<p><b>Hypoglycemia</b></p>	<p>Examples of quick acting glucose sources (equal to approximately 15 grams CHO) include:</p> <ul style="list-style-type: none"> <li>- 4 ounces of fruit juice</li> <li>- 4-6 ounces of regular soda</li> <li>- 3-4 glucose tablets</li> <li>- 2-3 rolls of smarties</li> </ul>

	<ul style="list-style-type: none"> <li>- 10 sweet tarts</li> <li>- 15 regular jelly beans</li> <li>- 3 teaspoons of cake decorating gel (fat free)</li> <li>- 1 Tablespoon of table sugar</li> <li>- 4-5 packets of table sugar</li> </ul> <p>Some students, especially younger students on insulin pumps, may need less amounts of quick acting glucose to correct a low BG. Parent may provide a chart with quick acting glucose amounts for BG less than target, per provider permission.</p>
<b>Hypoglycemia</b>	Emergency injectable hormone that raises blood glucose levels within 5-15 minutes; dosing based on weight.
<b>Glucagon</b>	
<b>Hyperglycemia</b>	Refer to the Hyperglycemia algorithm in the MSDE/MDH Management of Diabetes in Schools. Encourage sugar free fluids per DMMP. Ketone monitoring is imperative in managing hyperglycemia. Ketones are released with a lack of insulin; untreated hyperglycemia can lead to elevated blood and urine ketone levels.
<b>Physical Education, Physical Activity, Sports</b>	Students on insulin pumps may have options in preparing for physical activity. For example; suspending the pump, modifying the basal rate, and disconnecting the pump.

**References:**

American Diabetes Association. Children and adolescents, Sec 11. In Standards of Medical Care in Diabetes – 2016. Diabetes Care 2016; 39(Suppl. 1): S86-93.

Maryland State School Health Services Guideline, Management of Diabetes in Schools, 2016.

Helping Administer to the Needs of Students with Diabetes in School, Training Program for School Nurses, 2014.



**APPENDIX D**

**Section 504 Plan and IEP Parent and Educator Brochure**

## Classwork and Testing

- Student may take breaks to use the water fountain or bathroom, check blood glucose, or treat hypoglycemia/hyperglycemia during a test or other activity. The student will be given extra time to finish the test or other activity, without penalty.
- Student shall be given instruction to help him/her make up any classroom assignment missed due to diabetes care, without penalty.
- Student shall not be penalized for absences required for medical appointments and/or illness related to diabetes.
- Teacher will repeat directions and check for understanding when student was out of the room for medical purposes.
- Teacher will give extra time to complete tasks if necessary.
- Student must be allowed time to monitor blood glucose before standardized testing.

## Social/Emotional Support

- School personnel should be aware of the student's feelings about having diabetes and identify ways to ensure the student is treated the same as other students.
- Student should be given the opportunity to discuss diabetes management with peers, if desired.
- Privacy should be provided when student performs diabetes care including blood glucose testing, insulin administration, etc.

## Extracurricular and School Sponsored Activities

- Student shall have unrestricted access to participate in all extracurricular activities (e.g., sports, clubs, and enrichment programs) and school sponsored activities including field trips. Advanced planning may be required.
- All accommodations and modifications will be met, including necessary supervision by identified school personnel as determined by the School Nurse (RN). The student's parent/guardian will not be required to accompany the student on field trips or any other school sponsored activity in which the student attends as a participant.
- The School Nurse (RN) will create and communicate a plan to ensure student's diabetes care is safely managed at any school sponsored activity or field trip.



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## Section 504 Plan and Individualized Education Program (IEP) Considerations for a Student with Diabetes

FOR PARENTS AND EDUCATORS



Parents and educators working **TOGETHER** can **BEST** support a student's success!

Students with diabetes should be individually assessed for eligibility for services under Section 504 of the Rehabilitation Act of 1973 or the Individuals with Disabilities Education Act. If a student is eligible, an appropriate Section 504 Plan or Individualized Education Program (IEP) should be developed by the school team, with input from the parent or guardian and school nurse.

This brochure contains lists of sample accommodations to be considered by the school team. Individual students with diabetes have different needs, but their education plans are likely to address these common elements. The accommodations are not necessarily appropriate for all students; accommodations for each student will vary because plans must be individualized. Considerations in this brochure are applicable to both Section 504 Plans and IEPs. Students with a pre-existing IEP would have accommodations added to their IEP as they are not eligible for both a Section 504 Plan and an IEP.

A **Section 504 plan** is meant to protect eligible students with a disability from discrimination by providing accommodations and modifications that will allow them equal opportunity to participate in school programs and activities.

### Blood Glucose Monitoring

- Student's blood glucose will be monitored at the times designated in the student's health care provider's orders.
- A student deemed independent may self-manage anywhere (e.g., in the classroom), anytime, and keep their diabetes supplies with them as determined by school nurse assessment in conjunction with their parent/guardian, and healthcare provider.
- Student may monitor blood glucose in the classroom or any school setting as appropriate.
- A plan should be discussed for a student who is not independent in their care concerning where blood glucose monitoring will occur. This should be identified in the emergency action plan.
- A student experiencing hypoglycemia should be treated on the spot if possible. School health services staff should be notified.
- A student who is symptomatic should be accompanied by an adult staff member to the health suite when leaving their current location is safe and appropriate.
- Teachers will send student to the health suite at specified times (e.g. before lunch, dismissal) as indicated in the student's health care provider's orders.
- Student shall be provided with privacy for blood glucose monitoring if desired.

### Health and Safety

- All school staff, including teachers, coaches and bus drivers who interact regularly with the student must know how to recognize high and low blood glucose levels and respond appropriately.
- Student should be permitted to leave the classroom to see the nurse for diabetes related issues without restriction and should be escorted if symptomatic.
- All teachers and substitute teachers will be provided with an emergency action plan and/or classroom plan created by the school nurse (RN).
- Trained school staff must be available during school and all school sponsored activities, which the student attends as a participant, to administer glucagon according to the health care provider orders and emergency action plan.
- Student access to a cell phone should be evaluated for health and safety.



### Insulin Administration

- A student deemed to be independent in their care may self-administer insulin based on the student's health care provider's orders.
- Student shall be provided privacy for insulin administration if desired.
- A method of communication will be established for the independent student to report to the school nurse/school health services staff concerning insulin dose and administration.

### Nutrition

- Student is permitted to eat whenever and wherever necessary including on school buses.
- Student should have appropriate and sufficient time to eat lunch.
- Food Services staff should provide carbohydrate counts and nutrition information for any food served at school.
- Student shall be permitted to have immediate access to water at all times.
- Student shall be permitted to have access to the bathroom without restriction.
- Student must have access to parent/guardian provided snacks, as needed.
- Student must have immediate access to fast-acting glucose.

### Activity and Exercise

- Physical education instructors and coaches must have a copy of the emergency action plan and be able to recognize signs and symptoms of hypoglycemia and hyperglycemia.
- Student may monitor blood glucose before, during, and after activity/exercise based on student's health care provider's orders.
- Student should have access to fast-acting carbohydrates during physical education, physical activities, sports and recess.

An **IEP** is a written document required under the Individuals with Disabilities Education Act for students with disabilities that outlines their need for special education and related services.