December 1, 2016

The Honorable Joan Carter Conway
Education, Health and Environmental Affairs Committee
2 West Miller Senate Office Building
11 Bladen Street
Annapolis, MD 21401

The Honorable Sheila E. Hixson
Ways and Means Committee
131 House Office Building
6 Bladen Street
Annapolis, MD 21401

RE: Diabetes Care Services (MSAR #10993)

Dear Senator Conway and Delegate Hixson:

The Education Article of the Annotated Code of Maryland, §7-426.4 directs the Maryland State Department of Education (MSDE) and the Maryland Department of Health and Mental Hygiene (DHMH) to establish guidelines for public schools regarding the administration of health care services to students with diabetes.

With the passage of House Bill 771 (2016), MSDE and DHMH are required to submit a report on the implementation of the plan to the Education, Health and Environmental Affairs Committee and Ways and Means Committee.

The enclosed report addresses identification, service provision, documentation, training for staff, students and family members, and other components of a comprehensive plan developed jointly by MSDE and DHMH in consultation with stakeholders.

Should you have questions or need additional information, please contact Alicia Mezu, Health Services Specialist, MSDE at 410-767-0353 or via email at alicia.mezu@maryland.gov. You may also contact Cheryl De Pinto, Medical Director, Office of Population Health Improvement, DHMH at 410-767-5595 or via email at cheryl.depinto@maryland.gov.

Best Regards,

Karen B. Salmon, Ph.D.
State Superintendent of Schools

Van T. Mitchell
Secretary

MSDE, 200 West Baltimore Street, Baltimore, MD 21201 Phone (410) 767-0100; Statewide Toll Free 1-888-246-0016
DHMH, 201 West Preston Street, Baltimore, MD 21201 Phone (410) 7675300; Fax (410) 3337106; Statewide Toll Free 18774633464
Report on Guidelines for Administration of Health Care Services to Students with Diabetes

December 1, 2016

Submitted by the Maryland State Department of Education and the Maryland Department of Health and Mental Hygiene in fulfillment of the requirements of House Bill 771 (2016) – Public Schools – Administration of Diabetes Care Services – Guidelines
INTRODUCTION

In 2016, the Maryland legislature passed House Bill 771 (HB 771), entitled “Public Schools Administration of Diabetes Care Services – Guidelines.” HB 771 as codified in the Annotated Code of Maryland, Education Article, §7-426.4, requires the Department of Health and Mental Hygiene (DHMH) and the Maryland State Department of Education (MSDE) to develop guidelines related to the provision of care to students with diabetes. Furthermore, it required MSDE and DHMH to develop a plan to implement the requirements of the bill and to report on the implementation of the plan by December 1, 2016. HB 771 was introduced in response to parent concerns expressed regarding their child’s diabetes management in the school setting. Prior to the introduction of HB 771, MSDE and DHMH developed a work plan to address these concerns. This report reflects the progress to date in the implementation of the plan and activities specified in HB 771.

Diabetes is a chronic disorder of carbohydrate, fat, and protein metabolism characterized by hyperglycemia (high blood glucose) and glycosuria (glucose in the urine) 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. Diabetes management involves significant daily attention to blood glucose monitoring, medication administration, food intake, and physical activity to maintain health and a healthy active lifestyle.

According to the Centers for Disease Control and Prevention (CDC), 22 million persons in the USA had diabetes in 2014, representing a 4-fold increase since 1980.1 There are three types of diabetes:

1) **Type 1 diabetes:** Type 1 diabetes is an autoimmune disease that causes the destruction of the insulin producing cells of the pancreas. Persons with Type 1 diabetes need multiple doses of insulin daily to live.

2) **Type 2 diabetes:** Type 2 diabetes results from the body’s inability to use insulin adequately due to insulin resistance. The CDC reports that Type 2 diabetes accounts for 90%-95% of cases of diabetes.2 Type 2 diabetes is managed with diet, exercise, and medication. Sometimes insulin is required to treat Type 2 diabetes.

According to the CDC, childhood obesity has more than doubled in children and tripled in adolescents in the past 30 years. The increase in Type 2 diabetes is associated with the rise in obesity. A study of youth in Maryland, ages 2–19 years, revealed that 21.4% of children and teenagers participating in the Maryland Healthy Kids Medicaid Program were obese.3

3) **Gestational diabetes:** Gestational diabetes is a temporary hormonally mediated state of insulin resistance that occurs during pregnancy and is managed primarily with diet. Gestational

---

3 Hurt L, De Pinto C, Watson J, and Grant M. Diagnosis and Screening for Obesity-Related Conditions Among Children and Teens Receiving Medicaid — Maryland, 2005–2010. MMWR / April 11, 2014 / Vol. 63 / No. 14. [https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6314a2.htm?s_cid=mm6314a2_w](https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6314a2.htm?s_cid=mm6314a2_w)
diabetes usually resolves after childbirth, but increases the mother’s and the child’s risk of developing diabetes later in life.

During the 2014-2015 school year, there were approximately 2,800 students (Kindergarten through 12th grade) with diabetes in Maryland public schools.¹ Current Maryland data does not distinguish between the types of diabetes.

All students have the right to fully participate in all school activities and school sponsored events. Students cannot be denied access to any school activity based on a medical condition (i.e., diabetes). In the school setting, 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, the Individuals with Disabilities Education Improvement Act of 2004, and the Annotated Code of Maryland, Education Article § 7-426.4 form the legal foundation upon which school diabetes management occurs.

Coordinating the care of students with diabetes in compliance with these State and federal mandates and principles of quality nursing practice can be a challenge for schools. To address these challenges it is important for schools to work collaboratively with families, students, and health care providers to ensure optimal diabetes management as well as academic success for students with diabetes. To that end, on November 21, 2015, DHMH, MSDE, and the Children’s National Health System convened a school diabetes management stakeholder meeting. The goal of the meeting was to provide a forum for stakeholders to discuss challenges and opportunities to advance school diabetes management in Maryland. The overarching tasks during the meeting were to: 1) identify school health services program strengths and weaknesses; 2) identify unmet needs of students, families, schools, physicians, and school nurses; and 3) make recommendations for strategies to meet those needs. The meeting attendees identified several strategies to address school health services program needs. The identified needs included updated school health services guidelines for diabetes management in the school setting, and defined roles and responsibilities for schools, parents, and nurses regarding diabetes management during the regular school day and during school sponsored events/after school events.

The outcome of the meeting was a set of recommendations to enhance school diabetes management and a process to implement the recommendations. The recommendations gathered during the meeting culminated in a State work plan (see appendix A) outlining a coordinated set of activities to be conducted collaboratively by MSDE, DHMH, local school systems, local health departments, parents, advocates, and other stakeholders. As required by House Bill 771, the work plan implementation progress is outlined below.

¹ School Health Services Annual Survey-2015 (MSDE)
WORK PLAN IMPLEMENTATION

I. DIABETES MANAGEMENT GUIDELINES FOR SCHOOLS

Work Plan Outcome 1: Revised school health services guidelines for diabetes management in the school setting that clearly define roles and responsibilities for schools, parents, and nurses regarding diabetes management throughout the day and during school sponsored events/after school events.

Annotated Code of Maryland, Education Article §7-401, School Health Program, requires the Maryland State Department of Education (MSDE) and the Department of Health and Mental Hygiene (DHMH) to jointly develop public standards and guidelines for school health programs and offer assistance to county boards of education and county health departments in their implementation. This requirement is currently implemented through regular convening of a School Health Services Practice Issues Committee jointly lead by MSDE and DHMH. This committee is working to revise the Management of Diabetes in Schools: Maryland State School Health Services Guideline (Guideline).

To attain Outcome 1, the following actions in the work plan were completed:

1. Literature Review: An extensive literature review was completed to identify best practices in diabetes management, school diabetes management, school nursing, and school diabetes management policy. Information gathered from the literature review was used to determine content for the Guideline.

2. Policy Review: An analysis of policies for school diabetes management in other states and across local jurisdictions in Maryland was conducted. Policies related to nursing practice, delegation of nursing tasks, insulin, and glucagon administration were reviewed.

3. Stakeholder Engagement: A review of the recommendations from stakeholders attending the November 21, 2015 meeting was conducted. Stakeholders were invited to participate in the development and review of the Guideline. All stakeholder comments were reviewed and considered for inclusion.

4. Draft Guideline: A draft of the Guideline was developed, reviewed, and edited by the School Health Services Practice Issues Committee, local school health services coordinators, and external partners (i.e., parents, teachers, diabetes educators, endocrinologists, the Maryland Board of Nursing, Maryland Association of Boards of Education, and the Public School Superintendents’ Association of Maryland). The draft Guideline is contained in appendix B.

The content of the Guideline reflects the requirements of Annotated Code of Maryland, Education Article, §7-426.4. The content includes, but is not limited to:

- Processes for routine diabetes management;
- Processes for insulin administration including insulin pump management;
• Self-management assessment and policies;
• Procedures for emergency management of hypoglycemia and hyperglycemia;
• Process for development of individualized health plans and emergency plans/protocols;
• Process for implementing the nursing process for delegation of nursing tasks related to diabetes management, including training unlicensed school staff to perform certain diabetes care tasks;
• Content and training standards for school nurses to train unlicensed school staff to work with school nurses to provide diabetes care;
• Policies and procedures related to meals/snacks, physical education, exercise, and physical activity;
• Guidelines for meeting legal obligations for diabetes care during school-sponsored activities and field trips, including the use of unlicensed school staff to provide diabetes care;
• Principles of diabetes care coordination including care coordination roles and responsibilities for parents/guardians, students, school administrators, and school staff;
• Guidelines for the development of individualized education programs (IEP), Section 504 plans, and other accommodations; and
• Resources for school nurses related to training unlicensed school staff to administer glucagon, management of hyperglycemia, diabetes self-management skills assessment checklist, diabetes medical management plan/health care provider order form, and a parent information brochure related to common 504 plan accommodations for students with diabetes.

5. **State Agency Review:** MSDE and DHMH completed an agency review and approval process by each agency’s Assistant Attorney General on October 31, 2016.

6. **Local Agency Review:** Local superintendents and local health officers were given an opportunity to review and provide comments to the Guideline draft. The review will be completed by November 30, 2016.

To fully attain this outcome, the following actions will be completed to finalize and disseminate the Guideline by the dates indicated below:

1. **Guidelines Dissemination:** The Guideline content will be finalized based on comments from the local agency review. Once final, the Guideline will be disseminated to the local school health services programs by December 15, 2016.

2. **Guidelines Implementation:** The Guideline will be fully implemented beginning January 2017.
II. TRAINING FOR SCHOOL HEALTH SERVICES STAFF

Work Plan Outcome 2 (Part 1): Training events for school health services staff and school staff (e.g. teachers, coaches, administrators) regarding diabetes management in the school setting, including issues of nursing delegation and training unlicensed school staff.

School nurses and other school health services staff strengthen and facilitate the educational process by improving and protecting the health status of children and by identifying and addressing health related barriers to learning. In Maryland, school systems may utilize a variety of school health services staffing models: 1) a registered nurse only; 2) a mix of registered nurses and licensed practical nurses; 3) a mix of registered nurses and certified nursing assistants; or 4) a mix of registered nurses, licensed practical nurses, and certified nursing assistants.

Regardless of the service delivery model, professional development is important for all members of the school health services team to ensure that all team members are up to date with the scope of practice for professional conduct and attain ongoing knowledge and skills related to school health services. Annotated Code of Maryland, Education Article §7-401 requires MSDE and DHMH to offer assistance to county boards of education and county health departments to implement school health services standards. This assistance includes offering professional development and training to school health services program staff.

The training offered to school health services staff related to school diabetes management was based on feedback from the diabetes stakeholder meeting held on November 21, 2015, and recommendations from school health services coordinators, and the Maryland Board of Nursing.

To attain Outcome 2, Part 1, the following actions in the work plan were completed related to training school health services staff:

1. **Training Content Development:** The content for training school health services coordinators and school nurses was determined by MSDE, DHMH, Maryland Board of Nursing, the National Association of School Nurses, endocrinologists, and local school health services programs.

2. **Training of School Health Services Coordinators:** School health services coordinators are the leaders of the local school health services program. On March 3, 2016, an all-day training was provided to equip school health services coordinators, managers, and supervisors to provide leadership in policy development, state-of-the-art knowledge on the principles of diabetes management, hands-on demonstration and practice on glucagon administration, and practical information for training unlicensed school staff to administer glucagon. Speakers for this training session included representatives from the Children’s National Health Systems Division of Pediatric Endocrinology, the National Association of School Nurses, Kennedy Krieger Institute/Specialized Health Needs Interagency Collaboration (SHNIC) Program, Maryland Board of Nursing, and the Baltimore County Public Schools. A total of 82 school health coordinators and supervisors, representing all 24 Maryland jurisdictions, were trained.
3. **Training for School Nurses:** School nurse trainings were held during three regional training sessions. One training occurred on May 21, 2016 in Queen Anne’s County and two trainings were held on June 11, 2016 in Prince George’s County and Washington County. The trainings were provided through a partnership with the National Association of School Nurses (NASN). The trainings utilized the NASN curriculum, “Helping Administer to the Needs of the Student with Diabetes in Schools” (H.A.N.D.S. SM) and were supported by a DHMH grant from the Centers for Disease Control and Prevention. The trainings included informing trainees of the content of the new diabetes guidelines as required by HB 771. A total of 194 nurses were trained during the three regional training sessions.

4. **School Health Interdisciplinary Program:** A statewide offering of H.A.N.D.S. SM occurred during the School Health Interdisciplinary Program conference on August 5, 2016. One hundred nurses and nine nurse practitioners were trained. This included several nurses practicing in nonpublic schools.

5. **Local Training:** In FFY 2016, DHMH utilized grant funding from the Centers for Disease Control and Prevention to purchase training materials for local school health services programs. Materials included resources on the management of chronic conditions in schools and management of diabetes in schools. In the past year, 252 school nurses were trained using these materials.

6. **Orientation to the New Guideline:** Due to significant revisions to the Guideline, MSDE and DHMH used a previously scheduled meeting of the school health services coordinators to orient local program leaders to the new content of the Guideline. During the meeting, participants reviewed recommended policies and procedures for implementing the new Guideline and the data collection processes. The American Diabetes Association participated in the meeting and informed the group about resources available to support the implementation process. The orientation occurred on October 6, 2016. Twenty of Maryland’s 24 jurisdictions attended.

### III. TRAINING FOR UNLICENSED SCHOOL STAFF

**Work Plan Outcome 2 (Part 2):** Training events for school health services staff and school staff (e.g. teachers, coaches, administrators) regarding diabetes management in the school setting, including issues of nursing delegation and training unlicensed school staff.

The goal of training and educating school staff is to equip them to provide an appropriate level of diabetes care when a school nurse or other school health services staff member is not available. The training aims to resolve local school system and parent concerns regarding local school health service program capacity issues when nurses are not available, while also maintaining a high level of safety and quality for the services provided. In accordance with Annotated Code of Maryland, Education Articles §7-426.4 and §7-401, DHMH and MSDE will provide ongoing technical assistance to school health services programs regarding training of unlicensed school staff; however, school nurses will conduct the training for unlicensed school staff at the local level. Training content should be guided by nursing judgment and the needs of individual students.
DHMH and MSDE engaged in a collaborative process to develop content standards for training unlicensed school staff to perform certain diabetes management tasks. Collaborators included local school health services coordinators, the American Diabetes Association, Kennedy Krieger Institute/Specialized Health Needs Interagency Collaboration (SHNIC) Program, certified diabetes educators, and the Maryland Board of Nursing. The training standards document includes training resources and skill assessment tools to assist school nurses to train unlicensed school staff to provide diabetes care. The training content standards developed to implement the Guideline includes information for school staff on liability provisions for individuals who have received instruction on how to provide diabetes care in accordance with the Guideline. Liability protections are contained in Annotated Code of Maryland, Education Article, §7-426.4.

To attain Outcome 2, Part 2, the following actions in the work plan were completed related to training school staff:

1. **Policy Review**: DHMH previously reviewed local delegation practices of school health services programs related to school diabetes management. This review included identifying local practice related to delegation of insulin and glucagon administration. Additionally, DHMH conducted a review of policy and standards from other states. The review focused on states currently implementing procedures to train unlicensed school staff to provide diabetes care. This information was used to determine training needs for unlicensed school staff and applicable nursing practice standards regarding training unlicensed persons to provide diabetes care.

2. **Statute and Regulation Review**: To assure policy recommendations and training standards are consistent with Maryland law and regulations, DHMH and MSDE worked closely with the Maryland Board of Nursing.

3. **Training Content Standards**: Training content standards and materials for unlicensed school staff were developed based on standards of nursing practice. The draft training standards are contained as an appendix to the draft Guideline in appendix B.

The content of the training includes:

- General information regarding diabetes;
- Principles of routine diabetes care;
- Administration of glucagon;
- Tools and processes for supporting students who self-manage their diabetes;
- Strategies for hypoglycemia prevention;
- Recognition of symptoms of hypoglycemia and hyperglycemia;
- Recommendations regarding length and frequency of training, including refresher training;
- Administration of insulin in accordance with health care provider orders when necessary if a nurse is not available; and
- Liability protections in accordance with Annotated Code of Maryland, Education Article, §7-426.4.
Other content areas specified in the work plan were not included in the training document as they are dealt with extensively in the diabetes Guideline; specifically, the role of the school nurse to provide the training to unlicensed school staff, specification of who can be trained to provide diabetes care, communication of emergency care plans, and training substitute teachers and nurses.

4. **Resources:** The group identified training materials available in Maryland and other states appropriate to train unlicensed persons to provide diabetes care. Links to web based materials were included in the document. The National Association of School Nurses is granting DHMH a material copyright release so materials can be made available to all Maryland school nurses (not only those who attended H.A.N.D.S. SM training). The Kennedy Krieger Institute/Specialized Health Needs Interagency Collaboration (SHNIC) Program developed additional resources. The SHNIC program has posted a series of presentations on their website for access by school nurses.

5. **Training Local School Health Services Coordinators:** On October 6, 2016, DHMH and MSDE provided an orientation on the Guideline to the local school health services coordinators. A portion of this meeting included a review of the specifications for training unlicensed school staff. There was also a review of local and web-based resources available for school nurses to train unlicensed school staff. Additional technical assistance needs were identified for local school health services leaders and unlicensed school staff. DHMH, MSDE, and the American Diabetes Association provided the technical assistance session.

To fully attain this outcome of the work plan, the following actions will be completed by the dates indicated below:

1. **Technical Assistance:** Technical assistance to local school health services leaders and building level nurses is mandated in Annotated Code of Maryland, Education Article § 7-401. This is an ongoing process that occurs when needed. Technical assistance related to implementation of training for unlicensed school staff will begin once the new Guideline is disseminated in December 2016.

2. **Training for Unlicensed School Staff:** Training unlicensed school staff to provide specified diabetes management tasks have begun based on the passage of HB 771 and previous dialogue with local school health services staff. Additional training is needed to achieve more widespread implementation. This training will be ongoing once fully initiated in January 2017. It is important to note, this training is conducted based on nursing judgment and the needs of individual students.

**IV. TOOLS AND COMMUNICATION PROCESSES**

**Work Plan Outcome 3: Tools and processes for enhanced communication between all members of the diabetes management team (school, family, and community providers).**

Medical advances in the management of diabetes require school diabetes management to align with these advances. Tools and processes that foster clear communication of care needs from health care providers to school health services program staff is an important aspect of
implementing best practice for school diabetes management. A committee of school health services experts/key stakeholders met to discuss and revise the Maryland State Management of Diabetes School Order Form, including the Maryland State Supplemental Form for Students with Insulin Pumps. Input from the November 21, 2015 stakeholder meeting identified important revisions necessary to facilitate effective communication. The new diabetes order form will be called the “Maryland Diabetes Medical Management Plan/Health Care Provider Order Form” (Form) to align with the term used by the American Diabetes Association. The Form is part of the revised Guideline contained in appendix B.

To attain Outcome 3, the following actions in the work plan were completed related to the process for revising the State school diabetes order form:

1. **Stakeholder Input:** A committee of health care providers (i.e. Diabetes Order Form Committee) was convened in early 2016 to discuss how to enhance communication among health care providers, school nurses, and parents/guardians to assist in meeting the needs of students with diabetes in the school setting.

2. **Collaboration:** The committee met regularly from March through September 2016 to discuss the form, suggested revisions, and formatting of the document for ease of communication related to the authorized providers’ orders for the school nurse to follow and carry out in the school setting.

3. **Review:** On September 9, 2016, the Diabetes Order Form Committee finalized the draft Form. On September 26, 2016, the State School Health Practice Issues Committee provided feedback and input on the draft Form. The Assistant Attorney General approved the finalized Form on October 30, 2016.

To fully attain this outcome of the work plan, the following actions will be completed by the dates indicated below. Additional training activities/resources were added to the work plan to achieve this outcome:

1. **Local Agency Review:** The revised Form will be shared with the local school superintendents and local health officers in conjunction with the Guideline for review, feedback, and input. Comments on the Form will be reviewed by the Diabetes Order Form Committee and the form will be finalized by November 30, 2016.

2. **Form Dissemination:** The finalized Form will be disseminated to the local school health services programs by December 15, 2016 and fully implemented by January 2017.

   The Form will be posted on the MSDE school health services website at www.mdschoolhealthservices.org and made available as a writable PDF so health care providers can incorporate the form into their electronic health records. The final Form will also be shared with pediatricians, diabetes health care providers, and key diabetes stakeholders through email and other communication processes.

3. **Diabetes Medical Management Plan/Health Care Provider Order Form Instructions:** The Form is an important communication tool used by health care providers to specify the
care needed by students with diabetes while in school. As previously noted, the Form was revised to address concerns of both the diabetes care providers and school nurses. Additional training materials will be provided to facilitate implementation of the new Form. These materials will be completed and distributed by December 15, 2016.

The State School Health Team in collaboration with the State School Health Practice Issues Committee and the Diabetes Order Form Committee will continue to monitor the effectiveness of the new Form over the next year and will initiate the necessary changes and updates to the order Form as appropriate, as a means to continue to enhance communication.

V. EDUCATIONAL SUPPORTS

Work Plan Outcome 4: Templates and tools for schools related to development and implementation of 504 plans and other educational supports for students with diabetes.

Federal legislation supports and protects the rights of students with chronic conditions and disabilities to access free appropriate public education (FAPE) in the least restrictive environment. Specifically, the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA), 20 U.S.C. §1400, et seq and Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794 (Section 504) include provisions for addressing health needs of students that affect their education. Schools have a legal responsibility to provide certain school nursing services when such supportive services are necessary for students to access and benefit from their educational programs. Adjustments in meals, meal schedules, physical activity, and medication administration processes should be implemented to maximize diabetes control and minimize disruption to the learning process/school experience.

To provide effective educational supports, school staff and parents should be aware of the types of accommodations that are the most helpful or effective in meeting the educational needs of students with diabetes. Effective communication regarding necessary accommodations for students with diabetes requires each member of the 504 plan team and the school health services team to be knowledgeable about the impact of diabetes on learning and the school experience. Tools and materials for training school staff and parents is a mechanism to increase knowledge and awareness of school accommodations, policies, and procedures.

To attain Outcome 4, the following actions in the work plan were completed related to the development and implementation of 504 plans and other educational supports for students with diabetes:

1. **Stakeholder Input:** A workgroup consisting of State and local leaders in education and health, teachers, parents of students with diabetes, and diabetes advocates convened to discuss and develop resources to achieve this goal. The workgroup met on three occasions in June and July of 2016 to evaluate current training needs for school staff regarding educational supports for students with chronic conditions including diabetes.

2. **Identification of Best Practices:** The workgroup identified and discussed available templates for 504 plans currently in use by other states and among local school systems in Maryland. Upon review of the various templates, the workgroup discussed and identified best
practices in 504 plan elements for students with diabetes.

3. **Collaboration:** The group convened face-to-face meetings to develop a 504 plan information brochure for parents. The document provides recommendations for parents and educators related to 504 plans.

4. **504 Plan Brochure:** The workgroup developed an informational brochure for parents and schools. The draft 504 Plan Brochure (Brochure) was shared with/reviewed by the State School Health Practice Issues Committee on September 26, 2016. The Brochure was revised by the workgroup on October 3, 2016. The final draft was shared with the local school health services coordinators at an administrative meeting on October 6, 2016. The final draft 504 Plan Brochure was reviewed by MSDE and DHMH Assistant Attorney Generals for school health as part of the State agency review of the draft Guideline. The draft Brochure is contained in the Guideline found in appendix B.

To fully attain this outcome of the work plan, the following actions will be completed by the dates indicated below:

1. **Local Agency Review:** The revised Brochure will be shared with the local school superintendents and local health officers in conjunction with the Guideline for review, feedback, and input. Comments on the Brochure will be reviewed by the workgroup and School Health Services Practice Issues Committee and finalized by December 15, 2016.

2. **504 Plan Brochure Dissemination:** The final document will be available as a resource for school health services staff, parents, and local educators by January 2017.

3. **Training:** Local school health services programs will determine additional tools and materials needed at the local level. Training or professional development for school staff or parents regarding educational supports for students with diabetes will be determined at the local level. Data regarding 504 plan implementation will be gathered as part of the state monitoring and evaluation process outlined in section VII of this report.

**VI. ENGAGE NONPUBLIC SCHOOLS**

The State school health team routinely engages nonpublic schools to review and discuss school health services topics. This engagement most often occurs through invitation to the quarterly administrative meetings for the Superintendent’s Nonpublic Schools Administrators Workgroup. The State school health team shares resources for school health services with MSDE’s Nonpublic Schools Branch, invites nonpublic school nurses to statewide professional development events, and regularly responds to telephone calls/emails from nonpublic school nurses and school administrators regarding various school health topics, including diabetes management. The purpose of engaging nonpublic schools is to provide school health updates regarding the health and safety of youth.

To attain this outcome, the following actions in the work plan were completed related to the engagement of nonpublic Schools:
1. **Sharing Resources:** The Guideline will be published on the state school health services website by December 15, 2016. School nurses, school administrators, and parents from the nonpublic school setting frequently access the state school health services website and use the guidelines to implement a safe and healthy environment for the students in the nonpublic school setting.

2. **Professional Development:** Information regarding school health services trainings, professional development events, and state/national conferences are shared and disseminated to nonpublic school points of contacts via email and through mass mailings from the MSDE Nonpublic Schools Branch.

To fully attain this outcome of the work plan, the following actions will be completed by the dates indicated below:

1. **Presentations:** The school health team will provide updates related to the current law for diabetes management in the school setting, including sharing school health tools and materials related to diabetes management in the school setting, at a scheduled Nonpublic School Workgroup (Workgroup) meeting in the spring of 2017. Additional presentations to the Workgroup will occur as needed.

### VII. PROGRAM MONITORING AND EVALUATION

**Work Plan Outcome 5: Revised school health services program-monitoring procedures to ensure oversight and evaluation.**

The Code of Maryland Regulations (COMAR) 13A.05.05.14, School Health Services Standards – Monitoring and Evaluation, requires a monitoring and evaluation component for all local school health services programs and may include on-site reviews. A focused monitoring program is required to ensure consistent application of state policy and regulation. The State School Health Team met and identified several data indicators related to work plan activities addressing school health services program administration and accountability. Data tracked from this monitoring process will be used to identify the local school systems most in need of assistance to facilitate the provision of assistance in an effective manner. School Health Services Program monitoring and evaluation are necessary for federal, State, and local mandates to ensure local program accountability.

DHMH and MSDE are committed to addressing parent needs and concerns through evaluation and monitoring of the work plan. A determination of parent satisfaction with the care of their child with diabetes is an important aspect of program monitoring and evaluation.

To attain Outcome 5, the following work plan activities were completed or are in progress:

1. **Internal Review:** During the implementation of DHMH chronic disease management programs, a previous review of current data collection processes related to school health services program monitoring and evaluation was completed. The results of the review concluded that new data collection tools are needed.
2. **Monitoring and Evaluation:** The MSDE State School Health Team has updated the current Student Services program monitoring and evaluation tool to include the new mandate for the development of diabetes guidelines in public schools. The required school health services program monitoring and evaluation for the local school health programs will be conducted for five local programs in conjunction through the mandated student services onsite reviews and the student record reviews as scheduled for the 2016-2017 school year. Additionally, the school health services team will include implementation of the Guideline in the school health services program reviews.

3. **State Data Collection Processes/Surveys:** Effective monitoring requires collection of baseline data and processes for data tracking. Tools for data collection are being finalized to collect baseline data. Data will be collected from two primary sources: 1) school health services coordinators and 2) parents of students with diabetes. This data will be collected on an ongoing basis to identify trends and track improvements in school diabetes management related to concerns identified from the baseline data.

Data from school health services coordinators will be collected via a survey tool to document implementation of the Guideline. Data indicators include but are not limited to:

- Number of students with diabetes;
- Number and type of school staff trained to administer glucagon;
- Number and type of school staff trained to administer insulin; and
- Number and type of additional school health services staff hired to provide care during field trips and other school sponsored activities.

Data from parents will be collected via a survey tool to document parent experience and satisfaction with the care their child receives in school related to diabetes management. School nurses and health care providers will distribute the survey tool to parents. Data indicators include but are not limited to:

- What unlicensed school staff have been trained to perform a variety of diabetes management tasks for their child;
- What is their level of satisfaction with the care their child receives from the school nurse vs. trained unlicensed school staff;
- Whether their child has been denied participation in a field trip or other school sponsored activity due to the need for diabetes care;
- What challenges their child has experienced in the self-management of their diabetes in school;
- What obstacles their child has experienced accessing educational accommodations related to their diabetes; and
- Whether they have concerns related to their child's diabetes management during school or during school-sponsored events.

4. **Collaboration:** To monitor the implementation of the Guideline, an ongoing process to engage school diabetes management stakeholders is needed. A collaborative process is being implemented to determine the most meaningful data to collect and the most appropriate
targets for data collection. Parents, local school health services coordinators and pediatric endocrinologists are part of the process.

To fully attain this outcome of the work plan, the following actions will be completed by the dates indicated below:

1. **Survey Implementation:** The new state level program monitoring activities and dissemination of the surveys will be implemented in December 2016. Baseline data will be collected in December and tracked at least annually.

2. **Advisory Board:** One recommendation from the stakeholder meeting on November 21, 2015 was to convene an advisory board to address issues related to school diabetes management. The process for implementing the work plan included nearly 100 persons representing over a dozen different stakeholder groups. The stakeholders contributed to the process by participation in five workgroups. It is the expectation of the MSDE and DHMH that these workgroups will continue to meet on an as needed basis. The need for an ongoing singular advisory group will be determined in January 2017 after the work plan is fully implemented. The decision will be made with input from stakeholders and subject matter experts.

3. **School Health Services Administrative Processes:** MSDE and DHMH will work to develop a process for ongoing quality improvement activities within the school health services program. The structure of these activities will be determined and implemented after analysis of the data collected through the processes outlined in #3 above.

**CONCLUSION**

There has been significant progress made to strengthen local school health services programs to meet the needs of students with diabetes through the implementation of the work plan developed by MSDE and DHMH. The success of implementation of the work plan has been the result of an extensive collaborative process and commitment of MSDE and DHMH to assure students with diabetes are safe in school and able to take full advantage of their right to a free and appropriate public education as mandated by federal law. It is the expectation of MSDE and DHMH that further progress to fully implement the work plan and the ongoing monitoring processes will allow maximal impact and benefit for students and families.
APPENDIX A
School Diabetes Management: School Health Services Work Plan
School Diabetes Management: School Health Services Work Plan

Program Time Frame: January 2016-January 2017

January 14, 2016

Plan Overview:

School diabetes management is a complex process requiring a team approach. Diabetes management involves a coordinated set of activities, including adherence to best-practice/quality guidelines and standards, training of multiple school based team members, coordinated and consistent communication between families, health care providers and school health services staff, and implementation of a variety of academic supports for students with diabetes. The plan that follows provides the framework for activities and outcomes proposed to be implemented by the Maryland State Department of Education and the Maryland Department of Health and Mental Hygiene in conjunction with local school health services programs.

This plan is based on implementing current school health services standards within a robust school health services infrastructure at the local school system and local health department level. In addition, the plan proposes structural and operational program enhancements based on input from a diverse group of stakeholders and seeks to address identified challenges and barriers to optimal diabetes management in the school setting. Specifically, the plan includes mechanisms to provide training to school health services staff, training unlicensed school staff to perform diabetes management with school nurse oversight, and provision of educational supports to students with diabetes. Activities within the plan are proposed to operate within current legal and regulatory frameworks with additional supports for improved implementation of program elements from enhanced program guidelines.

Implementation of the plan at the local level will involve local school system and local health department school health services staff. Additionally, volunteers from a recent school diabetes management stakeholder meeting will assist in implementation based on their expressed willingness to assist.
Goal:

The goal of the plan is for all local school health services programs to provide quality school diabetes management through implementation of policies and programs so students with diabetes can remain safe in school, be supported to optimally learn, and fully participate in all aspects of school programming, including after school activities and other school sponsored events.

Objectives:

To achieve this goal, the objectives of this plan are:

1. By July 1, 2016, disseminate new guidelines for management of diabetes in schools to school health services programs;
2. By July 1, 2016, train local school health services leaders to equip them to provide ongoing training and oversight of school nurses related to delegation of diabetes management activities;
3. By September 1, 2016, train school health services staff to meet the needs of students with diabetes, including their needs during school sponsored events and afterschool events as needed;
4. By January 1, 2017, implement improved state level program monitoring and administrative procedures for oversight and evaluation of school health programs; and
5. By January 1, 2017, implement a process to enhance educational supports for students with diabetes.

Outcomes:

Primary outcomes for the plan are:

1. Revised school health services guidelines for diabetes management in the school setting that clearly define roles and responsibilities for schools, parents, and nurses regarding diabetes management throughout the day and during school sponsored events/after school events;
2. Training events for school health services staff and school staff (e.g. teachers, coaches, administrators) regarding diabetes management in the school setting, including issues of nursing delegation and training unlicensed school staff;
3. Tools and processes for enhanced communication between all members of the diabetes management team (school, family, and community providers);
4. Templates and tools for schools related to development and implementation of 504 plans and other educational supports for students with diabetes; and
5. Revised school health services program monitoring procedures to ensure oversight and evaluation.
## Plan Implementation Team:

<table>
<thead>
<tr>
<th>Maryland State Department of Education</th>
<th>Maryland Department of Health and Mental Hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristina Kyles-Smith</td>
<td>Jennifer Newman Barnhart, MPH</td>
</tr>
<tr>
<td>Assistant State Superintendent</td>
<td>Director, Office of Population Health Improvement</td>
</tr>
<tr>
<td>Div. of Student, Family, &amp; School Support</td>
<td></td>
</tr>
<tr>
<td>Alicia L. Mezu, MSN/Ed, BSN, BS, RN</td>
<td>Cheryl De Pinto, MD, MPH</td>
</tr>
<tr>
<td>Health Services Specialist</td>
<td>Medical Director, Office of Population Health Improvement</td>
</tr>
<tr>
<td>Student Services and Strategic Planning Branch</td>
<td>Medical Director, Office of School Health</td>
</tr>
<tr>
<td>Walter J. Sallee, MPA</td>
<td></td>
</tr>
<tr>
<td>Director, Student Services</td>
<td>Christina Herrero-Backe, MA</td>
</tr>
<tr>
<td>Maryland State Department of Education</td>
<td>School Health Services Program Coordinator</td>
</tr>
<tr>
<td>MSDE Specialist for 504</td>
<td>Office of Population Health Improvement</td>
</tr>
<tr>
<td>MSDE Specialist for Family Involvement</td>
<td>Kristi Pier, MHS, MCHES</td>
</tr>
<tr>
<td></td>
<td>Director, Center for Chronic Disease Prevention and Control</td>
</tr>
</tbody>
</table>
Work Plan Deliverables:

1. Updated school health services guidelines

Md. Education Code Ann. § 7-401 requires the Maryland State Department of Education (MSDE) and the Department of Health and Mental Hygiene (DHMH) to jointly develop public standards and guidelines for school health programs and offer assistance to the county boards and county health departments in their implementation. This requirement is currently implemented through regular convening of a School Health Services Practice Committee jointly lead by MSDE and DHMH. The SHS practice committee and interested meeting participants will work to revise current guidelines for diabetes management in Maryland schools and disseminate the updated guidelines by June 30, 2016.

The guideline content will be updated to include guidance on identified school diabetes management gaps as well as content mandated by Md. Education Code Ann. § 7-426. The content will include but not be limited to:

1. Principles of school diabetes management
2. Emergency management of hyper- and hypoglycemia
3. The nursing process related to students with diabetes including assessment of student needs for care during after school and other school sponsored events
4. Components of the individualized health plan (IHP) including self-management
5. Emergency plans/protocols
7. Care coordination roles and responsibilities
8. Parent/guardian responsibilities
9. Student responsibilities
10. School responsibilities
11. School administrator responsibilities
12. School staff responsibilities and training including emergency medication administration
13. Education planning, IEP, 504 Plans and other accommodations
14. Policy and procedures to share emergency care plan and 504 plan with appropriate school staff
15. School wide diabetes awareness and education
16. Emergency coverage for school-sponsored activities
17. Monitoring/evaluation of diabetes management activities
18. Principles of communication between the school nurse, families, providers, and other school health services staff
19. Policy recommendations regarding use of technology
20. Assessment of staffing needs and policy options for ongoing/routine and emergency care during the school day and after school and other school sponsored events.

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Literature review to identify best practices in school diabetes management not contained in current guidelines</td>
<td>DHMH</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyses of policies in other states and across local jurisdictions in Maryland</td>
<td>DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review stakeholder meeting recommendations and diabetes management survey results</td>
<td>DHMH, MSDE, Stakeholder representatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review outline of revised guideline by school health services practice committee</td>
<td>SHS Practice Committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop recommended content revisions to address recommendations and service gaps</td>
<td>MSDE, DHMH, SHS Practice Committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop draft guidelines</td>
<td>DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Draft guideline review by outside expert reviewers (meeting participant volunteers)</td>
<td>Stakeholder representatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comments due from reviewers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Completed**

**In Progress**

**Proposed Time Frame**
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY</td>
<td>Review draft guidelines comments</td>
<td>MSDE DHMH SHS Practice Committee</td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>Edit guideline based on comments</td>
<td>DHMH</td>
</tr>
<tr>
<td>MARCH</td>
<td>Draft guideline review by local school health services coordinators for review and comments</td>
<td>SHS Coordinators</td>
</tr>
<tr>
<td>APRIL</td>
<td>Comments from local school health services coordinators due</td>
<td></td>
</tr>
<tr>
<td>MAY</td>
<td>State Agency review</td>
<td>DHMH MSDE</td>
</tr>
<tr>
<td>JUNE</td>
<td>AG approval</td>
<td>MSDE DHMH</td>
</tr>
</tbody>
</table>

**Activity Details:**
- **Review draft guidelines comments:** MSDE DHMH SHS Practice Committee
- **Edit guideline based on comments:** DHMH
- **Draft guideline review by local school health services coordinators for review and comments:** SHS Coordinators
- **Comments from local school health services coordinators due:**
- **State Agency review:** DHMH MSDE
- **AG approval:** MSDE DHMH
- **Local agency review:**
  - Superintendent
  - LHO comments
- **Comments from local leaders due:**
- **Finalize document:** DHMH
- **Disseminate final guideline:** MSDE

**Time Frame:**

<table>
<thead>
<tr>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
<td>Week 4</td>
<td>Week</td>
<td>Week</td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

**Notes:**
- Completed
- In Progress
- Proposed Time Frame
2. School diabetes order form revision

The “Maryland State Management of Diabetes at School/Order Form” was developed and approved by the Maryland State Department of Education in collaboration with key stakeholders in June 2004. Additionally, a ‘Maryland State Supplemental Form for Students with Insulin Pumps’ was developed and approved for use in the school setting. In order for children to receive medication or have invasive medical procedures performed (e.g., blood glucose testing) in school, an order from an authorized prescriber must be in place. The school can only authorize medication administration and/or procedures based on the orders from a physician, not a parent. Since the initial state form was developed, the management of students with diabetes have increased, i.e. in both acute and chronic diagnoses. Thus, the State team has recognized the need to update the current School Diabetes order form. A draft form with revisions exists and will be finalized by a selected workgroup to facilitate the ease of use and communication of content by providers, school nurses, unlicensed staff (as provided by the delegating Registered Nurse), and parents/guardians. The chart below outlines the activities and timeline for updating/revising the current school order forms for school diabetes management.

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY 1</td>
<td>Schedule workgroup meeting to revise Diabetes School/Order Form</td>
<td>MSDE Local lead SHS program coordinator</td>
</tr>
<tr>
<td>FEBRUARY 2</td>
<td>Convene workgroup to complete diabetes school order form</td>
<td>MSDE Local lead SHS program coordinator</td>
</tr>
<tr>
<td>MARCH 3</td>
<td>Draft revised form available for feedback and comments 2/1/16</td>
<td>MSDE</td>
</tr>
<tr>
<td>APRIL 4</td>
<td>External Review (Send by 2/1/16)</td>
<td>Local Stakeholders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
<td>Week 4</td>
<td>Week 1</td>
<td>Week 2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**Proposed Time Frame**

<table>
<thead>
<tr>
<th>Completed:</th>
<th>In Progress:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Based on feedback from the Diabetes Stakeholder Group meeting on November 21, 2015, specific recommendations from one stakeholder group discussion regarding the school/order form were provided. Details of suggested revisions needed for the “Maryland State Management of Diabetes at School/Order Form” as discussed by the stakeholder group may include the following:

1. Mechanisms for making the form modifiable/customizable format
2. Improved usability of the form/streamline form, format for ease of updating without requiring entire new form
3. Pair use of the new form with training for nurses and school staff on diabetes management
4. Include information that incorporates advanced technology (e.g., pumps, continuous glucose monitoring)
5. Consider removing the examples in hyper/hypoglycemia management section
6. Improve clarity regarding use of range orders (e.g., insulin range, including insulin/carb ratios and correction factors, adjustments within range, clarity on writing of range orders to be written within an acceptable range for school nurses to follow, especially if school nurse may delegate to an unlicensed person.)
7. The order form should be modified so changes do not require an entirely new form.
8. Pair form with a communication process to facilitate process for notifying the school nurses of new orders/updates.
9. Simplification of glucagon orders (e.g., Prescribe 1 mg of glucagon for most students)
3. **Training for school health services staff** (e.g., RN, LPN, CNA, CMT)

Many health problems facing students today are both interrelated and preventable. Through coordinated school health programs, schools have the opportunity to help young people acquire the knowledge and skills necessary to make healthy choices. School nurses strengthen and facilitate the educational process by improving and protecting the health status of children and by identifying and assisting in the removal or modification of health related barriers to the learning process for individual children.

In Maryland, a variety of school health service delivery models have been developed to assure the health needs of children are met in the school setting. These models may include, but are not limited to, school systems that utilize the following nursing personnel to assure care to students.

- Registered Nurse (RN) only;
- A mix of RN and Licensed Practical Nurse (LPN);
- A mix of RN and Certified Nursing Assistant (CNA)/Certified Medication Technician (CMT); or
- A mix of RN, LPN, and CNA/CMT.

Regardless of the service delivery model, the registered nurse is always the leader of the school health nursing team. The registered nurse, the expert in nursing and health, makes the decisions about how care is provided and who provides the care to the child in the school system. As such, only the school registered nurse has the authority to use the title school nurse. All other health staff must be referred to by their title of LPN, CNA or Health Assistant (health technician, etc.). (Maryland Board of Nursing, 2004)

Professional development is important for all members of the school health services team to ensure all team members are up to date with scope of practice for professional conduct and attain ongoing knowledge and skills related to their specific discipline. School health services staff are encouraged to participate in ongoing continuing education programs, i.e. workshops, seminars, conferences, classes/courses, and certification of degree programs. The State team’s **goal** is to provide specific and intense training and education for school health services staff, specifically related to the care and management of diabetes in the school setting. The chart below outlines the activities and timeline for professional development and training for school health services staff statewide.

Training for school health services staff may include, but not limited to:

- Role of members of the SHS team;
- Role and standards, situations, or criteria for use of designated (unlicensed persons) to perform certain delegated nursing functions for student diabetes management
- Determine appropriate communication processes between SHS team members and parents, providers/unlicensed persons
- Address delegation of nursing functions including criteria for Delegation
- Training and education of unlicensed school staff to provide certain types of diabetes care
- Development and communication related to daily management needs, emergency care plans, and 504 plans

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY</td>
<td>Week 1</td>
<td>DHMH</td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td>MSDE</td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>Week 1</td>
<td>DHMH</td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td>MSDE</td>
</tr>
<tr>
<td>MARCH</td>
<td>Week 1</td>
<td>DHMH</td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td>MSDE</td>
</tr>
<tr>
<td>APRIL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JUNE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Develop content for training to SHS coordinators and managers

Identify trainers for March 3, 2016 training for SHS coordinators and managers (Maryland Board of Nursing and National Association of School Nurses (NASN))

Provide training to SHS coordinators and managers

Identify other appropriate training target groups and levels of training needed to carry out assigned or delegated tasks

Finalize training content for training SHS coordinators and managers

<table>
<thead>
<tr>
<th>Completed</th>
<th>In Progress</th>
<th>Proposed Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Frame</td>
<td>Activity</td>
<td>Responsible Agency</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>JANUARY</td>
<td>Explore options to offer “Helping Administer to the Needs of the Student with Diabetes in Schools” (H.A.N.D.S.) as developed by the National Association of School Nurses (NASN)</td>
<td>MSDE, DHMH, MBON, NASN</td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>Develop a regional training plan for school nurses</td>
<td>DHMH</td>
</tr>
<tr>
<td>MARCH</td>
<td>Develop regional training content for school nurses</td>
<td>MSDE, MBON, NASN</td>
</tr>
<tr>
<td>APRIL</td>
<td>Identify training team for regional training for school nurses</td>
<td>DHMH</td>
</tr>
<tr>
<td>MAY</td>
<td>Conduct regional professional development training for school nurses</td>
<td>DHMH</td>
</tr>
<tr>
<td>JUNE</td>
<td>Professional development for school nurses at the annual School Health Interdisciplinary Program (SHIP) Conference August 3-4, 2016 and specific school health training on August 5, 2016</td>
<td>MSDE, DHMH, UMB CSMH, NASN</td>
</tr>
</tbody>
</table>

**Completed**

**In Progress**

**Proposed Time Frame**
Based on feedback from the Diabetes Stakeholder Group meeting on November 21, 2015, specific recommendations from one stakeholder group discussion regarding the professional development and training needs of School health services staff (e.g., RN, LPN, CNA, CMT). Training may include the following:

- **Resources to provide funding support for training:**
  - PTA or state/local American Diabetes Association Chapter to sponsor H.A.N.D.S. training for local school nurses
  - Area hospitals to provide training
  - Nursing agencies to hire nurses to attend the event
  - DHMH Maternal Child Health Bureau and Office of Chronic Disease Prevention funding resources;
- **Appropriate expectations and use of range orders as written by authorized providers**;
- **Tools for diabetes management** (e.g., Standard forms related to student’s self-management of diabetes care in the school setting);
- **Checklist for skills/knowledge of the student and family related to ability for self-care**;
- **Having a parent or other trained personnel attend the field trip/event**;
- **Create uniformity in continuous glucose monitoring and insulin administration**; and
- **Mentoring programs for new nurses to navigate and learn from experienced school nurses about diabetes care and management in the school setting**
4. **Training and education for school staff (e.g., unlicensed persons)**

The goal of training and education for school staff is to equip them to provide an appropriate level of diabetes care when a nurse is not available. The training is aimed to begin to resolve local school system and parent concerns regarding local school health service program capacity issues when nurses are not available while also maintaining a high level of safety and quality for services provided. Training will be provided based on best practice recommendations reflected in the National Association of School Nurses (NASN) book entitled “*Principles for Practice: Nursing Delegation to Unlicensed Assistive Personnel in the School Setting.*” Through a partnership with the NASN, training on nursing delegation/training to unlicensed school staff will be provided to nursing leaders and to building level nurses. Initial training for nursing leaders will be provided by NASN and the Maryland Board of Nursing. The state school health services program will leverage available NASN resources to create an ongoing partnership to sustain continuing professional development of all school nurses to be equipped to train and monitor activities of any unlicensed school staff. Training of school health services nursing leaders will be provide during regularly scheduled meetings and training for building level nurses will be offered during the School Health Interdisciplinary Program conference (SHIP) August 4-5, 2016.

Training of local school health services nursing leaders will provide local school health services staff knowledge, skills and abilities to train unlicensed school staff to provide a limited scope of diabetes care necessary to facilitate and maintain full school and afterschool participation by students with diabetes. As the leader of the school health team in a school, school nurses will be empowered to through leadership training to provide appropriate oversight and monitoring of the full range of diabetes care provided in the school setting including care provided by unlicensed school staff. Unlicensed school staff will be accountable to the school nurse for their activities.

The training provided to unlicensed school staff will aim to provide safe and effective diabetes care in the school setting when needed and done while acknowledging the school nurse as the leader of the school health team. However, school nurses will have the option to provide alternative care arrangements other than the use of unlicensed school staff if according to nursing judgment a different level of care is needed than that able to be provided by an unlicensed school staff member. Assessment of staffing needs and decision making skills regarding education and training of unlicensed school staff will be conducted for school health services staff as described in #3 above.

The content of the training by nurses for unlicensed school staff will include but is not limited to:

1. General information regarding diabetes;
2. Recognition of symptoms of hypoglycemia and hyperglycemia;
3. Administering glucagon and other emergency medication interventions consistent with the Maryland Nurse Practice Act Criteria for Delegation and/or training and education principles;
4. Strategies to effectively incorporate differences with independence of care and management of diabetic students in elementary, middle, or high school;
5. Strategies for hypoglycemia prevention (e.g., strategic placement of snacks and emergency medications);
6. Details regarding length and frequency of training including refresher training;
7. Specification of who can be designated and trained as an unlicensed person providing diabetes care (e.g., Teachers/administrators, bus drivers);
8. Specifications for communication of emergency care plans and providing training to substitute teachers and substitute nurses; and
9. Administration of insulin in accordance with health care provider orders when necessary if a nurse is not available.

<table>
<thead>
<tr>
<th>Time Frame Activity</th>
<th>Responsible Agency</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review local practice regarding training unlicensed persons to provide diabetes care</td>
<td>DHMH</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Identify appropriate training target groups</td>
<td>MSDE, DHMH, Local SHSs coordinators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DHMH Identifies appropriate training target groups: Teachers/administrators, bus drivers; SHSs coordinators.
<table>
<thead>
<tr>
<th>Time Frame Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify policy from other states regarding training unlicensed staff providing diabetes care</td>
<td>DHMH</td>
</tr>
<tr>
<td>Review policy options related to tasks able to be provided by unlicensed persons with local school health coordinators and the Maryland Board of Nursing</td>
<td>DHMH, MSDE, MBON, Local SHS Coordinators</td>
</tr>
<tr>
<td>Develop policy matrix to compare policy options for training of unlicensed school staff providing diabetes care</td>
<td>DHMH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

**Completed**

**In Progress**

**Proposed Time Frame**
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Identify existing best practice training materials appropriate to train unlicensed persons to provide diabetes care</td>
<td>DHMH</td>
</tr>
<tr>
<td></td>
<td>Develop or modify materials for training that are appropriate for training lay audiences to provide diabetes care (if needed)</td>
<td>MSDE</td>
</tr>
<tr>
<td></td>
<td>Identify current delegation practices of local school health services programs to determine training needs for unlicensed school staff</td>
<td>DHMH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>Identify existing best practice training materials appropriate to train unlicensed persons to provide diabetes care</td>
<td>DHMH</td>
</tr>
<tr>
<td>March</td>
<td>Identify current delegation practices of local school health services programs to determine training needs for unlicensed school staff</td>
<td>DHMH</td>
</tr>
<tr>
<td>April</td>
<td>Develop or modify materials for training that are appropriate for training lay audiences to provide diabetes care (if needed)</td>
<td>MSDE</td>
</tr>
<tr>
<td>May</td>
<td>Identify existing best practice training materials appropriate to train unlicensed persons to provide diabetes care</td>
<td>DHMH</td>
</tr>
<tr>
<td>June</td>
<td>Identify current delegation practices of local school health services programs to determine training needs for unlicensed school staff</td>
<td>DHMH</td>
</tr>
<tr>
<td>July</td>
<td>Develop or modify materials for training that are appropriate for training lay audiences to provide diabetes care (if needed)</td>
<td>MSDE</td>
</tr>
<tr>
<td>August</td>
<td>Identify existing best practice training materials appropriate to train unlicensed persons to provide diabetes care</td>
<td>DHMH</td>
</tr>
<tr>
<td>Time Frame</td>
<td>Activity</td>
<td>Responsible Agency</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Review local policy related to use of unlicensed persons vs. RN to provide diabetes care during field trips</td>
<td>DHMH</td>
</tr>
<tr>
<td></td>
<td>Identify appropriate persons to provide training to local school health services leaders to equip them to train unlicensed school staff</td>
<td>DHMH</td>
</tr>
<tr>
<td></td>
<td>Develop content for training to local school health services leaders in collaboration with identified trainers</td>
<td>DHMH, MSDE, MBON, NASN</td>
</tr>
<tr>
<td>Time Frame</td>
<td>Activity</td>
<td>Responsible Agency</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Activity</td>
<td>Provide training to local school health services leaders (i.e., school health services coordinators, supervisors and managers) to equip them to train unlicensed school staff</td>
<td>MBON NASN</td>
</tr>
<tr>
<td></td>
<td>Determine technical assistance needs of local school health services leaders regarding policy and training for unlicensed school staff</td>
<td>MSDE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

- **Completed**: If needed
- **In Progress**: 03/03/2016
- **Proposed Time Frame**: If needed
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Responsible Agency</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
<td>Week 4</td>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
<td>Week 4</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Develop training content and materials for unlicensed school staff</td>
<td>MSDE DHMH MBON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide technical assistance to local school health services leaders for planning training to building level nurses</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide training to building level nurses regarding training unlicensed school staff</td>
<td>DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide training for volunteers/designated school staff to provide diabetes care (ongoing once initiated)</td>
<td>DHMH MSDE Local SHS Coordinators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Completed</th>
<th>In Progress</th>
<th>Proposed Time Frame</th>
</tr>
</thead>
</table>
5. **Training school staff regarding educational supports**

Students with diabetes may require educational supports resulting from having diabetes. Adjustments in meals, meal schedules, physical activity and medication administration processes should be implemented to maximize diabetes control and minimize disruption to the learning process/school experience. To achieve this, formal or informal academic accommodations may be required.

Federal legislation supports and protects the rights of students with chronic conditions and disabilities to access free appropriate public education (FAPE) in the least restrictive environment. Specifically, the Individuals with Disabilities Education Improvement Act of 2004 (IDEA), 20 U.S.C. §1400, et seq and Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794 (Section 504) include provisions for addressing health needs of students that affect their education. Schools have a legal responsibility to provide certain school nursing services when such supportive services are necessary in order for students to access and benefit from their educational program.

To provide effective educational supports, school staff and parents should be aware of the types of accommodations most helpful or effective in meeting the educational needs of students with diabetes in general and for each student specifically. Effective communication regarding the necessary accommodations for students with diabetes requires each member of the school’s 504 plan team and the school health services team to be knowledgeable of the impact of diabetes on learning and on the school experience. Training of school staff and parents is a mechanism to increase knowledge and awareness of school accommodation policy and procedures and effective 504 strategies.

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Responsible Agency</th>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE JULY AUGUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td></td>
<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
<td>Week 4</td>
<td>Week 1</td>
<td>Week 2</td>
</tr>
<tr>
<td>Evaluate current training for school staff regarding educational supports for students with chronic conditions including diabetes</td>
<td>MSDE</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

20
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY</td>
<td>Week 1</td>
<td>MSDE</td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 4</td>
<td></td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>Week 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 4</td>
<td></td>
</tr>
<tr>
<td>MARCH</td>
<td>Week 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 4</td>
<td></td>
</tr>
<tr>
<td>APRIL</td>
<td>Week 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 4</td>
<td></td>
</tr>
<tr>
<td>MAY</td>
<td>Week 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 4</td>
<td></td>
</tr>
<tr>
<td>JUNE</td>
<td>Week 1</td>
<td></td>
</tr>
<tr>
<td>JULY</td>
<td>Week 2</td>
<td></td>
</tr>
<tr>
<td>AUGUST</td>
<td>Week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week 4</td>
<td></td>
</tr>
</tbody>
</table>

- Identify available 504 plan templates available and/or in use in other states and among Maryland jurisdictions
- Convene workgroup (volunteers from stakeholder meeting) to review available diabetes 504 plan template
- Identify best practice in 504 plan elements for students with diabetes
- Revise current diabetes 504 plan template based on results of review
- Identify models for parent training on advocating for students in school—504 plans and IHPs
- Develop training for parents and teachers on appropriate 504 plan content based on successful model programs

- Completed
- In Progress
- Proposed Time Frame
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY</td>
<td>Identify resources to develop and sustain training for school staff and parents regarding 504 plan development and implementation</td>
<td>MSDE, DHMH</td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>Explore resources within MSDE to facilitate/support, train, etc. mechanisms to increase accountability related to implementation and compliance with 504 plans.</td>
<td>MSDE</td>
</tr>
</tbody>
</table>

- **Completed**:
- **In Progress**:
- **Proposed Time Frame**
Training school staff regarding educational supports (Part II)

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
<th>SEPTEMBER</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>DECEMBER</th>
<th>JANUARY 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Identify</td>
<td>effective training methods/mechanisms (e.g., in person, on-line, etc.)</td>
<td>MSDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methods/mechanisms</td>
<td>to train school staff and parents regarding educational supports for students with diabetes including 504 plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify</td>
<td>appropriate persons to conduct training for school staff and parents</td>
<td>MSDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>appropriate</td>
<td>regarding educational supports for students with diabetes including 504</td>
<td>DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>persons</td>
<td>plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implement</td>
<td>training for teachers</td>
<td>MSDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>training for</td>
<td>Local schools/school health programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implement</td>
<td>training for parents and other school staff</td>
<td>MSDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>training for</td>
<td>Local schools/school health programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parents and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exact timing will vary by jurisdiction based on available professional development days for teachers.

Exact timing will vary by jurisdiction based on available staff and training opportunities.
6. School Health Services Program administration/accountability

Md. Education Code Ann. § 7-401 requires the Maryland State Department of Education and the Department of Health and Mental Hygiene to jointly Development public standards and guidelines, offer assistance to the county boards and county health departments in their implementation, and convene meetings of the school health services coordinators. Additionally, the school health services standards contained in COMAR 13A.05.05-.15 state MSDE and DHMH shall jointly develop, in collaboration with local boards of education and local health departments, a monitoring and evaluation component for school health programs that may include on-site reviews. To carry out these requirements, MSDE and DHMH jointly convene a school health services practice committee to develop the guidelines and convenes meetings of the school health services coordinators on a quarterly basis while school is in session. In addition, the Maryland State School Health Council serves as an advisory body to both MSDE and DHMH. Recommendations from the stakeholder meeting convened on November 21, 2015 included a recommendation for an advisory board to address issues specifically related to school diabetes management.

Information obtained during the November 21, 2015 stakeholder meeting highlighted local school health services program barriers and challenges to proving diabetes management. The group identified how these challenges and barriers result in inconsistent application of state policy and regulation related to school diabetes management services. DHMH and MSDE will work to address these barriers through improvements in program monitoring and program evaluation processes at the state and local levels. DHMH and MSDE will evaluate current school health services oversight and monitoring processes, assess current school health services administrative processes and develop process for ongoing quality improvement (QI) activities related to diabetes management. These activities will be implemented in a manner that allows DHMH and MSDE to better identify counties most in need of assistance and support and provide assistance in a timely and effective manner.

Enhanced data collection/reporting processes will be an integral part of expanded state level program monitoring activities. DHMH and MSDE will continue to review effective and feasible mechanisms to collect school health services data and use the data for program improvements. Communication with local programs and school health services leadership at the local level will be enhanced to develop a system of accountability to DHMH and MSDE regarding program implementation standards. This may be accomplished through the Annual Certification of School Health Services Standards, development and implementation of self-assessment tools based on the standards, and school health services administrative meetings. DHMH and MSDE aims to implement new administrative processes June 30, 2016.
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Establish and implement an ongoing process to engage school diabetes management stakeholders</td>
<td>MSDE DHMH</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conduct internal DHMH and MSDE review of current school health services program monitoring and evaluation processes</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluate current school health services policy/guidelines development processes to determine the need for a school diabetes management advisory group</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assess current school health services administrative processes</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify the best administrative process/program structure for engaging new stakeholders in advisory capacity to address school diabetes management issues</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify stakeholders (from November stakeholder meeting) interested in participating in an advisory group or in other advisory capacity</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Completed</th>
<th>In Progress</th>
<th>Proposed Time Frame</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Activity</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Develop process for ongoing QI activities to include data collection/reporting</td>
<td>DHMH MSDE</td>
</tr>
<tr>
<td></td>
<td>Identify additional subject matter experts to advise the state and local school health services programs regarding diabetes management</td>
<td>DHMH MSDE</td>
</tr>
<tr>
<td></td>
<td>Develop content for new state program administrative processes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implement new state level program monitoring and administrative processes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completed**

**In Progress**

**Proposed Time Frame**
7. Engage with nonpublic schools

By law, MSDE and DHMH have responsibility to provide assistance, including monitoring and evaluation, to the local school health services programs. In August 1998, the Maryland State Department of Education Nonpublic Schools Workgroup was initiated by former State Superintendent, Nancy Grasmick, to provide an organized forum for addressing issues of mutual interest to Maryland's public and nonpublic school communities. Members of the Nonpublic Schools Workgroup include representatives from each local public school system in Maryland, appointed by their local superintendents, and representatives of the Maryland Council for American Private Education and other nonpublic school associations in Maryland. The Workgroup is coordinated through the Office of the State Superintendent, Division of Student, Family, and School Support, and the Division of Certification and Accreditation. A public and nonpublic school representative chosen by the group’s members serves as co-chairs for three-year terms. The Nonpublic Schools Workgroup meets three times per year at the Maryland State Department of Education headquarters in Baltimore, Maryland. MSDE and DHMH will continue to work with nonpublic schools’ administrators and provide school health informational updates from the work with public schools according to usual procedures.

Based on feedback from the Diabetes Stakeholder Group meeting on November 21, 2015, the group felt it is important to engage nonpublic schools. The chart below outlines the activities and timeline for engaging nonpublic schools.

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>JANUARY</td>
</tr>
<tr>
<td>Attend the Maryland State Department of Education Nonpublic Schools quarterly Workgroup meetings</td>
<td>MSDE</td>
</tr>
<tr>
<td>Share tools and materials related to school health and diabetes management in the school setting (ongoing and continuous activity)</td>
<td>MSDE</td>
</tr>
</tbody>
</table>

Completed: [ ]
In Progress: [ ]
Proposed Time Frame: [ ]
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Responsible Agency</th>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td></td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
<td>Week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3</td>
<td>1 2 3</td>
<td>1 2</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Share Resources list via Workgroup and MSDE’s Nonpublic Schools Branch (ongoing and continuous activity)</td>
<td>MSDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invite nonpublic school nurses to statewide professional development activities (ongoing and continuous activity)</td>
<td>MSDE DHMH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B
Management of Diabetes in Schools: Maryland School Health Services Guideline
MANAGEMENT OF DIABETES IN SCHOOLS

MARYLAND STATE SCHOOL HEALTH SERVICES GUIDELINE

____________ 2016

DRAFT V8b
11/16/2016

Maryland State Department of Education
Student Services and Strategic Planning Branch
200 West Baltimore Street
Baltimore, Maryland 21201
Phone: 410-767-0311
TTY/TDD: 410-333-6442

Maryland Department of Health and Mental Hygiene
Office of School Health
201 West Preston Street
Baltimore, Maryland 21201
Phone: 1-877-463-3464
TTY/TDD: 1-800-735-2258

DRAFT not for distribution
## MARYLAND SCHOOL HEALTH SERVICES PRACTICE ISSUES COMMITTEE (2016-2017)

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isha Alston, RN, MSN</td>
<td>Deputy Director, Bureau of School Health and Support, Anne Arundel County Department of Health</td>
</tr>
<tr>
<td>Karen Bates, RN, BSN, MS</td>
<td>Nursing Supervisor, School Health Policy, Services and Innovation, Prince George's County Public Schools</td>
</tr>
<tr>
<td>Karen Siska Creel, RN, MSN</td>
<td>Director of Nursing, Bureau of School Health and Support, Anne Arundel County Department of Health</td>
</tr>
<tr>
<td>Cheryl Duncan De Pinto, MD, MPH</td>
<td>(Committee Co-Chair), Medical Director, Office of Population Health Improvement, Maryland Department of Health and Mental Hygiene</td>
</tr>
<tr>
<td>Jacqueline Dougé, MD, MPH</td>
<td>Medical Director, Bureau of Child Health, Howard County Health Department</td>
</tr>
<tr>
<td>Filipa Gomes, RN, MSN</td>
<td>Supervisor of Health Services, Carroll County Public Schools</td>
</tr>
<tr>
<td>Marilyn Healy, RN, NCSN</td>
<td>Supervisor, Office of Health Services, Baltimore County Public Schools</td>
</tr>
<tr>
<td>Christine Knode, RN, BSN, NCSN</td>
<td>Supervisor of Student Services/School Health, Calvert County Public Schools</td>
</tr>
<tr>
<td>Tammatha Metcalf, MSN, RN, NCSN</td>
<td>School Nurse, St. Mary’s County Public Schools</td>
</tr>
<tr>
<td>Alicia Mezu, MSN/Ed, BSN, BSc, RN</td>
<td>(Committee Co-Chair), Health Services Specialist, Maryland State Department of Education</td>
</tr>
<tr>
<td>Mary Nasuta, RN, BSN, MS, NCSN</td>
<td>Nurse Coordinator, Harford County Public Schools</td>
</tr>
<tr>
<td>Barbara Obst, RN, MS</td>
<td>SHNIC Program Coordinator, Kennedy Krieger Institute</td>
</tr>
<tr>
<td>Diane Pellegrino, RN, BSN</td>
<td>Health Services Coordinator, Wicomico County Board of Education</td>
</tr>
<tr>
<td>Michal Thornton, RN, BSN</td>
<td>Community Health Nurse Supervisor, Bureau of School Health, Baltimore City Health Department</td>
</tr>
<tr>
<td>Kerrie Wagaman, MSN, BSN, RN, NCSN</td>
<td>Coordinator of Health Services, Howard County Public Schools</td>
</tr>
</tbody>
</table>
# External Contributors and Reviewers (2016)

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kimber-Lee Abel, RN, CDE, CPN</td>
<td>Diabetes Nurse Educator</td>
<td>Johns Hopkins Pediatric Endocrinology</td>
</tr>
<tr>
<td>Tara Keene-Abramovitz</td>
<td>Parent</td>
<td></td>
</tr>
<tr>
<td>Kristy Anderson, Esq.</td>
<td>General Counsel</td>
<td>Maryland State Education Association</td>
</tr>
<tr>
<td>Christina Backe, MA</td>
<td>School Health Services Program Coordinator</td>
<td>Department of Health and Mental Hygiene</td>
</tr>
<tr>
<td>Sara Booker, MPH, RD</td>
<td>Office of School &amp; Community Nutrition Programs</td>
<td>Maryland State Department of Education</td>
</tr>
<tr>
<td>Wendy Chermak</td>
<td>Section 504 Resource PPW</td>
<td>Anne Arundel County Public Schools</td>
</tr>
<tr>
<td>Loretta Clark, RN, CDE</td>
<td>Diabetes Nurse Educator</td>
<td>Johns Hopkins Pediatric Endocrinology</td>
</tr>
<tr>
<td>Debra Counts, M.D.</td>
<td>Associate Chair, Department of Pediatrics</td>
<td>Chief, Pediatric Endocrinology</td>
</tr>
<tr>
<td>Mary Kay DeMarco, PhD, RN, CNE</td>
<td>Nursing Program Director</td>
<td>The Community College of Baltimore County</td>
</tr>
<tr>
<td>Shirley Devaris, RN, BSAD, MA, JD</td>
<td>Director of Legislation</td>
<td>Maryland Board of Nursing</td>
</tr>
<tr>
<td>Malinda Duke, CPNP, CDE</td>
<td>Pediatric Nurse Practitioner and Certified Diabetes Educator</td>
<td>Center for Diabetes and Endocrinology</td>
</tr>
<tr>
<td>Elizabeth Elliott, RN, CDE, MSN</td>
<td>Nurse Manager</td>
<td>School Health Services</td>
</tr>
<tr>
<td>Robyn Elliott, MHA</td>
<td>Consultant</td>
<td>Maryland Nurses Association</td>
</tr>
<tr>
<td>Sara Fitzgerald, MS, RN, CDE</td>
<td>Pediatric Diabetes Nurse Educator</td>
<td>Center for Diabetes and Endocrinology</td>
</tr>
<tr>
<td>Joan Glick, CRNP, MSN</td>
<td>Senior Administrator</td>
<td>School Health Services</td>
</tr>
<tr>
<td>Mary Kay Goetter, PhD, RN, NEA-BC</td>
<td>Executive Director (former)</td>
<td>Maryland Board of Nursing</td>
</tr>
<tr>
<td>Linda Grossman, MD</td>
<td>Chief, Bureau of Clinical Services</td>
<td>Baltimore County Department of Health</td>
</tr>
<tr>
<td>Celia Henderson, RN, CDE, CPT, CDTC</td>
<td>Diabetes Educator/Pump Trainer</td>
<td>Children’s National Health System</td>
</tr>
<tr>
<td>Crystal Jackson, BA</td>
<td>Director, Safe at School</td>
<td>American Diabetes Association</td>
</tr>
</tbody>
</table>
Ivonne Jaime-Birmingham, MA
Parent

Amy Kulp, MS
Parent

Keisha Major, RN, MSN-Ed
Nurse Manager
Office of School Health
Prince George's County Public Schools

Barbara Masiulis, MS, CRNP
Supervisor, Office of Health Services
Baltimore County Public Schools

Nancy Mattucci, MSN, RN
Supervisor, Office of Health Services
Baltimore County Public Schools

Mindy McCartin, RN, MSN
Nurse Administrator
School Health Service
Montgomery County Department of Health and Human Services

Tracey Naylon, BS, MA
Special Education Resource Teacher and Parent

Lisa Rasbach, PhD, CPNP, BC-Adm
Nurse Practitioner
Johns Hopkins Pediatric Endocrinology

Barry Reiner, MD
Pediatric Endocrinologist
Private Practice

Brenda Russo, RN, BSN, MBA
Nurse Administrator
Montgomery County Department of Health and Human Services

Megan Roesler, BSN, CPN
SHNIC Registered Nurse
Kennedy Krieger Institute

Renee Spence
Executive Director
Public School Superintendents Association of Maryland

Jennifer Sumbilla Anisko, MSN, CRNP
Pediatric Nurse Practitioner
Center for Diabetes and Endocrinology
University of Maryland Medical Center, Midtown

Andrea Troutner, RD, LD, LDN, CDE
State Policy Representative
Maryland Academy of Nutrition & Dietetics

Jane Turek, MSN, BSN, CDE
Professional Practice Specialist, Clinical Instructor
Children’s National Health System

Jennifer Waters, MSN, RN
Health Services Specialist
Frederick County Public Schools

John Woolums, Esq.
Director of Governmental Relations
Maryland Association of Boards of Education
FOREWORD

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 and Mental Hygiene (DHMH) 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 DHMH 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 and Mental Hygiene 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.
# TABLE OF CONTENTS

MARYLAND SCHOOL HEALTH SERVICES PRACTICE ISSUES COMMITTEE (2016-2017)......................................................... i
SCHOOL HEALTH SERVICES DIABETES GUIDELINE EXTERNAL CONTRIBUTORS AND REVIEWERS (2016)................................................................. ii
FOREWORD ........................................................................................................................................ iv
APPLICABLE LEGAL AUTHORITIES ................................................................................................................ viii
EXECUTIVE SUMMARY .............................................................................................................................. ix

SECTION I: BACKGROUND ................................................................................................................................. 1
INTRODUCTION ........................................................................................................................................... 1
PURPOSE ....................................................................................................................................................... 2

SECTION II: MANAGEMENT OF DIABETES ........................................................................................................... 3
DEFINITION OF DIABETES ............................................................................................................................... 3
ROUTINE DIABETES MANAGEMENT .............................................................................................................. 3
BLOOD GLUCOSE MONITORING .................................................................................................................... 3
CONTINUOUS GLUCOSE MONITORING (CGM) ............................................................................................. 4
ADDITIONAL INFORMATION FOR STUDENT WITH CGM ............................................................................ 5
KETONE MONITORING .................................................................................................................................. 5
CLINICAL LABORATORIES IMPROVEMENT ACT REQUIREMENTS ...................................................................... 6
INSULIN ADMINISTRATION .......................................................................................................................... 6
INSULIN PUMP MANAGEMENT ................................................................................................................... 6
SELF-MANAGEMENT .................................................................................................................................... 7

SECTION III: RECOGNITION AND MANAGEMENT OF HYPOGLYCEMIA AND HYPERGLYCEMIA ................................................................. 8
MANAGEMENT OF HYPOGLYCEMIA ............................................................................................................... 8
MILD OR MODERATE HYPOGLYCEMIA .......................................................................................................... 9
SEVERE HYPOGLYCEMIA ............................................................................................................................. 9
MANAGEMENT OF HYPERGLYCEMIA ............................................................................................................ 11

SECTION IV: THE NURSING PROCESS RELATED TO STUDENTS WITH DIABETES .......................................... 14
THE NURSING APPRAISAL .......................................................................................................................... 14
INFORMATION SOURCES TO GUIDE THE NURSING APPRAISAL ................................................................. 14
THE NURSING ASSESSMENT .......................................................................................................................... 14
IDENTIFYING INFORMATION/CONTACT INFORMATION ............................................................................ 15
APPENDIX B: Management of Hyperglycemia................................................................. 51
APPENDIX C: Sample Diabetes Self-Management Skills Assessment Checklist.......................... 53
APPENDIX D: Maryland Diabetes Medical Management Plan/Health Care Provider Order Form .... 56
APPENDIX E: Content Standards for Training Unlicensed School Staff..................................... 60
APPENDIX F: 504 Plan Brochure......................................................................................... 100
APPLICABLE LEGAL AUTHORITIES

Americans with Disabilities Act of 1990, As Amended (ADA)
https://www.ada.gov/pubs/adastatute08.pdf

Family Educational Rights and Privacy Act (FERPA)

Individuals with Disabilities Education Improvement Act (IDEIA)
http://idea.ed.gov/download/statute.html

Section 504 of the Rehabilitation Act of 1973
http://www2.ed.gov/about/offices/list/ocr/504faq.html

Annotated Code of Maryland, Education Article § 7-401
School health program

Annotated Code of Maryland, Education Article § 7-426.4
Public Schools - Administration of Diabetes Care Services – Guidelines

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

Maryland Nurse Practice Act – Regulations
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

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 participate fully 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 the 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 care plan, emergency plan, school staff training, and educational supports for the student with diabetes. Planning for diabetes care in the school setting requires a team approach with the school nurse as the leader of the team. 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.

Implementation of the Guideline 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. 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. The Guideline outlines processes for routine diabetes management, including blood glucose and ketone monitoring, insulin administration, insulin pump management, student self-management, and general principles for addressing hyper- and hypoglycemia.

The nursing appraisal and the nursing assessment form the basis upon which individualized health care plans and emergency plans are developed by the school nurse. The content of these nursing tasks are outlined in the Guideline. Based on nursing judgment, the school nurse may delegate certain diabetes care tasks. The Maryland Nurse Practice Act 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 a CMT as a routine part of their job, and the term “trained” is used for authorizing tasks to be performed by an unlicensed school staff member who does not routinely perform the task(s). The decision as to whether the student’s healthcare needs can be met by delegation to other school health services staff (e.g., CMT, CNA) or by training and education of an unlicensed individual (e.g., teacher, coach, other school staff member) is made using the criteria for delegation outlined in the Maryland Nurse Practice Act, 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, 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 student’s needs to the school health services coordinator, or manager, and the 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, another school health services staff member, or trained school staff member 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 may not 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 to meet 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. The school nurse, a substitute nurse or a trained school staff member 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 may not be required to participate in/attend a school-sponsored event or field trip 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 504 plan team. If a student with diabetes qualifies for special education services, an Individual Education Program (IEP) may also include specific accommodations. The school nurse should work with the school administration to implement any accommodations required as determined by the 504 plan team. The school nurse, in collaboration with the school administrator, parents, and healthcare provider may recommend to the 504 plan team any accommodations needed during a field trip/school-sponsored activity. An informational brochure is included in the Guideline to assist schools in the development of appropriate 504 plans for students with diabetes. These common accommodations are designed to maximize the student’s ability to participate fully in school. 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 504 plan should change accordingly.

The Guideline stress that diabetes care is provided according to the student’s 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. The school nurse 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. Each team member has a set of
responsibilities for the care of the student. The responsibilities of parents/guardians, students, schools, school administrator, and school staff are outlined in the Guideline.

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

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. The care of diabetes involves significant daily attention to blood glucose monitoring, medication administration, food intake and physical activity in order to maintain a healthy active lifestyle. All students have the right to participate fully 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 the medical condition. 1, 2, 3 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), the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, 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 care for students with diabetes including development of an individualized care plan, emergency plan, school staff training, and educational supports for the student with diabetes.

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. Keeping students with diabetes safe in school also requires procedures for rapid recognition and treatment of hypoglycemia and hyperglycemia. This requires the development of diabetes management plans and emergency plans and may also require non-medical personnel to provide certain diabetes management care, when appropriate, in accordance with this Guideline as required by Annotated Code of Maryland, Education Article § 7-426.4.4

Planning for diabetes care in the school setting requires a team approach with the school nurse as the leader of the team. 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.

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 care 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

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 are able to fully 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 care plans, 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

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 multiple administrations of insulin daily 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, 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

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 required student 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 healthcare 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 healthcare 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 is able to 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 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;
- The student is capable of 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/tissue 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, a backpack, or a purse. The CGM is a useful tool for identifying 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.5

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, treatment decisions and diabetes care plan adjustments should not be based solely on CGM results. Future approval by the Federal Drug Administration of CGM uses for management decisions will require the school nurse to discuss this indication 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. For low alarms, the school nurse or trained school staff member should verify the student has performed a finger stick blood glucose in the classroom. If the student is not able to perform the finger stick independently, a trained school staff member 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 parents/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. Treat the student for hypoglycemia, if needed, as prescribed in the student’s DMMP/health care provider orders.

ADDITIONAL INFORMATION FOR STUDENT WITH CGM

The following additional information and actions should be considered and implemented for students utilizing a CGM:

- Confirm CGM results with blood glucose meter check before taking action on the sensor reading. If student has signs or symptoms of hypoglycemia, check finger stick blood glucose level regardless of CGM;
- Insulin injections should be given at least three inches away from the CGM insertion site;
- Do not disconnect from CGM for sports activities;
- If the adhesive is peeling, reinforce with approved medical tape;
- If the CGM becomes dislodged, return everything to the parents/guardian. 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 is timelier, cost may prohibit some students from using blood ketone monitoring. It is important to take this into consideration when using urine ketone test strips.

**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. 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 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 member. 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. It may be necessary to require insulin be administered in the health suite. 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, healthcare 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.

**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 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 (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, 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**

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. This may require new orders from their health care provider and reflected on their IHPs. 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 is when the blood glucose level is abnormally low, usually below 70 mg/dl. 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

<table>
<thead>
<tr>
<th>CAUSES OF HYPOGLYCEMIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess insulin</td>
</tr>
<tr>
<td>Delayed or skipped meals or snacks</td>
</tr>
<tr>
<td>Insufficient carbohydrate intake</td>
</tr>
<tr>
<td>Increased, intense or unplanned exercise or physical activity</td>
</tr>
<tr>
<td>Illness, especially gastrointestinal illness</td>
</tr>
</tbody>
</table>

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.

Table 2

<table>
<thead>
<tr>
<th>ORGAN SYSTEM</th>
<th>MILD/MODERATE SIGN(S)/SYMPTOM(S)</th>
<th>SEVERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouth/Throat</td>
<td>Blurred vision</td>
<td>Inability to swallow</td>
</tr>
<tr>
<td>Nose/Eyes/Ears</td>
<td>Sweating; pallor</td>
<td></td>
</tr>
<tr>
<td>Heart</td>
<td>Dizziness; palpitation; lightheadedness</td>
<td></td>
</tr>
<tr>
<td>Mental</td>
<td>Drowsiness; anxiety/nervousness; restlessness; depressed mood; irritability; confusion/dysorientation; unsteady/uncoordinated movement; inability to concentrate; abnormal behavior/changed personality</td>
<td></td>
</tr>
<tr>
<td>Neurologic</td>
<td>Dizziness; tremor/shakiness; slurred speech; tingling in the hands, feet, lips, or tongue; headache; blurred vision; weakness; lethargy</td>
<td>Seizures; Unconsciousness; Unresponsive</td>
</tr>
<tr>
<td>Other</td>
<td>Hunger</td>
<td>Death</td>
</tr>
</tbody>
</table>

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 care plan.
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 or training and instruction to a designated unlicensed school staff member may be required to ensure a rapid response to hypoglycemia.

**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 care plan (IHP). When a student is having symptoms or reports hypoglycemia, immediately administer rapid-acting sugar (see examples in Table 3) according to the students DMMP/health care provider orders.

<table>
<thead>
<tr>
<th>Examples of Rapid-Acting Sugar (for approximately 15 grams of sugar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% fruit juice</td>
</tr>
<tr>
<td>Regular (not diet) soda</td>
</tr>
</tbody>
</table>
| Easily chewable candy | • 2-3 rolls of Smarties®
                           • 10 Sweet Tarts®
                           • 15 Skittles®
                           • 15 jelly beans |
| Cake decorating gel | 3 teaspoons (1 Tablespoon) |
| Table sugar | • 2 Tablespoons
              • 4 packets |
| Glucose Tabs | 3-4 tabs |
| Insta-Glucose® or similar product | Based on instructions |

It is important that the student consume a meal or snack after providing rapid acting sugar to prevent a return of hypoglycemia and hypoglycemia symptoms. After treating for hypoglycemia, it is important to continue monitoring blood glucose according to the student’s DMMP/health care provider orders.

**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. In addition, since glucagon is an emergency medication, glucagon may be administered by unlicensed school staff designated and trained to do so.
Dosing and formulations of glucagon are contained in Table 4 as a reference. Each instance of glucagon administration should be done in the dosage and route prescribed by the student’s DMMP/health care provider orders.

### Table 4

<table>
<thead>
<tr>
<th>Dosing Category</th>
<th>Weight</th>
<th>Glucagon Dosage and Administration</th>
<th>Device Formulation/Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older Child (&gt;6 years of age) and Adult</td>
<td>Greater than 44 lbs. (20 kg)</td>
<td>1.0 mg (1.0 unit) subcutaneous, intramuscular&lt;br&gt;May repeat in 15 minutes if necessary</td>
<td>• Glucagon Kit®&lt;br&gt;• GLucaGen HypoKit®</td>
</tr>
<tr>
<td>Younger Child (&lt;6 years of age)</td>
<td>Less than 44 lbs. (20 kg)</td>
<td>0.5 mg (0.5 unit) subcutaneous, intramuscular&lt;br&gt;Equal to: ½ adult dose of Glucagon&lt;br&gt;May repeat in 15 minutes if necessary</td>
<td>• Glucagon Kit®&lt;br&gt;• GLucaGen HypoKit®</td>
</tr>
</tbody>
</table>

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 rapid 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. See Appendix A for 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. ¹³ Follow EMS instructions;
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;

**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.
7. Place student in recovery position (Note--after receiving glucagon a student may vomit. Observe and monitor to avoid choking if student vomits);

8. When the student responds, give supplemental carbohydrate according to student’s emergency plan;

9. Loosen restrictive clothing. Give nothing by mouth except as ordered by an authorized prescriber as part of an emergency plan to treat hypoglycemia;

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. In rare cases, DKA may occur with a blood glucose level <200-250 mg/dl. 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. 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.
Table 5

**CAUSES OF HYPERGLYCEMIA**

<table>
<thead>
<tr>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient insulin</td>
<td>(e.g., under treatment, non-compliance)</td>
</tr>
<tr>
<td>Illness</td>
<td></td>
</tr>
<tr>
<td>Inadequate glucose lowering medication</td>
<td></td>
</tr>
<tr>
<td>Decreased physical activity</td>
<td></td>
</tr>
<tr>
<td>Medications (e.g., corticosteroids)</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td></td>
</tr>
<tr>
<td>Injury</td>
<td></td>
</tr>
<tr>
<td>Severe emotional or physical stress</td>
<td></td>
</tr>
<tr>
<td>Insulin pump malfunction</td>
<td></td>
</tr>
<tr>
<td>Drugs (e.g., cocaine)</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
</tr>
</tbody>
</table>

Signs and symptoms of hyperglycemia are contained in Table 6.

Table 6

**SIGNS AND SYMPTOMS OF HYPERGLYCEMIA**

<table>
<thead>
<tr>
<th>Organ System</th>
<th>Mild/Moderate Sign(s)/Symptom(s)</th>
<th>Severe/Emergency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouth/Throat</td>
<td>Dry mouth; increased thirst</td>
<td>Dry mouth, extreme thirst, dehydration; fruity smelling breath</td>
</tr>
<tr>
<td>Nose/Eyes/Ears</td>
<td>Blurred vision</td>
<td></td>
</tr>
<tr>
<td>GI</td>
<td>Change in appetite; nausea</td>
<td>Nausea; vomiting; severe abdominal pain</td>
</tr>
<tr>
<td>Lung</td>
<td></td>
<td>Heavy breathing; shortness of breath; rapid breathing</td>
</tr>
<tr>
<td>Heart</td>
<td></td>
<td>Chest pain</td>
</tr>
<tr>
<td>Mental</td>
<td></td>
<td>Sleepiness; lethargy; depressed consciousness</td>
</tr>
<tr>
<td>Kidney</td>
<td>Frequent or increased urination</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Fatigue</td>
<td></td>
</tr>
</tbody>
</table>

Management of hyperglycemia requires insulin, fluids and treatment of the underlying cause. 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.
For hyperglycemia, the school nurse or other designated school staff should follow the student’s DMMP/health care provider orders. In general, hyperglycemia should be managed as outlined below. See Appendix B for a summary of actions to take for hyperglycemia.

If the student has severe symptoms of ketosis (altered mental status, vomiting/not able to keep down fluids) are present and a student is having or is suspected of having a hyperglycemic emergency 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

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 all aspects of 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 medical 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 and accurate history of diabetes status from parents/guardians and diabetes care provider(s);
- Up-to-date and accurate history of other medical conditions/diagnosis from parents/guardians 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

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.

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 parents/guardians, 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;
- Side effects of all current 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;

Written copy of health care provider's orders/diabetes management plan including 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
  - Self-administration
  - Level of independence and goals for independence
SELF-MANAGEMENT ASSESSMENT

Based on the student’s DMMP/health care provider orders for students who self-manage their diabetes, the school nurse should assess the student’s ability to:

- 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 30 days of opening) insulin vials correctly.

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

- Set a basal rate/temporary basal rate
- Disconnect pump
- Reconnect pump at infusion set
- Prepare and insert infusion set
- Inserting infusion set
- Troubleshoot alarms and malfunctions
- Counting carbohydrates
- Bolusing insulin
- Calculating an insulin dose
- Resetting basal rate profiles/Setting a temporary basal rate
- Administer an insulin injection if needed for dislodging of cannula
Changing batteries

Ability and willingness to meet student self-management responsibilities

See Appendix C for an example of a self-management skills checklist.

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.

EDUCATIONAL HISTORY/INFORMATION

School performance, grade level

Student specific content needed for revision of existing/development of 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 below

History of diabetes education

Developmental considerations (e.g., adolescent specific concerns)

Involvement in disease related support groups
Any issues related to access to healthcare 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/or nursing assessment;
- A current emergency plan; and
- Current emergency contact information and numbers, updated at least annually.

**INDIVIDUALIZED HEALTH PLANS**

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 student’s healthcare provider should submit the DMMP/health care provider order form to communicate the needed diabetes care in the school setting. See [Appendix D 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 full 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 member may not be available. The plan should also identify school staff trained to provide specified diabetes care tasks as prescribed in the student’s DMMP/health care provider orders. The specific staff 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 issues; developmental issues; 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, field trips, transportation to/from school, school-sponsored activities/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 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 school staff (based on nursing judgment) to administer medication according to student’s DMMP/health care provider orders;

Student’s ability to identify language used to indicate hyper/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);

Student’s understanding and demonstration of medication administration technique; and
Level of independence with medication/treatment including ability to possess and self-manage and goals/plans for self-management.

A copy of the nurse's final assessment 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**

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 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 rapid 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 school staff to administer rapid 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. 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

The registered nurse is always the leader of the school health services team. See the guideline entitled “The 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.” For the purposes of this Guideline, the term “delegation” is used to describe authorizing nursing tasks to be performed by a CMT as a routine part of their job, and the term “trained” is used for authorizing tasks to be performed by an unlicensed school staff member who does not routinely perform the task(s). The decision as to whether the student's healthcare needs can be met by delegation to other school health services staff (e.g., CMT, CNA) or by training and education of an unlicensed individual (e.g., teacher, coach, other school staff member) is made using the criteria for delegation outlined in the Maryland Nurse Practice Act, 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). Trained school staff may include, but are not limited to, health aides, teachers, school administrators, and coaches. The decision to include a trained school staff member 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 can be provided in a safe manner by a trained school staff member. 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 or a trained unlicensed school staff member) 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). This is determined by the school nurse 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 or training a school staff to administer insulin is not prohibited in the Maryland NPA, but both delegation and training must be done in accordance with the NPA, applicable regulations specified in 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 or train an unlicensed person to perform a nursing task. 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 fully 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, another school health services staff member, or trained school staff member 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.

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.

Training school staff to provide diabetes care in an emergency (e.g., provision of fast-acting glucose or administration of glucagon) is also a delegated task. The Nurse Practice Act allows nurses to train and instruct unlicensed persons who are not CMTs to administer emergency medications. A resource containing training content standards for school nurses to use to train unlicensed school personnel is contained in Appendix E.

SECTION V: MEALS AND SNACKS

Meal and snacks for students with diabetes are based on individual student needs. Some students may need a mid-morning snack, mid-afternoon snack and when experiencing symptoms of hypoglycemia. 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 healthcare 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 recommendation 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. It is important that meals and snacks not be delayed to avoid hypoglycemia.

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.

The school nurse should communicate with the on-site school food service manager to determine any necessary cafeteria procedures. Carbohydrate counts for school meal menu items are typically available through the employee intranet, on the school system website, or directly from the county Food & Nutrition Services Director.

SECTION VI: PHYSICAL EDUCATION, EXERCISE AND PHYSICAL ACTIVITY

Exercise and physical activity are important elements of diabetes management. Schools must offer students with diabetes full participation in physical education classes and team sports. Accommodations may be needed and should be specified in the student’s 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 and coaches 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 participate fully in 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.1 2 The school has the responsibility to provide 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. The school nurse, a substitute nurse or a trained school staff member 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 may not be required to participate in/attend a school-sponsored event or field trip as a condition of the student’s participation.

The personnel assigned to a planned school-sponsored activity 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. If the school nurse is unable to attend the event, then it is the school’s responsibility to arrange for another school health services staff member or an appropriately trained school staff member to attend the trip or event to meet the routine and emergency needs of students with diabetes. The decision regarding the most appropriate person to attend the school sponsored event to provide or support diabetes care is made by the school nurse based on a nursing assessment and nursing
judgment, and in collaboration with the school administrator. The school nurse is not required to train a school staff member to provide diabetes care during school sponsored events when in the nurse’s judgment it is not safe to do so. Unlicensed school staff members may not 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 full access to the activity.

The school nurse is responsible to communicate the needs of student’s with diabetes to the staff member in charge of the activity. The school nurse will be sure the school staff member in charge of the activity has a copy of the emergency plan for students with diabetes prior to the school-sponsored activity including for those students who self-manage their diabetes. 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 member 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, parents/guardians, and healthcare provider may recommend to the 504 plan team any accommodations needed during a field trip/school-sponsored activity.

SECTION VIII: CARE COORDINATION

CARE COORDINATION ROLES AND RESPONSIBILITIES

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. 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 504 plan or IEP. The school nurse is often the case manager for these students, but another student services staff member, Individualized Education Program (IEP) team member, or Section 504 plan team member may be designated as the case manager for implementing the student’s IEP or 504 plan. The school nurse 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.

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 with certain responsibilities. The parent/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:

- 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, 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 member 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. 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 procedure or protocol that addresses what to do in the event the parent/guardian has not provided 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;
- Complying with the USDA requirements for meals and snack accommodations (if applicable);
Providing adequate staffing to administer insulin and glucagon according to the student’s diabetes management plan, individualized health care plan, and emergency plan; and

Providing 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. Necessary accommodations are determined based on the school nurse’s assessment, healthcare provider orders, and the unique needs of each individual student.

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, 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. Support 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 diabetes management plan, individualized health care plan, 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 504 plan, IEP or other written accommodation plan and other 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 and emergency plan in accordance with applicable law, state and federal statutes, regulations and policy.

SCHOOL STAFF RESPONSIBILITIES

Other 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 each school staff member who contributes 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. A school staff member may not be required to provide or support diabetes related care.
| **Bus Drivers** | 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. |
| **Coaches/Advisors for School Sponsored Activities** | 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. |
| **School Registered Dietician and Food Services Personnel** | 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. |
| **School Counselor** | Participate in disability awareness activities as necessary; assist with support groups/counseling as needed; assist with educational planning (e.g., 504 plan development and implementation). |
| **Pupil Personnel Worker** | Assist the school nurse to work with families to address transportation concerns, home teaching and attendance concerns. |
| **School Psychologist** | Assist student with psychological supports for coping, adjustment and any behavioral strategies to support diabetes management and self-management. |
| **Teachers (including substitute teachers)** | 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 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. |
| **Trained School Staff** | 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 IX: SCHOOL STAFF AWARENESS, EDUCATION AND TRAINING

SCHOOL STAFF AWARENESS AND EDUCATION

School-wide awareness and education regarding diabetes is important in managing diabetes in the school setting. 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. 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 hypo- or 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

The school nurse, substitute nurse, other school health services staff member, or trained school staff member 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 students 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 CNA/CMT, teachers, school principals, and coaches. 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 need of the student. The school nurse, the school administrator and the school staff will 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 may not 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.  

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.

Training for school staff 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 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 NPA, but the delegation must be done in accordance with the NPA, applicable regulations specified in 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. However, in the absence of a
delegation decision and plan, the school system is still accountable to ensure the student’s needs are fully met to comply with both state and federal laws.

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 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 hyper- and/or hypoglycemia;
- Monitoring blood glucose including the use of the CGM if applicable;
- Counting carbohydrate;
- 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 (pumps or pen) appropriately; and
- Advocating for themself and communicating regarding health needs.

School nurses should also provide resources to parent/guardian of students with diabetes. See the resource list at the end of the Guideline.

SECTION XI: EDUCATION PLANNING

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

According to Section 504 of the Rehabilitation Act of 1973, all students with disabilities are entitled to have access to a free and appropriate public education (FAPE). This entitles students to necessary accommodations for them 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 a student’s 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 504/IEP team and based on the school nurse assessment findings and recommendations, and the student’s DMMP/health care provider orders, with 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. All students with diabetes are eligible for a 504 team assessment to determine the need for a 504 plan. Many students with diabetes are determined by the 504 plan team to require a 504 plan and develop the 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 accommodations required as determined by the 504 plan team. As the student advances through the school system, his/her needs may change, therefore, accommodations and the 504 plan should be reviewed at least annually and updated as required.

The nursing assessment should consider the student’s schedule and activities such as:

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

Common accommodations for students with diabetes 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.

See Appendix F for a 504 plan planning resource that addresses common accommodations needed by students with diabetes. This template should be modified to meet the specific needs for each student.

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. Evaluation and monitoring of diabetes management may include:

- Orders reviewed with family and healthcare provider annually and as necessary (e.g., medication changes);

- Documentation of medications and treatments given;

- Communication with the healthcare 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.
GLOSSARY

Americans with Disabilities Act of 1990, As Amended (ADA): A federal law that protects people with disabilities from discrimination. Under this law, diabetes is virtually always considered to be a disability.

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: Changes or adjustments in a work or school site, program, or job that makes it possible for an otherwise qualified employee or student with a disability to perform the duties or tasks required under 29 C.F.R. § 1630.2(o).

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 parents/guardians or from the eligible student (i.e., a student who is 18 years or older or who attends an institution of postsecondary education).
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, the cells cannot change the glucose to 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, and 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 needed educational 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 it is approximately the size of a cell phone. The goal is to achieve near normal blood glucose levels over 24 hours per day.

Insulin 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 Activity: Academic and non-academic school programs and activities that receive federal financial assistance, including federal funds and therefore subject to Section 504 of the Rehabilitation Act of 1973. [http://www2.ed.gov/about/offices/list/ocr/docs/edlite-FAPE504.html](http://www2.ed.gov/about/offices/list/ocr/docs/edlite-FAPE504.html)

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.

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

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

- School staff training information:

- Safe at School program:


Centers for Disease Control and Prevention (CDC): [www.cdc.gov](http://www.cdc.gov), [http://www.cdc.gov/diabetes](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 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:

- Rehabilitation Act of 1973: [http://www2.ed.gov/about/offices/list/ocr/504faq.html](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: [http://www.marylandpublicschools.org/MSDE/divisions/studentschoolsvcs/student_services_alt/school_health_services/shsguidelines.html](http://www.marylandpublicschools.org/MSDE/divisions/studentschoolsvcs/student_services_alt/school_health_services/shsguidelines.html)


National Association of School Nurses: [https://www.nasn.org/](https://www.nasn.org/)


National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK):

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 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](https://www.kennedykrieger.org/community/community-programs/specialized-health-needs-interagency-collaboration/information-school-n)

Starbright Foundation: [www.starbright.org](http://www.starbright.org). Starbright Foundation is a nonprofit organization dedicated to developing projects that help children and teens address the psychosocial challenges that accompany chronic diseases.

REFERENCES

1. Americans with Disabilities Act of 1990, As Amended (ADA)  
   https://www.ada.gov/pubs/adastatute08.pdf

2. Rehabilitation Act of 1973  http://www2.ed.gov/about/offices/list/ocr/504faq.html

3. Individuals with Disabilities Education Improvement Act (IDEIA)  
   http://idea.ed.gov/download/statute.html

4. Annotated Code of Maryland, Education Article § 7-426.4. Public Schools - Administration of Diabetes Care Services - Guidelines


   http://www.ecfr.gov/cgi-bin/text-idx?SID=1248e3189da5e5f936e55315402bc38b&node=pt42.5.493&rgn=div5


8. Lilly USA, LLC. http://www.lillyglucagon.com/

9. Code of Maryland Regulations 10.27.11.03 (A), (E)  
   http://www.dsd.state.md.us/comar/comarhtml/10/10.27.11.03.htm

10. Code of Maryland Regulations 10.27.09.03 (I)  
    http://www.dsd.state.md.us/comar/comarhtml/10/10.27.09.03.htm

11. Code of Maryland Regulations 10.27.11.03 (C)  
    http://www.dsd.state.md.us/comar/comarhtml/10/10.27.11.03.htm

12. Glucagen Prescriber information  

13. Personal communication with MIEMSS/EMSC (6/17/2016). When calling 911 regarding a diabetes emergency, stating the age of the person and that glucagon was given because the person was unconscious will alert EMS that a higher level responder is needed.

    http://dx.doi.org/10.1016/j.metabol.2015.12.007

    http://dx.doi.org/10.1016/j.jemermed.2013.03.040


20. Code of Maryland Regulations 10.27.11.02(6) http://www.dsd.state.md.us/comar/comarhtml/10/10.27.11.02.htm

21. Code of Maryland Regulations 13A.05.05.08 http://www.dsd.state.md.us/comar/comarhtml/13a/13a.05.05.08.htm

22. Annotated Code of Maryland, Health Occupations Article §8-101 (n) (2) (iv)

23. Code of Maryland Regulations 10.27.11.05 E http://www.dsd.state.md.us/comar/comarhtml/10/10.27.11.05.htm

24. Code of Maryland Regulations 10.27.09.03 J http://www.dsd.state.md.us/comar/comarhtml/10/10.27.09.03.htm


26. Code of Maryland Regulations 10.27.11.03.D (2) http://www.dsd.state.md.us/comar/comarhtml/10/10.27.09.03.htm
APPENDIX A
Glucagon Administration Instructions
**Procedure for Glucagon Administration**

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, ½ 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.


   ⇒ 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.

Information adapted from the Oregon Health Authority: Public Health Division and the Memorial Sloan Kettering Cancer Division
APPENDIX B
Management of Hyperglycemia
Management of Hyperglycemia

**Blood Glucose > Goal**

- BG >250 mg/dl (or level specified in the DMMP); and
- More than 3-4 hours (or as instructed in DMMP) after last bolus; and
- Last BG was > Goal

1. Offer water and recheck BG according to DMMP
2. Give correction bolus with meal bolus according to DMMP
3. Check for ketones (urine or blood) if supplies provided by parent
4. Assess for nausea and/or vomiting

**Urine ketones Trace/Small**

- Blood ketones <1mmol/L
  - Give correction insulin according to DMMP
  - Follow DMMP regarding contacting parent/guardian and continued BG and ketone monitoring

**Urine ketones Moderate/Large**

- Blood ketones >1mmol/L
  - Give correction plus additional insulin according to DMMP; if student uses an insulin pump give insulin via syringe or pen
  - Follow DMMP regarding contacting parent/guardian and continued BG and ketone monitoring and sending student home.

**If student is on pump, assess pump functions if trained:**
- Infusion site in place
- Pump delivering insulin
- Check history for previous bolus
- Adequate insulin in pump
- Address pump malfunction according to DMMP
- If student is independent with pump, assist student with changing cartridge and infusion site

**If severe symptoms of ketosis (altered mental status, vomiting):**
- Call 911
- Call parent/guardian
- Stay with student until EMS arrives
- Continue follow student DMMP or Emergency Plan

Appendix B—V4a FINAL 11-7-2016
APPENDIX C
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 ________

<table>
<thead>
<tr>
<th>Knowledge of DMMP/Health Care Provider Order Form</th>
<th>Needs Assistance</th>
<th>Independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student verbalizes signs, symptoms, and treatment of HYPOGLYCEMIA: Low Blood Sugar:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Hungry □ Weak/Shaky □ Headache □ Dizziness □ Confusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Low Blood Sugar:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Nausea □ Slurred speech □ Clamminess □ Blurred vision □ Loss of concentration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student’s Usual Signs/Symptoms of Low Blood Sugar:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student verbalizes signs, symptoms, and treatment of HYPERGLYCEMIA: High Blood Sugar:</th>
<th>Needs Assistance</th>
<th>Independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Increased thirst □ Increased urination □ Tired/drowsy □ Blurred vision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very High Blood Sugar:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Nausea/vomiting □ Abdominal pain □ Extreme thirst □ Fruity breath odor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student’s Usual Signs/Symptoms of Low Blood Sugar:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student identifies when and who to seek for assistance with diabetes management.

Student identifies diabetes supplies needed at school and where they are stored.

<table>
<thead>
<tr>
<th>Skills</th>
<th>Needs Assistance</th>
<th>Independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student demonstrates correct technique and understanding of blood glucose monitoring:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Washes hands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Verifies code of meter and matches test strip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Operates lancing device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Obtains blood sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Records and communicates results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Interprets results</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Insulin administration:

Method of Insulin Delivery: □ Syringe □ Pen □ Pump

Carbohydrate Insulin Dose: One unit of insulin per _____ grams of carbohydrate

Administers insulin at appropriate times

Can calculate the correction dose

Insulin administration by SYRINGE:

Selects appropriate injection site

Draws up correct dose in syringe

Verifies insulin dose

Injects insulin

Disposes of sharps safely

Records administration

Insulin administration by PEN:

Selects appropriate injection site

Primes pen with insulin, if necessary

Dials correct insulin dose

Verifies insulin dose

Injects insulin

Disposes of sharps safely

Records administration
### Skills (continued)

<table>
<thead>
<tr>
<th>Needs Assistance</th>
<th>Independent</th>
</tr>
</thead>
</table>

**Insulin administration by PUMP:**
- ☐ 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)
- ☐ Reports pump malfunctions to appropriate staff
- ☐ Ensures pump safety during physical activity
- ☐ Locates backup pump supplies, insulin, and syringe or pen in event of pump malfunction
- ☐ Demonstrates ability to use insulin syringe or pen in event of pump malfunction
- ☐ Records administration

**Management of Low Blood Glucose (below ______ mg/dl) Treatment Plan:**
- ☐ Take 15 grams of fast-acting carbohydrates
- ☐ Retest blood glucose 10 – 15 minutes after treatment
- ☐ Repeat steps 1 and 2 until blood glucose is above ______ mg/dl
- ☐ Follow treatment with _______ grams of carbohydrate if more than one hour until next meal/snack or if going to physical activity
- ☐ Delay exercise if blood glucose is below ______ mg/dl

**Management of High Blood Glucose (above ______ mg/dl) Treatment Plan:**
- ☐ Administer insulin correction dose determined by HCP’s order for sliding scale
- ☐ Retest blood glucose in ______ hours if above ___ 206 ___ mg/dl
- ☐ Conduct ketone urine test if supplied by parent and ordered by HCP
- ☐ Conduct ketone blood test if supplied by parent and ordered by HCP

**Student demonstrates technique for ketone testing and reporting of results:**
- ☐ Collects specimen (blood or urine)
- ☐ Uses test strip appropriately
- ☐ Records and communicates results
- ☐ Understands treatment/action according to DMMP/Health Care Provider Order Form

### Nutrition and Activity

<table>
<thead>
<tr>
<th>Needs Assistance</th>
<th>Independent</th>
</tr>
</thead>
</table>

**Student verbalizes healthy meal planning.**

**Student can identify carbohydrate content of foods.**

**Student can adjust foods based on blood glucose results and activity.**

**Student can calculate insulin to carbohydrate ratio per DMMP/Health Care Provider Order Form.**

**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.**

### Safety

<table>
<thead>
<tr>
<th>Needs Assistance</th>
<th>Independent</th>
</tr>
</thead>
</table>

**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.**
APPE N D I X D
Maryland Diabetes Medical Management Plan/
Health Care Provider Order Form
**Maryland Diabetes Medical Management Plan/ Health Care Provider Order Form**

**Valid from:** Start ___/___/___ to End ___/___/___ or for School Year ________

---

### Demographics

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>DOB:</th>
<th>Grade:</th>
<th>Diagnosis:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent/Guardian:</td>
<td>Home Phone:</td>
<td>Cell Phone:</td>
<td></td>
</tr>
</tbody>
</table>

### Insulin Orders

**Insulin Dosing:**
- □ Correction dose only
- □ Correction dose plus CHO coverage
- □ Carbohydrate coverage only
- □ Fixed dose
- □ Fixed insulin dose
- □ See attached dosing scale

**Insulin(s):**
- □ Rapid Acting: □ Apidra
- □ Humalog
- □ Novolog
- □ Any of the rapid acting insulins may be substituted for the others

**Long Acting (if given at school):**
- Give ______ units at ______ (time)

**Insulin Delivery:**
- □ Pen
- □ Syringe
- □ Pump (make/model):

**Carbohydrate (CHO) Coverage per meal:**
- ______ units of insulin SQ per ______ grams of CHO at breakfast
- ______ units of insulin SQ per ______ grams of CHO at lunch

**Carbohydrate Dose Adjustment Prior To Strenuous Exercise:**
- □ Use exercise/PE CHO ratio of ______ units of insulin per ______ grams of CHO at breakfast
- □ Use exercise/PE CHO ratio of ______ units of insulin per ______ grams of CHO at lunch

**Correction Dose:**
- □ Give ______ units of insulin SQ for every ______ mg/dl greater than target BG of ______ mg/dl
- □ If pre-meal BG less than ______ mg/dl, subtract ______ unit(s) of insulin dose

**Fixed Dose Insulin:**
- ______ units of insulin SQ given before school meals

**Split Insulin Dose:**
- Give ______ units or ______% of meal insulin dose SQ before meal and ______ units or ______% of meal insulin dose SQ after meal

**Snack Insulin Coverage:**
- ______ units of insulin SQ per ______ grams of CHO in snack
- ______ units of insulin SQ for snack greater than ______ grams of CHO

**Ketone Coverage**

For ketones trace to small (urine)/<____ mmol/L (blood):  
- □ Correction dose plus ______ units
- ______ units of insulin

For ketones moderate to large (urine)/>____ mmol/L (blood):  
- □ Correction dose plus ______ units
- ______ units of insulin

**Insulin Dose Administration Principles**

- □ Before meals
- □ Before snacks
- □ Other times (please specify):
  - For hyperglycemia if BG > ______ mg/dl and ______ hours since last dose/bolus
  - If CHO intake cannot be predetermined, insulin should be given no more than ______ minutes after start of meal/snack
  - If parent request, insulin should be given no more than ______ minutes after start of meal/snack

**Independent Diabetes Self-Management Skills**

- □ Insulin dose calculations
- □ Carbohydrate counting
- □ Measuring insulin
- □ Insulin administration

---

### Other Diabetes Medication

<table>
<thead>
<tr>
<th>Name of Medication</th>
<th>Time</th>
<th>Dosage</th>
<th>Route</th>
<th>Possible Side Effects</th>
</tr>
</thead>
</table>

---

### Authorizations

**HEALTH CARE PROVIDER AUTHORIZATION**

I authorize the administration of the medications and student diabetes self-management as ordered above.

**Provider Name (PRINT):**

<table>
<thead>
<tr>
<th>Phone:</th>
<th>Fax:</th>
</tr>
</thead>
</table>

**PARENT/GUARDIAN AUTHORIZATION**

By signing below, I authorize:

- The designated school personnel to administer the medication and treatment orders as prescribed above.

**Provider Signature:**

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
</table>

**Acknowledged and received by:**

**School Nurse:**

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
</table>

---

**Diabetes Management Order Form 10/2016**

Page 1 of 3
**Student Name:**

**DOB:**

**Grade:**

**Management**

*see section on self-care skills

### Blood Glucose (BG) Monitoring:
- Before meals
- Before PE/Activity
- After PE/Activity
- Prior to dismissal
- Additional monitoring per parent request
- For symptoms of hypo/hyperglycemia & anytime the student does not feel well
- Independently checks BG

### Continuous Glucose Monitoring
- Uses CGM
- Make/Model:
- Other:
- Alarms set for:
  - Low _____ mg/dl
  - High _____ mg/dl
- If sensor falls out at school, notify parent

### Hypoglycemia Management

#### Mild or Moderate Hypoglycemia:
- Provide quick-acting glucose product equal to 15 grams of carbohydrate (or glucose gel), if conscious & able to swallow. If glucose gel is given, place student in recovery position.
- Suspend pump for BG < _____ mg/dl and restart pump when BG > _____ mg/dl
- Other:

Always treat hypoglycemia before the administration of meal/snack insulin

#### Repeat BG check in 15 minutes
- If BG still low, then re-treat with 15 gram quick-acting CHO as stated above
- If BG in acceptable range and at lunch or snack time, let student eat and cover meal CHO per orders
- If CGM in use and BG 70 and arrow going up, no need to recheck

#### Severe Hypoglycemia:
If student is unconscious, semi-conscious, unable to control his/her airway, unable to swallow or seizing give:
- GLUCAGON injection:
  - 1 mg
  - 0.5 mg
  - IM or SQ
- Place student in the recovery position
- Suspend pump, if applicable, and restart pump at BG > _____ mg/dl
- Call 911; notify parent/guardian

### Hyperglycemia Management

If BG greater than _____ mg/dl, or when child complains of nausea, vomiting, and/or abdominal pain, check urine/blood for ketones.
- If urine ketones are trace to small or blood ketones _____ mmol/L:
  - Give _____ ounces of sugar-free fluid or water per hour
  - Give insulin as listed in Part A
- If urine ketones are moderate to large or blood ketones greater than _____ mmol/L
  - Give _____ ounces of sugar-free fluid or water
  - Give insulin as listed in Part A
- If large ketones, vomiting or other signs of ketoacidosis, call 911. Notify parent/guardian
- Recheck BG and ketones ______ hours after administering insulin
- Contact Parent/Guardian for:
  - BG > _____ mg/dl
  - Ketones _____ mmol/L

### Snacks

- Before physical education/physical activity/sports longer than _____ mins
- Per Parent/Guardian
- Per Student
- Limit snack to _____ grams of CHO
- Delay snack if BG > _____ mg/dl
- No snack coverage
- Other:

**Provider Name:**

**Signature:**

**Date:**

Acknowledged and received by:

**School Nurse:**

**Date:**
<table>
<thead>
<tr>
<th>Student Name:</th>
<th>DOB:</th>
<th>Grade:</th>
</tr>
</thead>
</table>

**Physical Education, Physical Activity and Sports**
- Avoid physical education, physical activity and sports if: □ BG < _____ mg/dl □ KG > _____ mg/dl □ Ketones present
- If BG is 80-100 mg/dl, give 15 grams of CHO and return to physical education, physical activity, or sports
- May disconnect pump for sports activities
- Student may set temporary basal rate
- Other:

**Transportation**
- BG must be > _____ mg/dl for bus ride/walk home
- Only check BG if symptomatic prior to bus ride/walk home
- Allow student to carry quick-acting glucose for consumption on bus, as needed for hypoglycemia
- Student must be transported home with parent/guardian if (specify):
- Other:

**Disaster Plan (if needed for lockdown, 72 hr shelter in place)**
- Continue to follow orders contained in this medical management plan
- Additional insulin orders as follows:
- Other:

**Pump Management**

<table>
<thead>
<tr>
<th>Type of Pump:</th>
<th>Pump start date:</th>
<th>Child Lock:</th>
<th>□ On</th>
<th>□ Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basal rates:</td>
<td>__ units/hour ___ AM/PM</td>
<td>__ units/hour ___ AM/PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>__ units/hour ___ AM/PM</td>
<td>__ units/hour ___ AM/PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>__ units/hour ___ AM/PM</td>
<td>__ units/hour ___ AM/PM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Hyperglycemia Management:**
- If BG > _______ mg/dl and has not decreased over ______ hours after bolus, consider infusion site change. Notify parent/guardian
- For infusion site failure: □ Give insulin via syringe or pen □ Change infusion site
- For suspected pump failure, suspend or remove pump and give insulin via syringe or pen
- If BG > ___ mg/dl and moderate to large ketones, student should change infusion site and give correction dose by pen or syringe
- Other:

**Independent Insulin Pump Self-Care Skills** *

* Nursing assessment required to verify skills. Demonstration of skills is required.

- Student is independent in the pump skills indicated below:
  - □ Carbohydrate counting
  - □ Bolus an insulin dose
  - □ Set a basal rate/temporary basal rate
  - □ Reconnect pump at infusion set
  - □ Prepare and insert infusion set
  - □ Troubleshoot alarms and malfunctions
  - □ Give self-injection if needed
  - □ Disconnect pump
  - □ Other:

**Additional Orders**

**Parent/Guardian Consent for Self-Management**
- □ I acknowledge that my child □ is □ is not authorized to self-manage as indicated by my child’s health care provider.
- □ 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.

**My child has my permission to independently perform the diabetes tasks listed below as indicated by my child’s health care provider:**
- □ Blood glucose testing
- □ Carbohydrate counting
- □ Insulin administration
- □ Insulin dose calculation
- □ Other:

<table>
<thead>
<tr>
<th>Parent/Guardian Name:</th>
<th>Signature:</th>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Provider Name:</th>
<th>Signature:</th>
<th>Date:</th>
</tr>
</thead>
</table>

Acknowledged and received by: School Nurse: Date:
APPENDIX E
Content Standards for Training Unlicensed School Staff
MANAGEMENT OF DIABETES IN SCHOOLS

Content Standards for Training Unlicensed School Staff

Maryland State Department of Education
Student Services and Strategic Planning Branch
200 West Baltimore Street
Baltimore, Maryland 21201
Phone: 410-767-0311
TTY/TDD: 410-333-6442

Maryland Department of Health and Mental Hygiene
Office of School Health
201 West Preston Street
Baltimore, Maryland 21201
Phone: 1-877-463-3464
TTY/TTD: 1-800-735-2258
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Applicable Legal Authorities</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>iv</td>
</tr>
<tr>
<td></td>
<td>Purpose</td>
<td>vi</td>
</tr>
<tr>
<td>1</td>
<td>Section 1 Knowledge</td>
<td>1</td>
</tr>
<tr>
<td>1-A</td>
<td>1-A Legal Basis for Training</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Federal Laws and Regulations</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>State Laws and Regulations</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>State and Local Guidelines and Policies</td>
<td>2</td>
</tr>
<tr>
<td>1-B</td>
<td>1-B Diabetes Basics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Medication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Activity</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Diabetes Management at School</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Blood Glucose Monitoring</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Insulin Basics</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Ketones</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Hypoglycemia</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Hyperglycemia</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Social and Emotional Issues</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Self-Management and Supports for Self-Management</td>
<td>14</td>
</tr>
<tr>
<td>1-C</td>
<td>1-C Planning for Students with Diabetes</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Emergency Plans</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Educational Supports: 504 Plans and IEPs</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Field Trips and Special Events</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Disaster Planning</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Section 2 Skills</td>
<td>20</td>
</tr>
<tr>
<td>2-A</td>
<td>2-A Implementing the Emergency Plan</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Recognition of Symptoms of Hypoglycemia</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Recognition of Symptoms of Hyperglycemia</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Administration of Glucagon</td>
<td>21</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>2-B Implementing the Individualized Health Plan</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Testing for Ketones</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Administration of Insulin via Syringe</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Administration of Insulin via Pump</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Administration of Insulin via Pen</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Documentation of Medication Administration</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Pre-Tests/Post-Tests</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Knowledge of Laws Regulations</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Diabetes Basics</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>
APPLICABLE LEGAL AUTHORITIES

Americans with Disabilities Act of 1990, As Amended (ADA)
https://www.ada.gov/pubs/adastatute08.pdf

Family Educational Rights and Privacy Act (FERPA)

Individuals with Disabilities Education Improvement Act (IDEIA)
http://idea.ed.gov/download/statute.html

Rehabilitation Act of 1973
http://www2.ed.gov/about/offices/list/ocr/504faq.html

Annotated Code of Maryland, Education Article § 7-401
School health program

Maryland General Assembly-- House Bill 771 (2016)

Annotated Code of Maryland, Education Article § 7-426.4
Public Schools - Administration of Diabetes Care Services – Guidelines

Annotated Code of Maryland, Courts and Judicial Proceedings Article § 5-603
Emergency medical care
Md. Courts And Judicial Proceedings Code Ann. § 5-603

Maryland Nurse Practice Act – Regulations
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
INTRODUCTION

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. The care of diabetes involves significant daily attention to medication administration, food intake and physical activity in order to maintain a healthy active lifestyle.

All students have the right to fully 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 the medical condition. 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), the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, 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.

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. Keeping students with diabetes safe in school requires a coordinated and educated team approach to provide optimal diabetes management. The coordinated team approach includes the student and their family, the diabetes care specialist and other health care providers, teachers, counselors and other school staff. Unlicensed school staff, based on the judgment of the school nurse, may be trained to implement routine and emergency diabetes medical care for students with diabetes.

In 2016, the Maryland legislature passed House Bill 771 (HB 771), entitled “Public Schools - Administration of Diabetes Care Services – Guidelines,” and codified in the Annotated Code of Maryland, Education Article, §7-426.4, requiring the Department of Health and Mental Hygiene (DHMH) and the Maryland State Department of Education (MSDE) to develop guidelines related to the provision of care to students with diabetes. The goal of training and education for school staff is to equip them to provide an appropriate level of diabetes care when a school nurse or other school health services staff member is not available. The training aims to maintain a high level of safety and quality for the services provided to students with diabetes.

This “Content Standards for Training Unlicensed School Staff” document is the product of a collaborative process that included input from local school health services coordinators, the American Diabetes Association, Kennedy Krieger Institute/Specialized Health Needs Interagency Collaboration (SHNIC) Program, Certified Diabetes Educators, and the Maryland Board of Nursing. The training standards document serves as a resource that details the basic knowledge
and skills unlicensed school staff must possess to appropriately support school diabetes management. The information contained in the document may be used by school nurses to train unlicensed school staff to perform certain tasks related to diabetes management for children in schools. It is important to note that the school nurse’s judgment is the basis for all training and delegation decisions regarding diabetes management by persons other than a nurse. The use of unlicensed school staff providing diabetes management in schools is permitted but not required under Maryland law. The content of this document is consistent with the Maryland Nurse Practice Act and regulations. This document is not meant to be used outside of the principles outlined in the Maryland State School Health Services Guideline entitled “Management of Diabetes in Schools”; this resource is a tool to facilitate implementation of the guidelines.

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. Training should be done according to the student’s DMMP/health care provider orders and in accordance with the Maryland Nurse Practice Act. Training to provide or support diabetes care should be done at least annually, whenever needed, and when a student’s condition changes.

The ‘Knowledge’ section of this document contains information on the legal obligations of schools to meet the needs of students with diabetes and an overview of diabetes including the range of activities that need to be addressed when managing diabetes in schools. The ‘Skills’ section of this document provides detailed information on the skills required to provide diabetes care as stated in the student’s Diabetes Medical Management Plan (DMMP)/Health Care Provider Order Form and emergency plan.
PURPOSE

The purposes of the “Content Standards for Training Unlicensed School Staff” document are to:

1. Provide school health services programs with information, resources and tools for training unlicensed school staff on the management of diabetes 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 are able to fully participate in all aspects of school programming, including after school activities and other school sponsored events; and

3. Provide school health services programs with information, resources, and tools to train unlicensed school staff on specific tasks involved in implementing the student’s DMMP/Health Care Provider Order Form and emergency plan.
### Management of Diabetes in Schools: Content Standards for Training Unlicensed School Staff

<table>
<thead>
<tr>
<th>Content Specification</th>
<th>Learning Objective</th>
<th>Outline Summary</th>
<th>Resources for the Trainer</th>
<th>Assessment Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 1: Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1-A: Legal Basis for Training</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand the role of unlicensed school staff in supporting the school nurse in providing care to students with diabetes</td>
<td>Individuals with Disabilities Education Improvement Act (IDEIA) <a href="http://idea.ed.gov/download/statute.html">http://idea.ed.gov/download/statute.html</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand the liability protections for trained unlicensed school personnel who provide diabetes care</td>
<td>Rehabilitation Act of 1973, Section 504 <a href="http://www2.ed.gov/about/offices/list/ocr/504faq.html">http://www2.ed.gov/about/offices/list/ocr/504faq.html</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Laws and Regulations</td>
<td>• Understand State laws, regulations that specify the services to be provided to students with diabetes</td>
<td>Annotated Code of Maryland, Education Article § 7-401 School health program <a href="http://mgaleg.maryland.gov/webmga/frmStatutesText.aspx?article=ged&amp;section=7-401&amp;ext=html&amp;session=2015RS&amp;tab=subject5">http://mgaleg.maryland.gov/webmga/frmStatutesText.aspx?article=ged&amp;section=7-401&amp;ext=html&amp;session=2015RS&amp;tab=subject5</a></td>
<td><a href="https://www.kennedykrieg.org/sites/default/files/community_files/education-al-article-426-4.pdf">https://www.kennedykrieg.org/sites/default/files/community_files/education-al-article-426-4.pdf</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand the role of unlicensed school staff in supporting the school nurse in providing care to students with diabetes</td>
<td>Annotated Code of Maryland, Education Article § 7-426.4 Public Schools - Administration of Diabetes Care Services – Guidelines <a href="http://mgaleg.maryland.gov/2016RS/chapters_noln/Ch_277_hb0771T.pdf">http://mgaleg.maryland.gov/2016RS/chapters_noln/Ch_277_hb0771T.pdf</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand the liability protections for trained unlicensed school personnel who provide diabetes care</td>
<td>School Health Services Standards – For All Students with Special Health Needs <a href="http://www.dsd.state.md.us/comar/comarhtml/13a/13a.05.05.08.htm">http://www.dsd.state.md.us/comar/comarhtml/13a/13a.05.05.08.htm</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand the liability protections for trained unlicensed school personnel who provide diabetes care</td>
<td>Annotated Code of Maryland, Courts and Judicial Proceedings Article § 5-603 Emergency medical care Md. Courts And Judicial Proceedings Code Ann. § 5-603</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand the liability protections for trained unlicensed school personnel who provide diabetes care</td>
<td>School Health Services Standards — For All Students with Special Health Needs Code of Maryland Regulations 13A.05.05.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
services to students

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

Maryland Nurse Practice Act – Regulations
http://www.dsd.state.md.us/comar/subtitle_chapters/10_Chapters.aspx#Subtitle27

Standards of Practice for Registered Nurses
http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=10.27.09.*

Standards of Practice for Licensed Practical Nurses
http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=10.27.10.*

Delegation of Nursing Functions
http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=10.27.11.*

State SHS Guidelines – See Table of Contents for specific guidelines related to delegation in the school setting, and role of the school health services staff
www.mdschoolhealthservices.org

State and Local Guidelines and Policies
- Understand local policy for implementing state laws and regulations
- Responsibilities for Collaboration

A. Responsibilities for Collaboration
1. In order to feel safe, maintain wellness, and progress educationally, students with diabetes depend upon the collaboration of their family, their health care team, and their school health team. The NDEP (2010) has developed a comprehensive resource for students, parents, and school staff to carry out a student’s Diabetes Medical Management Plan (DMMP). Everyone has a part to play in helping the student reach his or her potential and access the educational environment. No role is insignificant.
### 1-B: Diabetes Basics

<table>
<thead>
<tr>
<th>Content Specification</th>
<th>Learning Objective</th>
<th>Outline Summary</th>
<th>Resources for the Trainer</th>
<th>Assessment Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication</td>
<td>• Understand the medications associated with Type 1 Diabetes &lt;br&gt; • Understand the medications associated with Type 2 Diabetes &lt;br&gt; • Understand the parent’s responsibility for providing supplies</td>
<td><strong>A. Medication for type 1 diabetes mellitus</strong>&lt;br&gt;1. Students with type 1 diabetes mellitus require the administration of insulin to cover both carbohydrates eaten and blood glucose levels that are out of the child’s target blood glucose goal range. &lt;br&gt;2. Most children on multiple daily injection therapy or insulin pump therapy will require insulin delivery at school. In addition, some children with T1DM may also require oral medications as part of their DMMP.  &lt;br&gt;<strong>B. Medication for type 2 diabetes mellitus</strong>&lt;br&gt;1. For type 2 diabetes mellitus, the first recommended treatment is usually a change in lifestyle. Increased physical activity and following a specified meal plan may help to control blood glucose levels and contribute to weight loss. &lt;br&gt;2. The DMMP will specify what medications the student needs. T2DM is often managed with oral medication, but insulin may also be used to achieve glycemic control.  &lt;br&gt;<strong>C. Parents are responsible for providing medications and supplies necessary to meet their child’s need. These include, but are not limited to:</strong>&lt;br&gt;1. Insulin &lt;br&gt;2. Syringes and/or 1-2 pump change set-ups &lt;br&gt;3. Lancing devices and lancets &lt;br&gt;4. blood glucose monitor, extra batteries and strips &lt;br&gt;5. Ketone sticks &lt;br&gt;6. Alcohol swabs &lt;br&gt;7. Hypoglycemia treatment supplies &lt;br&gt;8. Glucose tabs &lt;br&gt;9. Small juice boxes &lt;br&gt;10. Crackers &lt;br&gt;11. Glucagon emergency kit (if ordered)</td>
<td><a href="https://www.niddk.nih.gov/health-information/health-communication-programs/ndep/health-care-professionals/school-guide/Documents/ndep61_schoolguide_4c_508.pdf">https://www.niddk.nih.gov/health-information/health-communication-programs/ndep/health-care-professionals/school-guide/Documents/ndep61_schoolguide_4c_508.pdf</a></td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>• Understand the importance of meal planning for students with diabetes &lt;br&gt; • Understand how</td>
<td><strong>A. Nutrition</strong>&lt;br&gt;1. Students with diabetes have the same nutritional needs as other students; thus there are no forbidden foods. The significant difference in meal planning for the student with diabetes is:&lt;br&gt;   i. The timing &lt;br&gt;   ii. The amount</td>
<td><a href="https://www.niddk.nih.gov/health-information/health-communication-programs/ndep/health-care-professionals/school-guide/Documents/ndep61_schoolguide_4c_508.pdf">https://www.niddk.nih.gov/health-information/health-communication-programs/ndep/health-care-professionals/school-guide/Documents/ndep61_schoolguide_4c_508.pdf</a></td>
<td></td>
</tr>
</tbody>
</table>
### B. General Nutrition Guidelines

1. Designated school personnel must be knowledgeable of the student’s meal plan requirements:

2. Because carbohydrates affect blood glucose levels more directly than any other nutrient, they are the major focus of most meal planning approaches.
   
   i. Carbohydrates are found in:
      1. Dairy products
      2. Starchy vegetables
      3. Grains
      4. Fruits
      5. Juices
      6. Sweets
      7. Condiments
      8. Sauces
      9. Dressings

3. Families of students with diabetes may review the school lunch menu to determine the carbohydrate content of the meals. The food service manager should have access to the nutritional content of the food available in the cafeteria.

4. If a food vendor for an item changes or the vendor updates their food label, check to see if there are differences in the nutritional content.

5. If a parent provides food from home, the parent should provide the school with the carbohydrate count for the food item or meal.

6. A certified diabetes educator may help locate resources for nutritional needs.

7. Many students with type 2 diabetes will follow a meal plan to help them to achieve a healthy weight. Some students with type 1 diabetes may have medical conditions that require dietary adjustments. One such condition is celiac disease.

8. Schools should provide carbohydrate counts and nutrition information to families so they may plan meals and snacks accordingly.
Physical Activity

- Understand the benefits of physical activity for students with diabetes
- Understand the physical activity guidelines for students with diabetes
- Understand the importance of blood glucose monitoring related to physical activity

A. Benefits of Physical Activity:
1. Exercise and physical activity are critical parts of diabetes management. Students with diabetes should participate fully in physical education classes and team sports. Benefits of physical activity in diabetes management are:
   i. Maintaining cardiovascular fitness
   ii. Controlling weight
   iii. Lowering blood glucose levels

B. General Guidelines for Physical Activity:
1. To maintain blood glucose levels within the target range during extra physical activity, students may need to make adjustments in their insulin and food intake. Students may need to check their blood glucose levels more frequently while engaging in physical activity.
   i. Blood glucose levels before exercise should be directed by the DMMP (commonly between 100 mg/dl and 250 mg/dl).
   ii. If blood glucose levels are high, ketone testing may be ordered as well as appropriate follow up if ketones are present.
2. Students with diabetes should eat prior to exercising if it has been more than two hours since the student has eaten.
   i. It is best to exercise or take physical education classes 30-60 minutes after a meal to allow time for food to be absorbed.
3. A student with diabetes always needs to have water, a fast acting sugar and a complex carbohydrate readily available for treatment of low blood sugar.
4. Physical education instructors and sports coaches should have a copy of the student’s emergency plan and should be able to recognize and assist with the treatment of hypoglycemia.
5. The student’s DMMP will specify any restrictions to participation.

C. Physical Activity and Pumps:
1. Students using pumps may disconnect from the pump for sports activities if directed by the DMMP. The student’s IHP should address storage of the pump if it is removed for physical activity. If a student keeps the pump on, he/she may set it at a temporary, reduced rate of insulin while he/she is at play. Instructions for
<table>
<thead>
<tr>
<th><strong>Diabetes Management at School</strong></th>
<th>• Understand basic components of diabetes care in schools</th>
<th><strong>A. Basic components of diabetes care at school:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1. Monitoring blood glucose levels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Individualized blood glucose target range for each student</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Proper disposal of sharps and material that come in contact with blood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Recognizing and treating hypoglycemia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Recognizing and treating hyperglycemia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Administering insulin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Administering glucagon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Carbohydrate counting basics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Planning for disasters and emergencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Following the individualized care plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Getting regular physical activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Maintaining a healthy weight</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Planning for special events, field trips and extracurricular activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14. Dealing with social and emotional issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Blood Glucose Monitoring</strong></th>
<th>• Understand why blood glucose monitoring is important • Understand when to check blood glucose levels</th>
<th><strong>A. Blood glucose Monitoring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1. Successful diabetes management depends largely on blood glucose monitoring, which measures the effects of balancing food, exercise and medication. Blood glucose levels are measured in milligrams per deciliter (mg/dL). The physician usually requests that a student check blood glucose levels at various times during the school day such as:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. Before eating snacks or lunch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Before physical activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. When the student has symptoms of either high or low blood glucose</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Before dismissal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e. Other times as determined by the DMMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. The primary health care provider or diabetes educator will provide guidance on how frequently the student’s blood glucose should be checked during the day in the DMMP. There are no specific number of blood glucose checks which should be done</td>
</tr>
</tbody>
</table>

per day as different individuals require different treatment options. The student’s doctor, school nurse or other diabetes professional can work with the parent or guardian and student to determine the best plan for treatment.

3. Students who are participating on sports teams may have to check their blood glucose level more frequently (especially during the first weeks of practice). Changes in the level of physical activity may alter dietary and insulin needs. Blood glucose monitoring helps keep blood glucose levels within the target range. Blood glucose target ranges are very individualized and are determined by the healthcare provider. The range is customized to the student’s needs and will change as growth, puberty, and diabetes treatment changes.

4. Adult supervision should be provided as indicated on the students DMMP. Students who demonstrate appropriate blood glucose checking technique and competence in managing insulin requirement should be allowed to check their blood glucose levels. Students should also demonstrate an understanding of school policy and procedure in the performance of self-care tasks.

5. A parent or guardian is responsible for providing the school with all necessary equipment, supplies, medications and plans for the care of their student with diabetes. A parent or guardian is to be notified in advance when supplies are running low or if equipment needs to be replaced.

6. There are a variety of blood glucose meters (glucometers) available. A school nurse knowledgeable in the use of glucose meters, must train unlicensed school personnel, who have been designated to care for students with diabetes, in the proper use of each style of glucose meter. A copy of the instruction for each student’s meter should be kept in the health office. Reference materials for meters along with the manufacturer’s toll-free number should be made available from the parent or guardian.

7. The benefits of blood glucose monitoring at school include:
   a. Provides immediate blood glucose levels so that adjustments in food, medication, or activity can be made
   b. Information to assess response to therapy and maximize student’s ability to participate in learning opportunities
   c. Confirmation of whether symptoms relate to low
Insulin Basics

- Be familiar with various instruments for insulin administration
- Understand proper insulin storage
- Be familiar with the types of insulin
- Understand the onset, peak and duration of insulin
- Be aware of and understand the individual student’s insulin delivery device

### B. Insulin Administration Overview

Insulin administration using the dosage and delivery methods such as syringe, pump, or pen injector as required are found in the student’s DMMP. The individualized management plan for determining insulin dosage and delivery method is based upon the authorized health care provider orders. The delegation of insulin administration will comply with the Maryland Nurse Practice Act and principles of delegation. It is the responsibility of the school to ensure a trained school staff member is available to administer insulin, in accordance with the Nurse Practice Act, when a school nurse or other school health services staff is not available. A parent/guardian is authorized to adjust insulin dosage within parameters as authorized by the DMMP.

### C. Types of Insulin:

1. Rapid Acting – Humalog, Novolog, Apidra
2. Short Acting – Regular
3. Intermediate Acting – NPH
4. Long Acting – Glargine (Lantus), Detemir (Levemir)

### D. Description of Types of Insulin:

1. Rapid-acting insulin: is referred to as bolus insulin and peaks quickly (within 10-15 minutes). They are used to treat high blood sugars; to “cover” an increase in blood sugar after eating and/or right before meals. It is also used in insulin pumps.
2. Short-acting insulin: similar to rapid-acting insulin. However, their peak is delayed and their duration is longer.
3. Intermediate and long-acting insulin: referred to as basal insulin and are used for coverage during time when the person is not eating, overnight or between meals.

### E. Insulin Storage:

1. Always date and initial when a vial is opened.
2. Insulin vials should not be kept beyond expiration dates.
3. Insulin vials should not be exposed to extremes in temperature (below 36° F or above 86° F).

4. Excess agitation of vials should be avoided.
5. Avoid freezing insulin.
6. If temperatures do not exceed 86 °F, vials of insulin will stay fresh without refrigeration for up to a month.
7. Open insulin pen cartridges may last less than 30 days.
8. Unopened vials should be refrigerated and are considered good until their expiration date.
9. Always refer to manufacturer recommendations for appropriate storage instructions.

F. Dosage of Insulin:
Doses of insulin are measure in “units.” One unit of insulin can alter a blood glucose level; therefore it is imperative that the ordered dosage be exact. Insulin should only be administered from a properly labeled prescription vial from a pharmacy. Specific written authorization from the student’s health care provider and written parent/guardian authorization is required for insulin administration. Written dosing instructions and consents should be contained in the DMMP.

Ketones

- What are ketones?
- Why do ketones develop in persons with diabetes?
- What is the danger of ketones/ketoacidosis?
- When should ketones be checked?
- How are ketones monitored?
- How to respond to a ketone monitoring result

A. Ketones appear in the blood when there is not enough insulin in the body to change sugar into energy. When the body cannot use sugar, it uses fat and muscle stores for energy.

B. The breakdown of the fat and muscle produces ketones. Ketones are acid waste products that build up in the blood. This can happen when there is too little insulin in the body due to not taking enough insulin or illness. It can also happen when there is not enough food due to weight loss or skipping meals. Because ketones are an acid, they can upset the way the body functions. This can lead to a serious condition. It is called diabetic ketoacidosis (DKA).

C. Who should check for blood ketones:
   1. Children and teenagers with Type 1 diabetes
   2. Insulin pump users
   3. All people with insulin dependent diabetes

D. When to check for blood ketones:
   1. Blood sugar over 240mg/dL or value stated on emergency plan
   2. Illness
   3. Stress
   4. Pregnancy

http://dpi.wi.gov/sspw/pupil-services/school-nurse/training/nursing-procedures
### Warning signs of diabetic ketoacidosis (DKA):
1. High blood sugar
2. Nausea and/or vomiting
3. Fruity acidic breath
4. Rapid, labored breathing
5. Stomach pain or cramping
6. Blood ketone level above 1.5 mmol/L

### Diabetic ketoacidosis can lead to:
1. Fatigue
2. Confusion
3. Coma

### Hypoglycemia

| • Define hypoglycemia                      |
| • Be familiar with signs and symptoms of hypoglycemia |
| • Be familiar with proper treatment of hypoglycemia |
| • Understand how hypoglycemia can be prevented |

### A. Hypoglycemia is defined as blood glucose values below 70mg/dL. It is the greatest immediate danger to students with diabetes. Low blood sugar can develop within minutes and requires immediate attention. Never send a child with suspected “low blood sugar” anywhere alone. |

### B. Causes for Hypoglycemia
1. Too much insulin
2. Skipping or delaying meals or snacks
3. Not eating enough carbohydrate to cover the amount of insulin taken
4. Activity
5. Combination of any of the above

### C. Symptoms may vary from person to person and from episode to episode. Warning signs and symptoms of low blood sugar happen suddenly and can be mistaken for misbehavior. Many students will not have an awareness of low blood sugar symptoms. |

### D. Mild/Moderate Symptoms
1. Shakiness
2. Weakness
3. Dizziness
4. Cold, clammy skin
5. Hunger
6. Drowsiness
7. Sweating
8. Paleness
9. Rapid heart beat
10. Visual disturbances
11. Complaining of “feeling funny”

### Additional Resources
12. Numbness or tingling of lips
13. Yawning
14. Headache
15. Confusion
16. Inability to concentrate
17. Changes in behavior (irritability, crying, combativeness)
18. Slurred speech
19. Nausea

E. Severe Symptoms:
1. Inability to swallow
2. Unconsciousness
3. Seizures

F. Prevention of Hypoglycemia
1. Students should check blood sugar routinely
2. Blood glucose testing in the classroom should be permitted if the student is deemed proficient by the parent, health care provider, and school nurse
3. Meals and snacks should be eaten on a regular schedule
4. Meals and snacks should not be skipped
5. Students should be allowed to eat in the classroom
6. Injection sites should be rotated
7. The exact amount of insulin administered should be double checked
8. Plan for extra food and/or reducing insulin amounts before exercise, in accordance with the DMMP
9. For overnight school activities, increase the bedtime snack on unusually active days to avoid hypoglycemia during the night

Hyperglycemia

A. Hyperglycemia is defined when the level of blood glucose is greater than the goal range. In short term, hyperglycemia can result in poor academic performance by interfering with memory, the ability to concentrate and critical thinking skills. Over long periods of time, even moderately high blood glucose levels can lead to serious complications such as:
1. Blindness
2. Heart disease
3. Kidney failure
4. Amputations

http://www.joslin.org/info/why_cant_i_exercise_with_ketones.html
B. Causes for Hyperglycemia
   1. Taking too little insulin or insulin that has expired or been stored incorrectly
   2. Ingesting carbohydrates not covered by the appropriate amount of insulin
   3. Decrease in the usual amount of exercise or activity
   4. Having an illness, infection, or injury
   5. Being stressed or emotionally upset
   6. Having hormone fluctuation as with menstrual cycles, growth spurts or using certain medications
   7. Rebounding from a low blood sugar
   8. No apparent reason

C. Mild Symptoms:
   1. Increased thirst
   2. Frequent urination
   3. Fatigue/sleepiness
   4. Increased hunger
   5. Loss of concentration
   6. Blurred vision
   7. Urine ketones (0-small)

D. Moderate Symptoms:
   1. Sweet breath
   2. Dry mouth
   3. Nausea
   4. Stomach cramps
   5. Vomiting
   6. Urine ketones (moderate-large)

E. Severe Symptoms:
   1. Labored breathing
   2. Very weak
   3. Confused
   4. Unconscious
   5. Urine ketones (moderate-large)

F. Exercise and Ketones
   Glucose is released into the bloodstream in response to the need for energy caused by exercise. If enough insulin is not available to utilize the glucose, then the body uses free fatty acids for energy. The use of free fatty acids for energy results in a byproduct called ketones.
Ketones accumulate in the blood and also spill over into the urine. The presence of ketones is called "ketonuria." Dehydration and ketone build-up can result in ketoacidosis, which is a medical emergency. The presence of ketones in someone with type 1 diabetes shows a dangerous lack of insulin and the immediate need for more insulin. Exercise, at this time, will only burn more fat and produce more ketones.

**G. Prevention:**

1. Students should follow the recommended management plan:
   a. Regularly scheduled mealtimes
   b. Blood glucose monitoring before meals, bedtime and with signs or symptoms of low or high blood sugar and as needed for activity
   c. Take medications as recommended
   d. Include regular activity as part of a healthy lifestyle
2. Ensure diabetes medications are administered appropriately

### Social and Emotional Issues

- Understand social and emotional issues children may face
- Know how to address social and emotional issues

### A. Emotional and Social Issues:

Students with diabetes must cope with the usual developmental issues of growing up but also with learning to manage this complex chronic disease.

1. Diabetes can effect every facet of life, complicating the task of mastering normal developmental challenges. For the most part, children do not want to be singled out or made to feel different from their peers.
2. Diabetes care tasks, however, can set them apart and make them feel angry or resentful about having diabetes.
3. Children react differently to having diabetes. They may be accepting, resentful, open to discussing it, or attempt to hide it. Often, the same child will experience all of these feelings over time.
4. 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 others students.
5. Some children who have diabetes will have difficulty coping and knowingly compromise their management (not necessarily to intentionally cause harm to themselves). It is necessary for school staff to identify students who might be struggling and collaborate with parents/family and the student’s healthcare provider to assist the student in appropriate management.

support. This may include assisting with record keeping, glucose monitoring, insulin or oral medication administration and monitoring nutrition.

6. Diabetes can be a focal point for conflict within families. One of the main developmental goals for children and adolescents is to become increasingly independent from their parents/guardian. Yet, diabetes may compromise independence because the parents/guardian are concerned about their child’s ability to perform diabetes self-care tasks and take responsibility for their diabetes. The parents/guardian, who are ultimately responsible for their child’s well-being, may be reluctant to allow usual independence in children or teens who have not demonstrated independent diabetes self-care tasks. This parental concern can lead to increasing struggles with independence, oppositional behavior, and rebellion.

7. Children with type 2 diabetes may be struggling with maintaining a healthy nutrition goal. The parents/guardian and school personnel can help by encouraging them to make healthy food choices and participate in physical activity.

8. Increasingly, depression is being recognized as quite common among children and teens, and even more so in those with diabetes. The student’s personal diabetes health care team and school health team must be aware of emotional and behavioral issues and refer students with diabetes and their families for counseling and support as needed.

---

**Self-Management and Supports for Self-Management**

- Understand the various challenges that diabetes may have on social and emotional development
- Know how to support students
- Be able to recognize age-appropriate expectations for

**A. Support of Developmentally Appropriate Self-Management of Diabetes Care**

1. In addition to dealing with the usual developmental issues that are associated with growing up, children with diabetes must also learn to manage the complexities of this chronic illness. Diabetes impacts all aspects of someone’s life and can complicate how the child works through normal developmental challenges.

2. Children, in general, do not want to be different from their peers. Thus they may feel conflicting pressures to comply with their DMMP but also to fit in with their peers. It is essential that the student feel supported and that the staff be aware of emotional and behavioral issues that may need referral.

---

B. Self-management

1. Children and youth should be allowed to provide their own diabetes care at school to the extent that it is appropriate based on the student’s development and diabetes self-care skills.
2. The extent of the student’s ability to participate in diabetes care should be agreed upon by school personnel, the parent/guardian, and the health care team, as necessary.
3. The ages at which children are able to perform self-care tasks are variable, depend on the individual, the child’s capabilities and willingness to provide self-care.
4. The DMMP and the plans of care will specify which tasks the provider considers the child to have mastered and the ones for which the student needs assistance.
5. Regardless of the level of the student’s independence, a student experiencing symptoms of either high or low blood glucose may need someone to assist them.

C. Ways to support the student’s healthy response to diabetes

1. Understand that all children with diabetes are different and react differently to symptoms of low or high blood glucose.
2. Try not to draw attention to the child’s diabetes.
3. Be inconspicuous in your reminders about snacks and self-care tasks.
4. Do not label children with diabetes. Always use person first language (e.g. a student with diabetes), rather than “the diabetic kid.”
5. Do not sympathize, however empathize and learn what you can do to support them.
6. The student should always be prepared to cope with hypoglycemia. Ensure that the child has treatment for low blood sugars and/or has snack foods available while in school or on school related activities. (The parent or guardian is responsible for providing snacks, not the school district.)
7. Never leave the child with diabetes alone if they are experiencing symptoms of low blood glucose.
8. The child with diabetes needs monitored yet unrestricted access to the bathroom and to water.
9. Be patient, variations in blood glucose can interfere with the student’s ability to concentrate or perform usual activities.
10. Educate yourself about diabetes and maintain communication with the parents/guardian/family and the child’s healthcare team.

D. Barriers to Appropriate Diabetes Management:
   1. Lack of knowledge or fear in administering care
   2. Feelings of fear or embarrassment of low blood glucose symptoms
   3. Not taking the appropriate dose of insulin or oral medication
   4. Consuming incorrect amount of carbohydrates at meals/snacks
   5. Not complying with appropriate self-care tasks
   6. Physiological changes of adolescence

E. Age Appropriate Self-Care Guidelines
   1. Toddlers and preschool-aged children
      a. Usually unable to perform diabetes care tasks independently
      b. Need adult to provide all or most aspects of care
      c. Can determine which finger to prick, and choose and injection site
      d. May collect own urine for ketone check
      e. Can turn on glucometer
      f. May assist with recording results
      g. Can begin to identify symptoms of low blood glucose
   2. Elementary school-aged children
      a. May be able to perform their own blood glucose checks, but still need adult supervision and interpreting appropriate actions to take depending on blood glucose result
      b. Begin to learn, with adult supervision, some self-care tasks such as:
         1. Insulin administration by syringe, pen or pump
         2. Meal planning
         3. Recognition of foods that contain carbohydrates
         4. Carbohydrate counting
         5. Ketone testing (blood or urine)
         6. Record keeping related to self-care tasks
      c. Begin to understand the impact of insulin, physical activity and nutrition on blood glucose levels
      d. Usually able to recognize and tell an adult they feel
Middle and high school-aged children
a. Usually able to provide self-care, depending on the length of diagnosis and the level of maturity
b. Should be encouraged and empowered to be independent with self-care
c. Will need help if experiencing low blood glucose

<table>
<thead>
<tr>
<th>Content Specification</th>
<th>Learning Objective</th>
<th>Outline Summary</th>
<th>Resources for the Trainer</th>
<th>Assessment Tools</th>
</tr>
</thead>
</table>
| Emergency Plans       | • Understand the content /elements of an emergency plan | A. **Emergency Plan Overview**
  1. Each student diagnosed with diabetes should have an emergency plan and diabetes emergency kit (see description in “Disaster Planning”)
  2. The emergency plan should be written and distributed to all the non-licensed school personnel who have responsibility for the student with diabetes during the school day and school sponsored activities.
    a. All school personnel who interact with the student in a supervisory role such as, classroom and special subject teachers, resource teachers, bus drivers, and cafeteria staff should receive a copy of the plan and opportunity for training and access to the school nurse for periodic updates in training.
  3. The emergency plan is a tool for school staff to instruct on how to recognize and treat hypoglycemia and hyperglycemia and what to do in the event of an emergency and is derived from the IHP and provides staff with appropriate action steps in time of crisis.
  4. Components of an emergency plan include:
    a. Emergency contact information
    b. Sign/symptoms that identify the situation as a health crisis
    c. Step-by-step actions to be taken in the event of a health crisis
    d. Basic information on the underlying health condition may or may not be included | |

| Educational Supports: 504 Plans and IEPs | • Understand the educational /learning impact of diabetes | A. **Section 504 of the Rehabilitation Act of 1973** protects individuals with disabilities against discrimination because of their disability, in any program or activity receiving federal financial assistance.
B. In order to provide for the needs of a student with disabilities while at | |
Understand what types of accommodations are commonly needed for students with diabetes
Understand the process for development of a 504 plan or IEP

<table>
<thead>
<tr>
<th>Field Trips and Special Events</th>
<th>A. With proper planning for coverage by the school nurse or trained diabetes personnel and possible adjustments to insulin dosage and meal plans, students with diabetes can participate fully in all school-sponsored activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B. Although there usually are no forbidden foods in a meal plan for students with diabetes, school parties often include foods high in carbohydrates and fats. Serving more nutritious snacks will be healthier for all students and will encourage good eating habits. The parents/guardian should decide whether the student with diabetes should be served the same food as other students or food provided by the parents/guardian. If possible, give the parents/guardian advance notice about parties so they can incorporate special foods in the student’s meal plan or adjust the insulin dosage.</td>
</tr>
<tr>
<td></td>
<td>C. Students with diabetes must be allowed to attend school-sponsored field trips. Although it is not unusual to invite the parents/guardian to chaperone field trips, parental attendance should never be a prerequisite for participation by students with diabetes. The school nurse or trained diabetes personnel should accompany the student with diabetes on field trips. They should ensure that all of the student’s snacks and supplies for checking blood glucose, administering insulin, and treating hypoglycemia are packed and taken on the trip.</td>
</tr>
<tr>
<td></td>
<td>D. Diabetes management strategies for school-sponsored field trips should be included in the student’s health care and education plans. The plan for coverage and care during school-sponsored extracurricular activities and field trips that take place outside of school hours also should be carefully noted in the student’s health care and education plans. As with field trips, school, school officials may develop a Section 504 Plan. In cases where the student’s disability is diabetes, a Section 504 Plan should outline the accommodations the student needs in order to access the education environment</td>
</tr>
</tbody>
</table>
|                               | C. Schools may place health care needs on an Individual Education Program. Samples of accommodation might include:
  1. Providing for the administration of insulin
  2. Providing for the administration of glucagon
  3. Allowing students free access to food or water
  4. Assisting the student with blood glucose check |
|                               | D. School districts may have their own form for developing a Section 504 Plan. |
the school nurse or trained diabetes personnel must be available at these activities.

<table>
<thead>
<tr>
<th>Disaster Planning</th>
<th>A. The parents/guardian must provide an emergency supply kit for use in the event of natural disasters or emergencies when students need to stay at school. This kit should contain enough supplies for at least 72 hours to carry out the medical orders in the DMMP.</th>
<th></th>
</tr>
</thead>
</table>
|  | B. **Emergency Care Kit**  
1. The emergency kit should be kept in a secure location; the location should be made aware to the student and to any non-licensed school staff member who may be treating hypoglycemia.  
2. If the student leaves the campus to go on a field trip, the emergency kit should go with the student.  
3. The label on the kit should state “Diabetes Emergency Kit,” along with the student’s name. |  |
|  | C. **Examples of what should be included in a Diabetes Emergency Care Kit include:**  
1. Blood glucose meter  
2. Testing strips  
3. Lancets for meter  
4. Batteries for meter  
5. Insulin and supplies  
6. Insulin pump and supplies including syringes  
7. Other medications  
8. Antiseptic wipes  
9. Carbohydrate-containing snacks  
   a. Cheese crackers  
   b. Peanut butter crackers  
10. Hypoglycemia treatment supplies  
   a. Quick acting glucose source  
   b. Carbohydrate snacks  
   c. Protein snacks  
11. Water |  |
## Section 2: Skills

### 2-A Implementing the Emergency Plan

<table>
<thead>
<tr>
<th>Content Specification</th>
<th>Learning Objective</th>
<th>Outline Summary</th>
<th>Resources for the Trainer</th>
<th>Assessment Tools</th>
</tr>
</thead>
</table>
| Recognition of Symptoms of Hypoglycemia | • Be able to identify signs and symptoms of mild to moderate and severe signs of hypoglycemia based on the individual  
• Understand Emergency Plan germane to observed symptoms | A. Mild to Moderate Signs  
1. Shakiness  
2. Weakness  
3. Dizziness  
4. Cold, clammy skin  
5. Hunger  
6. Drowsiness  
7. Sweating  
8. Paleness  
9. Rapid heart beat  
10. Visual disturbances  
11. Complaining of “feeling funny”  
12. Numbness or tingling of lips  
13. Yawning  
14. Headache  
15. Confusion  
16. Inability to concentrate  
17. Changes in behavior (irritability, crying, combativeness)  
18. Slurred speech  
19. Nausea  
 
B. Severe Signs  
1. Inability to swallow  
2. Unconsciousness (extreme cases)  
3. Seizures (extreme cases) | | Insert NASN 4.24 Hypoglycemia Checklist |
| Recognition of Symptoms of Hyperglycemia | • Be able to identify signs and symptoms of mild to moderate and severe signs of hyperglycemia based on the individual  
• Understand Emergency Plan corresponding to | A. Mild Signs  
1. Increased thirst  
2. Frequent urination  
3. Fatigue/sleepiness  
4. Increased hunger  
5. Loss of concentration  
6. Blurred vision  
7. Urine ketones (0-small) | | Insert NASN 4.25 Hyperglycemia Checklist |
### observed symptoms

**B. Moderate Signs**
- 1. Sweet smelling breath
- 2. Dry mouth
- 3. Nausea
- 4. Stomach cramps
- 5. Vomiting
- 6. Urine Ketones (Moderate-Large)

**C. Severe Signs**
- 1. Labored breathing
- 2. Very weak
- 3. Confused
- 4. Unconscious
- 5. Urine ketones (Moderate-Large)

<table>
<thead>
<tr>
<th>Administration of Glucagon</th>
<th><strong>A.</strong> Obtain glucagon kit. Wash hands (if possible) and put on gloves. If gloves are not available, do not delay treatment, but use judicious precaution to avoid blood exposures.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>B.</strong> Flip cap off of the glass vial (bottle) containing the dry powder. Remove the needle cover from the syringe.</td>
</tr>
<tr>
<td></td>
<td><strong>C.</strong> Take the fluid-filled syringe in the glucagon emergency kit and inject the fluid into the vial containing the glucagon powder. Shake gently or roll to mix until all powder is dissolved and solution is clear. Inspect medication for color, clarity, and presence of lumps. Solution should be clear and colorless.</td>
</tr>
<tr>
<td></td>
<td><strong>D.</strong> Hold the vial upside down and withdraw the prescribed amount of glucagon back into the syringe. The prescribed amount should be specified in the student’s individualized health care plan and emergency plan. Withdraw the needle from the vial. Generally, if the student weighs &gt;45 pounds, the full vial (1 cc) of glucagon may be injected. If the child weighs &lt;45 pounds, inject ½ of the solution.</td>
</tr>
<tr>
<td></td>
<td><strong>E.</strong> When possible, the injection site should be exposed and cleaned. However, glucagon can be administered through clothing, if necessary. Suggested sites include the outer thigh, upper outer buttock, or arm.</td>
</tr>
<tr>
<td></td>
<td><strong>F.</strong> Insert the needle into the selected site and inject glucagon based on the health care provider order.</td>
</tr>
<tr>
<td></td>
<td><strong>G.</strong> Withdraw the needle and press the site with a cotton ball or wipe. Massage the injection site for 10 seconds; apply bandage if needed.</td>
</tr>
<tr>
<td></td>
<td><strong>H.</strong> Do not recap syringe. Put used syringe in sharps container.</td>
</tr>
<tr>
<td></td>
<td><strong>I.</strong> Stay with the student. It may take 15-20 minutes for the student to</td>
</tr>
</tbody>
</table>
J. If it is necessary to administer Glucagon, 911 should be called and informed that glucagon was administered, and parent/guardian notified.

K. Document in Student Health Record

### 2-8 Implementing the Individualized Health Plan

**Testing for Ketones**
- Understand proper procedure for testing ketones

**A. Blood Ketone Testing**
1. Wash hands with soap and water. Put gloves on. Student’s hands must be washed as well. This is sufficient for prepping the site, however, alcohol may be used for further prepping. The site selected must be dry before pricking.
2. Place ketone testing strip into electronic meter according to manufacturer’s instructions.
3. Prepare lancing device according to manufacturer’s instructions.
4. Select a site on the top side of any fingertip. Hang the arm below the level of the heart for 30 seconds to increase blood flow.
5. Puncture the site with the lancing device. Gently squeeze the finger in a downward motion to obtain a large enough drop of blood to cover the test strip (3/16” to 1/32” in diameter).
6. Place blood onto testing strip and complete procedure according to manufacturer instructions.
7. Dispose of test strip and tissue or cotton ball in lined wastebasket. Dispose of lancing device in Sharps container.
8. Remove and dispose of gloves, wash hands.
9. If results are 0-0.6 result is “normal”, if results are 0.6-1 notify school nurse and parent. If results are >1 follow DMMP instructions and call parent to take student home for close observation and/or medical care; notify school nurse.
10. Document results in Student Health Record.

**B. Urine Ketone Testing**
1. Saturate the test strip with urine by one of the following:
   2. Student to hold test strip in urine flow.
   3. Student to urinate in cup/jar, then strip is dipped into urine.
   4. Wait for test strip to develop per directions on test strip bottle.
2. Compare color of strip to chart on bottle. Results will be read as negative, small, moderate, or large.
3. If results are moderate or large, follow instructions on DMMP and call parent to take pupil home for observation and/or medical care; notify school nurse.

**Insert NASN 4.10 Urine Ketone Monitoring Skills Checklist**

**4.11 Delegating Blood glucose/Blood Ketone Monitoring**

**4.12 Delegating Urine Ketone Monitoring**
<table>
<thead>
<tr>
<th>Administration of Insulin via Syringe</th>
<th>Understand proper procedure for insulin administration via syringe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong></td>
<td>This injection procedure is for the administration of Regular or rapid-acting insulin, not for mixing with other insulin.</td>
</tr>
<tr>
<td><strong>B.</strong></td>
<td>Training of unlicensed personnel must be done by a registered nurse or physician. Insulin should be administered only in accordance with the orders of a licensed provider and written parent/guardian authorization. Specific guidelines should be provided by the primary health care provider for the conditions (blood glucose levels) under which insulin is to be administered. Note: Parent/guardian provides necessary equipment, supplies, and medications.</td>
</tr>
<tr>
<td>1.</td>
<td>Wash hands</td>
</tr>
<tr>
<td>2.</td>
<td>Assemble equipment</td>
</tr>
<tr>
<td>a.</td>
<td>vial of insulin</td>
</tr>
<tr>
<td>b.</td>
<td>insulin syringe with needle</td>
</tr>
<tr>
<td>c.</td>
<td>alcohol prep pad</td>
</tr>
<tr>
<td>d.</td>
<td>cotton balls or spot bandage (optional)</td>
</tr>
<tr>
<td>e.</td>
<td>gloves, if done by anyone other than the student</td>
</tr>
<tr>
<td>f.</td>
<td>sharps container</td>
</tr>
<tr>
<td><strong>C.</strong></td>
<td>Check insulin type/brand for agreement with the provider’s order.</td>
</tr>
<tr>
<td><strong>D.</strong></td>
<td>Check expiration date of the vial of insulin. If this is a new bottle of insulin, remove the flat, colored cap. Record the date the bottle is opened and the initials of the person who opened the bottle on the label. Do not remove the rubber stopper or the metal band under the cap.</td>
</tr>
<tr>
<td><strong>E.</strong></td>
<td>Check expiration date of the vial of insulin. If the bottle was previously opened, also check the date it was opened.</td>
</tr>
<tr>
<td><strong>F.</strong></td>
<td>If insulin is cold, gently roll the bottle in palms or simply hold the vial in palm of the hand to warm the vial to room temperature. Injecting cold insulin may cause pain and may affect absorption.</td>
</tr>
<tr>
<td><strong>G.</strong></td>
<td>Clean the rubber top of the insulin vial with alcohol pad and let dry for a few seconds.</td>
</tr>
<tr>
<td><strong>H.</strong></td>
<td>Remove the cap from the syringe. Fill the syringe with air equal to the number of units of insulin needed. Air is always injected into the vial to prevent creating a vacuum inside the vial and to make it easier as insulin is removed. Inject air into the insulin bottle with syringe remaining in bottle, invert and pull plunger back beyond the number of units desired. Keeping the syringe in an upright position, clear any air by</td>
</tr>
</tbody>
</table>

[Insert NASN 4.15 Insulin Administration: Syringe Skills Checklist]  
[4.17 Delegating Insulin Administration by Syringe]
pulling plunger back and tapping syringe to raise air bubbles to the top. Push plunger to desired amount of units, ensuring that no air bubbles remain and withdraw the syringe. Air bubbles left in the syringe can alter the desired dose of insulin. There is minimal danger from injecting an air bubble into the tissue.

I. Slip needle back into cap without touching cap or needle.
J. Put on gloves, select the site to be used, prep with alcohol and let dry. The best absorption is in the lower abdomen, followed by the upper, outer arms, tops of the thighs and lastly the upper areas of the buttocks. If area is dirty, wash with soap and water and dry. Any subcutaneous tissue can be used for injection sites. Exercise and heat (like the warmth from a heating pad or whirlpool) also hastens absorption of an injected area.
K. Remove cap. Dart the needle into the identified injection site at a 90 degree angle. However, for small children, and persons with little subcutaneous fat on thin skin, you may be taught to use a 45-degree angle.
L. Inject insulin in one to five seconds. Do not aspirate or pull back the plunger.
M. Count to five, then remove needle. Do not massage the area as it irritates the tissue and hastens absorption.
N. Dispose of syringe with needle intact into a sharps container. Do Not Recap Syringe. Recapping a contaminated needle can result in a needle stick injury.
O. Document in student log the dose of insulin given, time given, site used, any reactions or problems noted, and name/initials of person who administered.

<table>
<thead>
<tr>
<th>Administration of Insulin Via Pump</th>
<th>• Understand proper insulin administration via pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Insulin pumps are computerized devices, about the size of a pager that deliver a continuous pulse of insulin. Students frequently wear their pumps hooked to their belts, or in their pants or shirt pocket, like a cell phone. Insulin is delivered through tubing that ends with a short plastic catheter or metal needle, inserted just under the skin in the fatty tissue.</td>
</tr>
<tr>
<td>B.</td>
<td>The pump must be told exactly what to do. It is programmed to deliver a “basal” amount of insulin throughout the day and boluses as needed for meals and when the wearer’s blood sugar is high. With this command, the exact amount of insulin is pumped into the thin, clear plastic tubing that delivers the insulin via the plastic needle resting just below the skin in the fatty tissue of the pump wearer.</td>
</tr>
</tbody>
</table>

Insert NASN 4.22 Insulin Pump Therapy Skills Checklist

4.23 Delegating Insulin Pump Therapy
C. The plastic needle should be changed every two or three days. With the aid of a small needle, the plastic needle is inserted through the skin into the fatty tissue and then taped in place. In newer products, the needle is removed and only a soft catheter remains in place. The insulin bolus empties out of the plastic needle and is absorbed into the body in the same way insulin injected through a syringe would be. The infusion set is where the clear plastic tube connects with the plastic needle. The student can disconnect the tube from the set for sports, showering, or any other short activity.

D. The pump delivers a basal rate of insulin (the constant base line) in much the same way as the human pancreas. Working with his or her healthcare team, the student with a pump programs the amount of insulin to be released throughout the day. Unless programmed differently, the basal settings release a constant amount of insulin throughout the day. Not all pumps are the same, but they do work in a similar manner.

E. Pumps programmed to deliver basal insulin and boluses are programmed based on carbohydrate intake and blood sugar. Pump programming includes the user’s carbohydrate ratio, correction factor and insulin action time and will do the appropriate calculation based on the carbohydrate intake and blood sugar entered in the pump. Every action a pump makes starts with the user. To use a pump one must be willing to check blood glucose levels frequently and learn how to make adjustments in insulin, food, and physical activity in response to those test results.

F. Those trained to administer insulin will be trained on the individual student’s model. In the health plan, it should specify where at school the student will keep a set of backup pump supplies and an alternate means of administering insulin, just in case there is a problem such as the pump malfunctions, cannula comes loose, the blood glucose is way above target range, or there are ketones in the blood or urine. Staff should also know how to suspend or disconnect the pump in case the student becomes unconscious or has a seizure.

<table>
<thead>
<tr>
<th>Administration of Insulin Via Pen</th>
<th>A. Insulin Administration via Pen Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Understand proper insulin administration via pen</td>
<td>1. Obtain a blood glucose reading prior to insulin administration.</td>
</tr>
<tr>
<td></td>
<td>2. Determine insulin dose with health care provider’s orders.</td>
</tr>
<tr>
<td></td>
<td>3. Wash hands.</td>
</tr>
</tbody>
</table>

http://dpi.wi.gov/ssp/w/pupil-services/school-nurse/training/medica

Insert NASN 4.16 Insulin Administration Pen Device
4. Assemble equipment:
   a. insulin pen device
   b. pen needle
   c. alcohol prep pad
   d. cotton balls or spot bandage (optional)
   e. gloves (if done by anyone other than student)
   f. sharps container

B. Procedure
1. Check insulin type/brand. This must match health care provider’s written orders.
2. Check the level of insulin remaining in the insulin cartridge. Cartridges are made for multiple doses. Ensure that enough insulin remains in the cartridge for accurate dosing.
3. Attach new needle. Remove outer plastic cap and plastic needle cover. Place outer cap on a flat surface with open end facing up. This will assist with needle disposal after insulin is given.
4. Dial in two (2) units of insulin to perform an “air shot” to “prime” the needle. Insulin should appear at the needle tip; if it does not, repeat procedure. Change in temperatures can cause air intake. This procedure ensures that any accumulated air will be released, thereby ensuring accurate insulin dosage.
5. Dial in prescribed dose.
6. Cleanse the skin with alcohol and allow to dry before administering the injection.
7. Dart the needle into the appropriate site at a 90 degree angle. However, for small children, and persons with little subcutaneous fat on thin skin, you may be taught to use a 45-degree angle.
8. Push the plunger down and inject insulin at a steady rate.
9. Count slowly to five (5) or ten (ten) and then remove the needle. Some pen manufacturers require a longer count.
10. The One-Handed Needle Recapping Method: Place the cap on a flat surface like the table or counter with something firm to "push" the needle cap against. Holding the syringe with the needle attached in one hand, slip the needle into the cap without using the other hand. Push the capped needle against a firm object to “seat” the cap onto the needle firmly using only
one hand.
   a. The needle must be changed after each injection, as leaving the pen needle attached leaves an open passageway into the insulin and contamination may occur.


<table>
<thead>
<tr>
<th>Documentation of Medication Administration</th>
<th>Understand proper methods of documentation of medication administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Documentation is commonly considered the “sixth right” of medication administration. If the legal record that medication has been ordered, a parent/guardian has given written authorization for the provision of health services per district policy and that the school staff have given the medication and/or performed procedures.</td>
<td></td>
</tr>
<tr>
<td>B. Students should have individual health records for documenting medication administration and/or completion of procedures.</td>
<td></td>
</tr>
<tr>
<td>C. Student health records are education records and are protected under the Family Education Rights and Privacy Act (FERPA). Records should be securely maintained to ensure students privacy, per school board policy.</td>
<td></td>
</tr>
<tr>
<td>D. Forms for documenting the administration of medications and treatments may vary by school district.</td>
<td></td>
</tr>
<tr>
<td>E. Student health records should be maintained in accordance with the appropriate Records Retention Schedule(s).</td>
<td></td>
</tr>
<tr>
<td>F. Each time a medication is administered to a student, a record should be kept of:</td>
<td></td>
</tr>
<tr>
<td>1. The name of person administering the medication</td>
<td></td>
</tr>
<tr>
<td>2. The name of student receiving the medication</td>
<td></td>
</tr>
<tr>
<td>3. The name of the medication</td>
<td></td>
</tr>
<tr>
<td>4. The time it was given</td>
<td></td>
</tr>
<tr>
<td>5. The dose given</td>
<td></td>
</tr>
<tr>
<td>6. The route or manner in which it was delivered</td>
<td></td>
</tr>
<tr>
<td>7. Any unusual observations or circumstances</td>
<td></td>
</tr>
<tr>
<td>G. The following documentation should be maintained for the student with diabetes:</td>
<td></td>
</tr>
<tr>
<td>1. Signed authorizations, updated annually by a parent/guardian and physician and may include</td>
<td></td>
</tr>
<tr>
<td>a. Diabetes medical management plan</td>
<td></td>
</tr>
<tr>
<td>b. Individualized health care plan</td>
<td></td>
</tr>
<tr>
<td>c. Emergency plan</td>
<td></td>
</tr>
<tr>
<td>d. Authorization to give insulin and glucagon in the school</td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td>2. Medication administration documentation including:</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>a. Blood sugar results record</td>
</tr>
<tr>
<td></td>
<td>b. Carbohydrate count</td>
</tr>
<tr>
<td></td>
<td>3. Notes of any care provided by the school nurses, and unlicensed personnel, including non-diabetes related care</td>
</tr>
<tr>
<td></td>
<td>4. Description of any complications from medications and/or treatments</td>
</tr>
</tbody>
</table>


Management of Diabetes in Schools

Pre/Post Test: Knowledge of Laws and Regulations

Name: __________________________________________ Date: ________________

I. Match the laws and regulations with the statement below that is associated with it:

1. ______ Rehabilitation Act of 1973, Section 504

2. ______ Family Educational Rights and Privacy Act (FERPA)

3. ______ Annotated Code of Maryland, Education Article § 7-426.4, Public Schools – Administration of Diabetes Care Services – Guidelines

4. ______ Delegation of Nursing Functions

Statements:

A. The State Department of Education and the Department of Health and Mental Hygiene jointly shall establish guidelines for public schools regarding the administration of health care services to students with diabetes.

B. No otherwise qualified individual with a disability in the United States shall solely, by reason of his or her disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

C. A Code of Maryland Regulation which states: The nurse may delegate the responsibility to perform a nursing task to an unlicensed individual, a certified nursing assistant, or a medication technician.

D. A Federal law that, with certain exceptions, prohibits schools from disclosing personally identifiable information in a student’s education record, unless the school obtains the prior written consent of the student’s parent/guardian or of the eligible student.
Management of Diabetes in Schools

Pre/Post Test: Diabetes Basics

Name: ____________________________ Date: _________________

Please circle all the correct answers for each question.

1. Type 1 diabetes:
   a. is a metabolic disease in which the pancreas stops producing insulin
   b. is usually managed with oral medication
   c. requires the administration of insulin to maintain blood glucose levels in a target range
   d. can have long term complications involving the nerves, eyes, and kidneys if it is not well managed

2. What is the difference between Type 1 and Type 2 diabetes:
   a. Individuals with Type 1 diabetes must receive insulin to survive.
   b. Type 2 diabetes is managed by diet, weight control, exercise, and oral medications, but never insulin.
   c. Individuals with Type 1 diabetes should test their blood glucose several times a day.
   d. Type 2 diabetes only occurs in the adult population.

3. Blood glucose levels are affected by:
   a. carbohydrate intake
   b. exercise
   c. stress
   d. blood glucose monitoring

4. Stress normally causes blood glucose levels to:
   a. decrease
   b. increase
   c. stay the same
   d. stress does not affect blood glucose levels

5. Exercise normally causes blood glucose levels to:
   a. decrease
   b. increase
   c. stay the same
   d. exercise does not generally affect blood glucose levels
6. General guidelines during physical activity include:
   a. maintaining blood glucose levels lower than the target range
   b. having a source of water and a fast acting carbohydrate available for the student
   c. the possibility of disconnecting the insulin pump
   d. the possibility of testing blood glucose more frequently

7. The most common time(s) to monitor blood glucose include:
   a. before eating snacks or lunch
   b. while eating snacks or lunch
   c. immediately after eating snacks or lunch
   d. when the student exhibits symptoms of hypoglycemia or hyperglycemia

8. A student needs ________ in a snack/meal order to calculate the insulin dose for that snack/meal:
   a. the total calorie count
   b. the number of grams of carbohydrates
   c. the number of milligrams of sodium
   d. the number of grams of protein

9. Humalog, Novolog, and Apidra are all types of:
   a. rapid acting insulin
   b. short acting insulin
   c. long acting insulin
   d. oral medications for insulin

10. Administration of insulin can be done with:
    a. an insulin pen
    b. an insulin pump
    c. a glucagon pen
    d. a vial of insulin and a syringe

11. Administration of insulin can be done by:
    a. the student if she/he is allowed to self-manage their diabetes
    b. the school nurse
    c. a trained unlicensed school staff member
    d. an untrained unlicensed school staff member

12. Hypoglycemia can be caused by:
    a. too much insulin
    b. too little insulin
    c. skipping or delaying meals
    d. eating a snack or meal with carbohydrates

13. Symptoms of hypoglycemia can include:
    a. weakness
    b. hunger
    c. visual disturbances
    d. fruity breath odor
14. Hyperglycemia can be caused by:
   a. too much insulin
   b. too little insulin
   c. skipping or delaying meals
   d. having an illness, infection, or injury

15. Symptoms of hyperglycemia include:
   a. increased thirst
   b. hunger
   c. visual disturbances
   d. fruity breath odor

16. Severe hypoglycemia and severe hyperglycemia have the following in common:
   a. both should be treated by administering glucagon
   b. both should be treated by administering insulin
   c. both can lead to unconsciousness
   d. both require immediate attention

17. The administration of glucagon:
   a. is most common when a student is experiencing hypoglycemia
   b. is most common when a student is experiencing hyperglycemia
   c. should only be done if the student is conscious
   d. should trigger a call to 911

18. Ketones:
   a. appear in the blood when the body does not have enough insulin or cannot use the insulin it has to convert carbohydrates into energy
   b. should be tested when a student is experiencing hypoglycemia
   c. should be tested when a student is experiencing hyperglycemia
   d. in high levels can lead to diabetic ketoacidosis (DKA)

19. During field trips:
   a. the student does not need to test his/her blood glucose
   b. a school nurse or other trained staff member must be present only if the student cannot independently self-manage his/her diabetes
   c. a school nurse or other trained staff member must always be present
   d. parental attendance can be required for the student to attend the field trip if a trained staff member is not available to attend the field trip

20. Items that should be included in a Diabetes Emergency Care Kit include:
   a. blood glucose meter
   b. a change of clothes
   c. insulin
   d. carbohydrate containing snacks
APPENDIX F
504 Plan Brochure
Classwork and Testing

- Student may take breaks to use the water fountain or bathroom, check blood glucose, or to 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.

- The student shall be given instruction to help him/her make up any classroom assignment missed due to diabetes care, without penalty.

- The student shall not be penalized for absences required for medical appointments and/or for illness related to diabetes care.

- Teacher will repeat directions and check for understanding when student was out of room for medical purposes.

- Teacher will give extra time to complete tasks if necessary.

- Students 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, as desired.

- Privacy should be provided when student performs diabetes care including blood glucose testing, insulin administration, etc.

Extracurricular and School Sponsored Events

- Students will be permitted to participate in all school-sponsored field trips and extracurricular activities (e.g. sports, clubs, and enrichment programs) without restriction. 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 activity.

- The School Nurse (RN) will create and communicate a plan to ensure student’s diabetes care can be safely managed at any afterschool activity or field trip.

- Students must be allowed time to monitor blood glucose before standardized testing.!
A 504 plan is meant to protect a student with a disability that substantially limits one or more major life activities.

**Blood Glucose Monitoring**

- Student’s blood glucose will be monitored at the times designated in the student’s health care provider’s orders.
- Students who are deemed to be independent may self-manage anywhere, anytime, and keep their diabetes supplies with them as determined by school nurse assessment in conjunction with parent/guardian, and healthcare provider.
- Students may monitor blood glucose in the classroom or any school setting as appropriate.
- A plan should be discussed for students who are 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.
- Students who are symptomatic should be accompanied by adult staff member to the health suite.
- 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 as desired.

**Insulin Administration**

- Students who are deemed to be independent in their care may self-administer insulin based on the student’s health care provider’s orders.
- Students shall be provided with privacy for insulin administration if desires.
- 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.

**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.
- Students should be permitted to leave class to see the nurse for diabetes related issues without restriction and escorted if symptomatic.
- All teachers and substitute teachers will be provided with an emergency action/classroom plans created by the school nurse (RN).
- Trained staff must be available to administer glucagon as ordered for emergencies during school and at all school sponsored activities.
- Student access to cell phone should be evaluated for health and safety.

**Nutrition**

- Students are permitted to eat whenever and wherever necessary including school buses. Students 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.
- The student shall be permitted to have immediate access to water at all times.
- The student shall be permitted to use the bathroom without restriction.
- Student must have access to parent/guardian provided snacks, as needed.
- Student should have a quick-acting source of glucose immediately available.

**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.
- Students may monitor blood glucose before, during, and after activity/exercise based on student’s health care provider’s orders.
- Students should have fast acting carbohydrates available during physical education, physical activities, sports and recess.