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To: Superintendents of Schools

From: Dr. Betty J. Sternberg, Commissioner of Education

Date: February 6, 2004

Subject: Guidelines for Blood Glucose Self-Monitoring in School

Section 7 of Public Act 03-211, effective July 1, 2003, states:

- (a) No local or regional board of education may prohibit blood glucose self-testing by children with diabetes who have a written order from a physician or an advanced practice registered nurse stating the need and the capability of such child to conduct self-testing.*
- (b) The Commissioner of Education, in consultation with the Commissioner of Public Health, shall develop guidelines for policies and practices with respect to blood glucose self-testing by children pursuant to subsection (a) of this section. Such guidelines shall not be construed as regulations within the scope of chapter 54 of the general statutes.*

The following guidelines for blood glucose self-monitoring have been developed in response to this legislation. The legislation and these guidelines have been developed in recognition of the importance of regular monitoring of blood glucose levels as part of a student's diabetes management plan. Research has demonstrated that better blood glucose control greatly reduces the risks of long-term complications of diabetes (DCCT, 1993). By developing and implementing policies and procedures that ensure timely monitoring and prompt intervention, students with diabetes will have better short- and long-term outcomes both medically and academically.

The guidelines for blood glucose self-monitoring were developed by a committee representing a broad range of stakeholders, including school administrators, school nurses, school board members, parents, the medical community, and the Connecticut Departments of Education and Health. The guidelines offer school districts a framework for developing policies and procedures that meet the needs of individual students with diabetes and their families, as well as take into consideration the circumstances of school and community. Contained in the first three pages of the attached document, the guidelines include the following key components:

- Development of an Individualized Plan;
- Communication Needs;
- Determination of Location;
- Safety Considerations;
- Staff Education and Training; and
- Evaluation of Plans.

In addition, appendices provide information on individualized plans and a list of additional print and web-based resources, describe recommended steps for blood glucose monitoring, and supply sample tools that can be tailored for use by individual districts or schools.

If you have any questions or need additional information on the guidelines, please contact Cheryl Carotenuti, Health Consultant, 860-807-2108, Cheryl.carotenuti@po.state.ct.us or Wendy Harwin, School-Family-Community Partnerships Project Coordinator, 860-807-2105, wendy.harwin@po.state.ct.us.

Cc: School Medical Advisors
School Nurse Supervisors

These guidelines were prepared by a statewide committee chaired by Cheryl Carotenuti, Health Promotion Consultant, and Wendy Harwin, Project Coordinator, School-Family-Community Partnerships Project. The Connecticut State Department of Education would like to acknowledge the expertise, dedication and time of the following people in the preparation of these guidelines. JoAnn Ahern, Yale-New Haven Medical Center; Phil Apruzzese, CEA; Karen Bucci, Connecticut Children's Medical Center; Louise Butcher, ADA; Joseph Castagnola, Portland Public Schools; Cathy Castaldi, Parent; Susan E. Craig, Parent & JDRF; Bill Cross, Parent & JDRF; Cindy Kozak, Department of Public Health; Pat Krin, Newington Public Schools; David Larson, CAPSS; Melissa Lopez, DPH; Sheila McKay, CABE; Linda Pica, Bethel Public Schools; Paul Rossi, Parent & JDRF; Brendan Sharkey, Connecticut State Representative; Trish Vayda, Enfield Public Schools.

Guidelines for Blood Glucose Self-Monitoring in School

Introduction

Diabetes mellitus is a chronic disease that interferes with the body's ability to produce or use insulin, impairing the ability to metabolize food. Diabetes management balances careful control of diet, exercise and medication. Frequent monitoring or checking¹ of blood glucose levels is critical to diabetes management. Timely blood sugar monitoring and prompt intervention are necessary to prevent life threatening hypoglycemic episodes. Equally important, close monitoring to maintain blood glucose levels within a specified range is essential to prevent long-term complications such as heart disease, kidney failure, blindness, and serious impairment of circulation that may require amputations.²

The benefits of allowing blood glucose self-monitoring are significant. Students learn better when their blood glucose levels are within the proper range. It is important for schools to address the issue of location(s) of self-monitoring. Students who self-monitor in the classroom or in other locations outside the school health office can more readily adjust their blood sugar levels. They spend less time out of class and thus lose out on fewer learning opportunities provided to children without diabetes. They also gain independence and self-confidence, and experience fewer stigmas when monitoring is treated as a regular occurrence.

The State Board of Education encourages families, schools and medical providers to work together to develop district policies and procedures. These policies and procedures should recognize the capabilities of students to participate in the management of their diabetes, with the ultimate goal of independent management. School districts should also recognize that decisions about self-monitoring must be made on a case-by-case basis, with the participation of the family, school, and medical providers, and with respect for individual needs and preferences regarding privacy and confidentiality.

The Law

Section 7 of Connecticut's Public Act No. 03-211 states that "[n]o local or regional board of education may prohibit blood glucose self-testing by children with diabetes who have a written order from a physician or an advanced practice registered nurse stating the need and the capability of such child to conduct self-testing."

Schools must be knowledgeable of all relevant state and federal laws, and how these laws impact school district policies in this area. The most relevant federal laws include: *The Americans with Disabilities Act (ADA)*, *Section 504 of the Rehabilitation Act of 1973*, *The Individuals with Disabilities Education Act of 1976 (IDEA)*, and *The Family Education Rights and Privacy Act of 1974 (FERPA)*. Moreover, public schools in Connecticut are required to meet standards set by the Occupational Safety and Health Administration (OSHA), a regulatory agency within the U.S. Department of Labor³. As also required for any simple paper cut or bloody nose, these standards include the need for procedures to address possible exposure to blood-borne pathogens.⁴

¹ Although the terms "blood glucose testing" and "blood glucose checking" are also common, these guidelines use the term monitoring. Please note that these guidelines cover blood glucose monitoring only, not urine tests for ketones.

² The landmark *Diabetes Control and Complications Trials (DCCT)* demonstrate that better glucose control significantly decreases the risk for long-term complications. For example, risk of diabetic eye disease was reduced by 76%; kidney disease by 50%; and nerve disease by 60%. The results were so striking that investigators ended the study early so conventionally treated patients could also realize the benefits of intensive diabetes management.

³ OSHA regulates employer/employee conduct, and does not apply to students in schools.

⁴ Schools must adhere to *Universal Precautions* designed to reduce the risk of transmission of blood-borne pathogens, which include the use of barriers such as surgical gloves and other protective measures when dealing with blood and other body fluids or tissues.

Guidelines

All students with diabetes need an individualized plan to address their health and safety needs in school settings. This plan may be a Section 504 accommodation plan and/or an Individualized Health Care Plan (IHCP) with an Emergency Care Plan (ECP). (See Appendix A.) The State Board of Education recommends that district policies regarding self-monitoring of blood glucose levels in school settings address the following issues:

1. Determine a process for developing and implementing an individualized plan for the student.
 - Identify a core team to create the plan. This team should include, at a minimum, the school nurse; appropriate teacher(s); the student (if appropriate); and parent(s), guardian(s) or other family members. Other possible members include the student's health care provider, an administrator and other school staff.
 - Obtain current health information from the family and the student's health care provider(s), including how often the child should monitor his or her blood glucose level.
 - Based on the student's health status, determine the minimum frequency with which health information will be reviewed and updated.
 - Clarify the roles and responsibilities of each member of the core team. (See Appendix B.)
2. Define expectations for communication between relevant school staff, family and the student's health care provider that includes:
 - Documentation by the student's health care provider of health needs, which may be included in appropriate authorizations for medications and procedures to be performed at school.
 - Written permission for school health staff to communicate with the child's health care provider regarding diabetes management.
 - Clear expectations for minimum frequency of communication.
3. Determine appropriate location(s) for self-monitoring that take into account the individual student's needs, level of competence, health status, and independence. Location determination should be a team decision. Such a determination should also consider the safety of the child with diabetes, other students, and staff. Factors which may impact determination of self-monitoring location(s) include:
 - If self-monitoring locations are outside the health room, completion of a self-monitoring checklist and documentation of such assessment by the school nurse. (See Appendix C.)
 - Team discussion of the self-monitoring checklist.
 - Completion of a student agreement. (See Appendix D.)
 - The determination of the location(s) of self-monitoring should address accommodations during field trips, athletics, and unusual circumstances such as lockdowns or building closures.

4. Address safety concerns, including:
 - Specific procedures for disposal of lancets and any material exposed to blood, which meet OSHA *Universal Precaution* standards.⁴
 - Procedures for transportation of monitoring equipment; storage, security and access to monitoring supplies; identification of signs and symptoms of excessively high or low blood sugar levels and appropriate responses; access to food and drink; and replacement of equipment, and supplies.
5. Establish procedures ensuring that the appropriate people (including staff members such as teachers, physical education teacher, custodian, bus driver and substitute staff) are familiar with the 504 plan and/or IHCP and ECP, and are properly “educated” regarding diabetes and the importance of timely treatment. This education should include:
 - An understanding of diabetes; the signs and symptoms of high or low levels of blood glucose; familiarity with blood glucose equipment; appropriate location(s) for self-monitoring; possible adverse effects of high or low blood glucose levels on learning; and OSHA *Universal Precaution* standards.
 - Raising awareness of diabetes and the importance of blood glucose monitoring throughout the school, especially if monitoring is to occur in the classroom. However, individual student and family privacy needs and preferences should be considered.
6. Ensure periodic assessments of the effectiveness of the individual plan, location of self-monitoring and student agreement (see Appendix D), including review of the student’s competency level and changes in the school environment. Assessments should occur:
 - At least annually with the school team, including the parents or guardians and when appropriate the student.
 - More frequently if there are changes in the student’s diabetes management plan, changes in the self-monitoring abilities of the student, or whenever an adjustment to the plan is appropriate. If the IHCP is separate from the Section 504 Accommodation Plan, then the team may make modifications to the IHCP without formal review of the 504 plan.

For more information, please contact Cheryl Carotenuti, cheryl.carotenuti@po.state.ct.us, (860) 807-2108, or Wendy Harwin, wendy.harwin@po.state.ct.us, (860) 807-2105.

Appendix A: Individualized Plans

Individualized Health Care Plans

Individualized Health Care Plans (IHCPs) are usually developed for students with multiple health needs or whose health needs require daily intervention. These plans describe how the school intends to meet an individual child's daily health and safety needs in all contexts, while under the care of the school. IHCPs are developed by the school nurse, in conjunction with parents or guardians, the student, healthcare providers, and other school personnel. An IHCP includes:

- a summary of health assessments; and
- a nursing diagnosis, goals, and plans of action covering the range of possible concerns.

IHCPs should also address student needs outside of the normal school routine. Considerations for students with diabetes include:

- meal times;
- changes in schedules;
- lunch and recess times;
- school transportation;
- transitions to after school programs;
- athletic and extracurricular activities;
- accommodations for test-taking;
- field trips; and
- transitions to new schools or school buildings.

The IHCP is also used to document interventions and evaluate outcomes. IHCPs can and should be updated at least annually, and more frequently, as necessary to keep pace with changing student needs and school environment.

Emergency Care Plans

Children with special health care needs should also have a written Emergency Care Plan (ECP) that provides specific directions about what to do in a medical emergency or safety emergency such as fire drill or lockdown. The ECP is often part of the IHCP. This written plan helps the school nurse, school personnel and emergency responders react to an emergency situation in a prompt, safe and individualized manner.

ECPs should provide emergency contacts and address what to do:

- For high and low blood glucose levels;
- If an insulin pump malfunctions or becomes dislodged; and
- To ensure access to equipment and medication if not carried by student, e.g. during lockdown or fire drill.

Appendix B: Sample Core Team Roles and Responsibilities

School Nurses

- Participate in core team meetings.
- Conduct nursing assessment for Individualized Health Care Plan (IHCP).
- Conduct nursing assessment for section 504 accommodation plan, if appropriate.
- Develop section 504 accommodation plan and/or IHCP with the core team.
- Coordinate development of Emergency Care Plan (ECP).
- Ensure family provides medical supplies, materials and snacks needed at school.
- Obtain necessary physician orders.
- Conduct periodic and ongoing reviews of student needs, and update IHCP & ECP as needed.
- Plan and implement diabetes training for appropriate school staff.
- Work with family and health care providers to reinforce and strengthen student self-management skills, and promote independence.

Teachers

- Participate in core team meetings.
- Work with core team to implement the section 504 accommodation plan and/or IHCP.
- Recognize signs and symptoms of hypoglycemia and hyperglycemia.
- Be prepared to respond to signs and symptoms as identified in the IHCP.
- Provide the student with a supportive classroom environment.
- Provide classroom accommodations as outlined in the section 504 accommodation plan and/or IHCP.
- Participate in diabetes education, as specified in the student plan.
- Communicate with school team as outlined in the section 504 accommodation plan and/or IHCP.

Administrators

- Understand state and federal laws.
- Participate in the development of school policy.
- Promote a supportive learning environment for all students.
- Support and arrange for staff training.
- Work with core team to implement the individual plan as needed.
- Respect the student's confidentiality and right to privacy.
- Support and facilitate ongoing communication between family, school staff and community members.

Family Members

- Notify the school of student health needs.
- Provide written medical documentation, written authorizations, and all necessary medications, equipment, and snacks.
- Work as a full partner with the core team to develop a section 504 accommodation plan and/or IHCP.
- Educate child in self-management skills and promote independence.
- Review plans with schools at least annually and more frequently as needed.

Appendix C: Sample Self-Monitoring Checklist

Student: _____ School: _____

D.O.B.: _____ Age: _____ Grade: _____

Physical/Behavioral Limitations:

Self-Monitoring Criteria: *(These criteria are designed to assist the school nurse in making recommendations. Answers to the following provide a basis for team discussion of appropriate blood glucose self-monitoring locations.)*



- A. Medical Provider has provided written documentation that student is competent to self-monitor blood glucose level.

Comments (if any):

- B. Student knows what equipment to use to conduct blood glucose self-monitoring.

Comments (if any):

- C. Student is familiar with individual health care provider's instructions or recommended steps for blood glucose monitoring (see Appendix E), and demonstrates the ability to self-monitor blood glucose levels.

Comments (if any):

- E. Student understands how to dispose of contaminated equipment, e.g. at home or in the health office.

Comments (if any):

- F. Student understands what locations are appropriate for blood glucose self-monitoring.

Comments (if any):

G. Student is able to identify appropriate action if blood glucose level is not within normal range:
Comments (if any):

H. Student knows how to access assistance, and when it is needed.
Comments (if any):

I: An Individual Health Care Plan and Emergency Care Plan has been developed to monitor and evaluate the student's health status.

Based on Checklist:

Student has successfully demonstrated competence in independent self-monitoring.

Student is not a candidate for blood glucose self-monitoring outside the health room at this time, but the following steps will be taken to help the student move toward independence:

Comments (if any):

School Nurse Signature: _____

Date: _____

Date of next assessment: _____

Appendix D: Sample Agreement Concerning Blood Glucose Self-Monitoring

Determination of location(s) for blood glucose self-monitoring is made in accordance with an Individualized Health Care Plan (“IHCP”) and/or section 504 accommodation plan, and [*Name of School District’s*] procedures. Once location(s) for self-monitoring are determined, the following guidelines apply:

1. Self-monitoring shall be performed in the designated location(s).
2. The student shall be responsible for disposing of lancets, strips, and any other material exposed to blood either in the health office or at home.
3. The parent or guardian and student have knowledge of and agree to comply with OSHA’s *Universal Precautions*.
4. If, after monitoring the student is not within his/her target range, the student should notify the appropriate school personnel in accordance with the student’s IHCP.
5. The parent or guardian shall be responsible for maintaining the equipment and supplies needed for self-monitoring in the school.

The above information has been reviewed by the IHCP Team, the parent or guardian, and the student. The above procedures have been agreed upon by:

Parent/Guardian’s signature

Date

Student’s signature

Date

School Nurse’s signature

Date

School Administrator’s signature

Date

Appendix E: Recommended Steps for Blood Glucose Monitoring

1. Gather supplies.
2. Wash hands with warm soapy water.
3. Load device with lancet.
4. Wipe finger or other target area with warm soapy water. Let dry. Use alcohol swabs only if warm water is not available.
5. Hold lancet device to the side of the fingertip or other area, and press button to puncture skin.
6. Turn finger or area of punctured skin down to get a full drop of blood. If a larger drop is necessary, squeeze the area around the puncture.
7. Put full drop of blood on strip pad.
8. Follow directions for use of monitor or read the result on the bottle of strips.
9. Record results on log sheets provided by parent or guardian.

Adapted from: cite. Provided for general information only. Students should follow the instructions of their individual health care providers.

Appendix F: Additional Resources

Resources on the law

American School Health Association, 2000. *Guidelines for Protecting Confidential Student Health Information*.

American Diabetes Association, 2000. *Your School & Your Rights: Protecting Children with Diabetes Against Discrimination in Schools & Day Care Centers*.
http://www.diabetes.org/main/type1/parents_kids/away/scrights.jsp.

Champion, C. 1999. *Occupational Exposure to Blood-Borne Pathogens: Implementing OSHA Standards in a School Setting*.

Connecticut State Department of Education, 2003. *A Parent's Guide to Special Education in Connecticut*. Available at <http://www.state.ct.us/sde/deps/special/ParentGuide.pdf>.

Connecticut State Department of Education, 2000. *Section 504 of the Rehabilitation Act of 1975: Procedural Safeguards*. Available at <http://www.state.ct.us/sde/circ/circ00-01/c-9.pdf>.

Connecticut Department of Labor, Division of Occupational Safety and Health (CONN-OSHA)
<http://www.ctdol.state.ct.us/osha/osha.htm>.

The US Department of Education website has a wealth of information about FERPA, IDEA, etc. Go to <http://www.ed.gov>, and type the relevant acronym into the search window.

Sample IHCPs and ECPs

American Diabetes Association, 2001. *Diabetes Care*, 24 (supplement 1). "Care of Children with Diabetes in the School and Day Care Setting" S108-112.

Rapone, K & Brabston, L., 1997. *Journal of School Nursing*, 13 (No. 2). "Nursing Practice Management: A Health Care Plan for the Student with Diabetes" 30-37.

Haas, M. ed., 1993. *The School Nurse's Source Book of Individualized Healthcare Plans*. Volume I.

Arnold, M. & Silkworth, C., eds., 1999. *The School Nurse's Source Book of Individualized Healthcare Plans*. Volume II.

Print

American Diabetes Association, 2003. *Diabetes Care*, 26 (supplement 1). "Care of Children with Diabetes in the School and Day Care Setting" S131-135.

American Diabetes Association. *Diabetes Forecast*. To subscribe to this monthly magazine: 1-800-diabetes.

American School Health Association, 2002. *Health in Action*. A recent issue of this journal focuses on "Diabetes and the School Community." It is available online at <http://www.ashaweb.org/healthinaction.html>.

Diabetes Interview: To subscribe to this monthly magazine: 1-800-488-8468.

US Department of Health and Human Services, 2003. *Helping the Student with Diabetes Succeed: A Guide for School Personnel*. Available online at <http://ndep.nih.gov/materials/pubs/schoolguide.pdf>.

Websites

American Association of Diabetes Educators: <http://www.aadenet.org>.

American Diabetes Association: <http://www.diabetes.org>.

Children with Diabetes: <http://www.childrenwithdiabetes.com>.

Juvenile Diabetes Research Foundation International: <http://www.jdrf.org>.

National Association of School Nurses, 2001. *Position Statement: Blood Sugar Monitoring in the School Setting*. <http://www.nasn.org/positions/bloodsugar.htm>.

National Diabetes Education Program: <http://www.ndep.nih.gov>.

National Diabetes Information Clearinghouse, a service of the National Institute of Diabetes and Digestive and Kidney Diseases at NIH, offers a wide range of resources in English and Spanish on treatment, complications, statistics and research, including on the landmark Diabetes Control and Complications Trial at <http://diabetes.niddk.nih.gov/dm/pubs/control/index.htm>.