State of Alaska

Diabetes Management: A Guide for Training Unlicensed School Staff

STATE of ALASKA
Department of Health and Social Services

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Introduction/Purpose

To be safe, students with diabetes must have access to health services at all times in the school setting. Diabetes is generally a self-managed disease and many students with diabetes are able to perform most of their own diabetes care tasks. Such students should be permitted to do so in the school setting. However, some students, because of age, inexperience, or other factors need help with some or all of diabetes care tasks and all students will need help in the event of a diabetes emergency.

In the US, diabetes is on the rise among children and youth younger than 20 years, with an estimated 215,000 having the disease (Type 1 or Type 2) or about 0.26% of this age group.[1] A national estimate of diabetes prevalence found that 0.079% of US children aged nine or younger have diagnosed diabetes, as do 0.280% in the 10 - 19 age group. Based on these rates and the Alaska population, about 390 - 400 Alaska children and youth (≤ 19) had diabetes in 2006.[2]

Experts agree the school nurse should be the key coordinator and primary provider of care and should coordinate the training of an adequate number of school personnel to ensure that if the school nurse is not present, there is at least one adult present who is trained to perform these procedures in a timely manner. This is needed in order to enable full participation in school activities. These school personnel need not be health care professionals.[3,4,5,6,7,8] Literature provides support for the contribution unlicensed staff (also known as unlicensed assistive personnel (UAP) make in schools when there is adequate training and supervision.[9]

The American Academy of Pediatrics (AAP), National Association of School Nurses (NASN) and the American Nurses Association (ANA) offer: When a school nurse is not available at all times, trained and supervised UAP who have the required knowledge, skills, and composure should deliver specific school health services under the guidance of a licensed RN.[10]

The purpose of this guide is to provide a standardized, evidence-based training program for the school nurse to utilize in training unlicensed school staff in diabetes management in schools. Background information is provided in the beginning of this document for the school nurse. The training curriculum follows.

This training curriculum was approved by the Alaska Board of Nursing on October 25, 2012.

Definitions

Algorithm Standard of Care: A written statement describing the rules, actions, or conditions that direct patient care. Standards of care guide practice and can be used to evaluate performance. The algorithm in the Alaska Diabetes Individualized Healthcare Plan represents the standard of care for diabetes management at school.

Blood glucose: The main sugar that the body makes from the food in the diet. Glucose is carried through the bloodstream to provide energy to all cells in the body. Cells cannot use glucose without the help of insulin.

Glucose is a simple sugar (a monosaccharide). The body produces it from protein, fat and, in largest part, carbohydrate. Ingested glucose is absorbed directly into the blood from the intestine and results in a rapid increase in blood glucose. Glucose is also known as dextrose.[11]

Blood sugar is often used with an equivalent meaning. This curriculum and the ALASKA INDIVIDUALIZED HEALTHCARE PLAN – DIABETES use blood glucose.

Correction Scale: A variable, prescribed insulin dose based on the current blood glucose level. It was formerly known as *sliding scale*.

Delegation: The act of transferring to a competent individual the authority to perform a selected nursing task in a selected situation. The nurse retains accountability for the delegation. (National Council of State Boards of Nursing 2005) The National Association of School Nurses further defines delegation in the school setting as "a complex process in which the authority to perform a selected nursing task in transferred to a competent unlicensed individual (UAP) in a specific situation."

Diabetes Medical Management Plan (DMMP): The American Diabetes Association and the National Diabetes Education Program use this term when referring to the medical provider's orders for a student with diabetes. It is the basis for all of the healthcare and education plans specifically designed to help a student with diabetes with management tasks at school. The provider's orders pages in the ALASKA INDIVIDUALIZED HEALTHCARE PLAN – DIABETES function as the DMMP.

Emergency Care Plan (ECP): A detailed set of actions needed for an individual student when there is a risk of predictable medical emergency related to his/her chronic condition. The plan is written in layman's terms to include and share with school staff (such as front office staff, teachers, bus drivers, food services personnel) that may have potential responsibilities in an emergent event for the student. The ECP is sometimes called an emergency action plan. The ALASKA INDIVIDUALIZED HEALTHCARE PLAN – DIABETES (IHP) includes the ECP in the Algorithm page.

Glucose Meter: These instruments are also called *glucometers*, and are used to measure an individual's blood current glucose level.

Individualized Healthcare Plan (IHP) - This nursing care plan has student-centered goals and objectives, and describes the nursing interventions designed to meet the student's short and long-term goals. It should be:

- Written for each student with a healthcare need that affects or has the potential to affect the student's safe and optimal school attendance and academic performance.
- Developed by the school nurse in collaboration with the student, family, educators, and healthcare providers.

- Based on and developed using the nursing process.
- Include an emergency care plan (ECP), if needed.
- Implemented then evaluated at least yearly to determine need for revision and evidence of desired student outcomes.[12]

Insulin Pump: A portable device for people with diabetes that injects insulin at programmed intervals in order to regulate blood sugar levels.[13]

Trained Unlicensed School Staff – Is a school employee who has successfully completed a medication course and periodic updates (at least annually). Trained unlicensed school staff is recognized by the Alaska Board of Nursing as a school setting provider or unlicensed assistive personnel (UAP).

Unlicensed Assistive Personnel - As defined in AS 08.68.805, this term is used for persons, such as orderlies, assistants, attendants, technicians, members of a nursing client's immediate family, or the guardian of a nursing client, who are not licensed to practice practical nursing, registered nursing, medicine or any other health occupation that requires a license in this state." 'School setting provider' is included in this definition and is defined in 12 AAC 44.965 as "a person, who is employed at a school that provides educational services to students age 21 or younger. School setting providers are identified as "trained unlicensed school staff" in this document.

Guideline Determinants

Federal Requirements

Individuals with Disabilities Education Act (IDEA) [14], **Section 504 of the Rehabilitation Act**[15] and the **Americans with Disabilities Act (ADA)**[16] require that each student with diabetes attending public school be able to participate fully in the academic program. Specifically, this means that students must have access to necessary health care during the school day and for school-sponsored activities, even when they occur outside regular school hours. These laws require that health services for complex student health needs be provided so that students can access their education. Immediate access to glucagon is critical and vital to the effectiveness of these life-saving interventions. In addition to other needs, students with diabetes require management of injectable medications (insulin and glucagon) for use during school and school-sponsored activities.

Family Educational Rights and Privacy Act (FERPA) [17] specifies when student health information may be shared and when it may not. FERPA protects the confidentiality of student health information. Student health information must be kept private except for situations "where disclosure serves a compelling purpose", is required by law or when parental permission is obtained.

Occupational Safety & Health Administration's (OSHA) Bloodborne Pathogen Standard (29 CFR 1910.1030)[18] prescribes safeguards to protect workers against the health hazards caused by bloodborne pathogens. The school's required Exposure Control Plan identifies the safeguards for handling blood and body fluids. These safeguards include identification and training of staff that are most at risk for exposure, utilization of Universal Precautions for all blood and body fluids, personal protective equipment (PPE) to prevent exposure, engineering controls in managing contaminated sharps, and proper disposal of regulated waste. OSHA regulations apply only to situations in which school employees may be exposed and do not apply to students (such as a student who is self-administering insulin).

State Requirements

Alaska Board of Nursing Statutes and Regulations define and regulate the practice of every licensed registered nurse (RN) and licensed practical nurse (LPN) in Alaska. The Alaska Board of Nursing has the ultimate legal authority to interpret the laws relating to the practice of nursing. The regulations 12 AAC 44.950 through 12 AAC 44.975[19] specifically address the standards for delegation of nursing duties to other persons, including unlicensed assistive personnel (UAP). In 12 AAC 44.965(b)(3), registered nurses are authorized to delegate the administration of medication to UAP, in the school known as a "school setting provider." The school setting provider is "a person who is employed at a school that provides educational services to students age 21 or younger." The person to whom the administration of medication is delegated must successfully complete a training course in administration of medication that is approved by the board. On April 2, 2012, the Alaska Board of Nursing further clarified the delegation practices in schools by the adoption of the *Medication Administration in the School Setting Delegation Decision Tree*. The decision tree outlines the steps school nurses should follow in planning for a student who requires a medication in school. The school nurse is responsible for developing and revising the Individualized Healthcare Plan (IHP) for the student and following the steps of the decision tree for both delegable and non-delegable medications. The decision tree is included in this document (with handouts). It is also posted at the Alaska Board of Nursing website (http://www.dced.state.ak.us/occ/pnur.htm), as is the current version of the Alaska Board of Nursing Statutes and Regulations. Further guidelines for utilization of the decision tree are available in the *Medication Administration in the School Setting Delegation Decision Tree Guidelines* located on the Division of Public Health's School Nursing/School Health program website (http://www.hss.state.ak.us/dph/wcfh/school/).

Alaska Statute 14.12.115 *Indemnification*[20], requires the school board to insure or indemnify and protect school district employees against financial loss and expense, including reasonable legal fees and costs arising out of any claim, demand, suit or judgment for alleged negligence or wrongful act resulting in death or bodily injury to any person as long as the employee acts within the scope of their duties and the policies and procedures of the school district.

Alaska Statute 09.65.090 *Civil Liability for Emergency Aid*[21], states that a person who render emergency care or emergency counseling to an injured, ill, or emotionally distraught person who reasonably appears to the person rendering the aid to be in immediate need of emergency aid in order to avoid serious harm or death, is not liable for civil damages as a result of an act or omission in rendering emergency aid.

Local Requirements

School district staff, including school nurses and other staff trained to administer medications in schools, must follow their own school district policies and procedures.

Position statements (in alphabetical order by name of organization)

The American Academy of Pediatrics (AAP)

- *Guidance for the Administration of Medication in School*, 2009
  http://pediatrics.aappublications.org/content/112/3/697.full.pdf+html.

The American Association of Diabetes Educators (AADE)

- Management of Children With Diabetes in the School Setting
  http://www.diabetes.org/assets/pdfs/schools/2008aademgmtdiabschstatment.pdf

The American Diabetes Association (ADA)

- Diabetes Care in the School and Day Care Setting
  http://www.diabetes.org/assets/pdfs/schools/ps-diabetes-care-in-the-school-and-daycare-setting.pdf

The American Medical Association

- Ensuring the Best In-School Care for Children with Diabetes
  http://www.ama-assn.org/ama1/pub/upload/mm/443/csaph4a08.pdf

The International Diabetes Federation

- Rights of Child with Diabetes in the School
  http://www.idf.org/node/1240?unode=B881A461-965F-422A-B324-8D41365CFDE2

The National Association of School Nurses (NASN)

- Diabetes Management in the School Setting
  http://www.nasn.org/Portals/0/positions/2012psdiabetes.pdf
- Delegation

  http://www.nasn.org
- School Sponsored Trips, Role of the School Nurse
  http://nasn.org/PolicyAdvocacy/PositionPapersandReports/NASNIssueBriefsFullView/tabid/445/smid/853/ArticleID/304/Default.aspx

- Medication Administration in the School Setting
  http://www.nasn.org/Portals/0/positions/2012psmedication.pdf
- Unlicensed Assistive Personnel – The Role of the School Nurse
  http://www.nasn.org/Portals/0/positions/2011psuap.pdf

Roles and Responsibilities

The health, safety and educational progress of a student with diabetes depend on cooperation and collaboration among members of the school health team and the student's personal diabetes health care team.

Table 1. Diabetes Care Teams		
	School Health Team	Personal Diabetes Healthcare Team
Lead	School Nurse	Primary Care Provider
Primary document re: diabetes care in school	Individualized Healthcare Plan Emergency Care Plan	Provider Orders (aka Diabetes Medical Management Plan)
Members	Student with diabetes Parents/guardians School nurse Trained Unlicensed School Staff Others, including: Principal, School 504/IEP Coordinator, Office Staff, Student's Teacher(S), Guidance Counselor, Coach, Lunchroom Attendant, School Administrators, other school health personnel, other school staff members	Student with diabetes Parents/guardians Student's physician or other healthcare provider Registered Dietician Diabetes Educator Others, such as: medical assistant, nurse, pharmacist

Working together, school health team members implement the provisions of the student's health care and education plans to provide the necessary assistance in the school setting.

Table 2. Roles and Responsibilities for Key Participants in Planning Care for a Student with Diabetes				
	Healthcare Provider	School Nurse	Parent	Student
Planning role	• Prescribe needed care • Provide information about a student's medical needs and level of self-management skill.	Coordinate development of the IHP with parent, healthcare provider, student and other school staff. Facilitate continuous access to healthcare services for the student.	Actively participate in IHP development process. Assure communication between healthcare provider, school nurse and other school staff as needed. Advocate for student's needs.	Participate in the planning process, as appropriate for age and development. Assume responsibility for self-management as appropriate.
IHP Implementation	Monitor student's health status; communicate changes to the IHP as needed.	• Monitor and regularly re-assess quality of skills performed by unlicensed school staff to determine need for additional training. • Monitor student responses to care implemented and adjust the IHP accordingly in conjunction with health care provider, parent, student and staff.	• Provide and maintain adequate amounts of diabetes supplies at school (e.g., snacks, glucose meter strips, ketone strips, lancets, insulin, and pump components) to meet student's daily, emergency and disaster preparedness needs. • At least two weeks in advance, if possible, notify school nurse of changes in student's schedule. • Notify nurse of changes in student's health status.	• Responsibly execute assigned self-management tasks. If independent self-management, notify school nurse and parent of high or low blood glucose if so indicated in the IHP. • Participate in communication process between parent, school nurse, other school staff and healthcare provider.
Training role		Using this curriculum, train unlicensed school staff as needed to assure continuous access to health services for the student.	Participate in the training for unlicensed school staff.	

For a comprehensive list of roles and responsibilities for the individual members of the school health team, refer to the National Diabetes Education Program publication Helping the Student with Diabetes Succeed: A Guide for School Personnel, available online. The recommended actions do not represent legal checklists of what school personnel must do to comply with relevant Federal or State laws. Rather they are steps that administrators, school nurses, school personnel, the parents/guardian, and students should take to ensure effective diabetes management at school.

The health care plans include:

- ✓ Diabetes Medical Management Plan – prepared by the student's personal diabetes health care team, this plan contains the medical orders for all aspects of the student's routine and emergency care. Forms for communicating this information are included in the ALASKA INDIVIDUALIZED HEALTHCARE PLAN – DIABETES first page – DIABETES WITH INJECTION or second page – DIABETES WITH PUMP.
- ✓ Individualized Healthcare Plan (IHP) – prepared by the school nurse and parent, this plan specifies how diabetes care, as prescribed in the Diabetes Medical Management Plan, will be delivered in the school. The SCHOOL AND PARENT PART of the ALASKA INDIVIDUALIZED HEALTHCARE PLAN – DIABETES, supports this function.
- ✓ Emergency Care Plan –describes how to recognize and treat hypoglycemia or hyperglycemia and what to do in an emergency. This information is found in the ALGORITHMS page of the Alaska INDIVIDUALIZED HEALTHCARE PLAN – DIABETES, which describes the standard of care for students by blood glucose range.

Education plans include:

- ✓ 504 Plan –spells out the modifications and accommodations that are needed for these students to have an opportunity perform at the same level as their peers. All students with diabetes should have their need for a 504 plan evaluated, as required by the Americans with Disabilities Act or the Rehabilitation Act.
- ✓ Individualized Education Plan (IEP) - describes how the school district will ensure that a student who has a disability receives specialized instruction and related services. Not all students with diabetes have an IEP because they are only needed for those that require special instruction. IEP's are required under the Individuals with Disabilities Education Act (IDEA).

The State of Alaska has developed the ALASKA INDIVIDUALIZED HEALTHCARE PLAN – DIABETES form which incorporates the provider orders, standard of care for emergencies and the individualized care plan for school. This training curriculum is designed to support this form.

Training Materials Needed

This guide indicates where to locate training information about each component in the curriculum from at least one resource. School nurses should use at least one source below when training an unlicensed school staff member to perform a diabetes task. Once the trainee knows the material and can safely perform the skill in question, reviewing the alternative sources should be voluntary.

The curriculum draws on three primary resources; none of them has information specific to all of the curriculum components:

- **American Diabetes Association (*Safe at School*, *ADA School Training Curriculum*)***

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

  These linked power-point presentations with accompanying video clips were designed to help school nurses prepare school personnel to provide appropriate care to students with diabetes. The video DVD modules supplement the PowerPoint modules on the CD and could be used as an introduction to the skills taught in Section 2 of the curriculum (see following page, Curriculum Design). Many of the checklists for assessing skills included in this curriculum are based on an *ADA School Training Curriculum* presentation/video clip. Unless otherwise noted in the curriculum, the entire PowerPoint Presentation should be used when teaching a component.

- **National Diabetes Education Program (NDEP)** Helping the Student with Diabetes Succeed.

  This manual takes a comprehensive approach to diabetes management at school. As a result, it provides information for all manner of school personnel (bus drivers, coaches, etc.), and parents. It has less specific how-to direction than *ADA School Training Curriculum*. It is the primary source for much of the knowledge section in this curriculum. The reference page numbers for this document are from the printed version, not the .pdf (printed page 1 = .pdf page 7).

- Chase P. Understanding Diabetes (aka the Pink Panther Book). UCD Barbara Davis Center for Childhood Diabetes. Must purchase ($25) to print.
  This book is often used by healthcare providers to educate families about diabetes, so many parents may be familiar with it. Its content is excellent and highly detailed. School nurses may find that some of the content is extraneous to their training needs.

Some additional resources are available to support instruction for a particular task. These materials are included in the pertinent sections of the curriculum.

Curriculum Overview

Purpose – School nurses and certified diabetes educators should use this curriculum to train unlicensed school staff to safely perform diabetes management tasks.

Goal – Safe management of diabetes care tasks by trained, knowledgeable and skilled school health care team members.

Design - The curriculum is divided into two sections:

Section 1	contains the knowledge that all trainees need to have to anticipate and respond to the needs of students with diabetes,
Section 2	contains the specific skills the trainee may need to perform for a particular student with diabetes.

* Contact Michelle Cassano (mcassano@diabetes.org or (907) 272-1424) if you desire a DVD/CD copy.

All trainees must demonstrate accurate understanding of Section 1 content. Trainees need only master the skills in Section 2 that they will perform or monitor.

Each component of the curriculum includes learning objectives, training resources, pre- and post-tests and/or skills checklists for assessing and documenting the trainees' knowledge and capability in performing tasks, and links to handouts that trained staff members may wish to use as prompts as they provide assistance with diabetes management.

Glucagon is an important emergency intervention for people with diabetes. Meeting the healthcare needs of many students with diabetes may require training various staff (e.g., coaches and teachers on a field trip) to safely and appropriately administer glucagon.

Curriculum Content

Section I: Knowledge				
Component	Learning Objectives	Teaching Resources	Assessment	Handouts
A. Curriculum overview and prerequisites	• Curriculum overview • How training will be evaluated • Identify all school staff who have had First Aid and CPR training and/or who have been trained to respond to diabetic emergencies • Complete school district Bloodborne Pathogen training, which includes Universal Precautions • Review general rules for medication administration	School District Bloodborne Pathogen training unit		Universal Precautions Handout Medication Administration General Rules Handout
B. Laws and regulations • Federal law • State regulations • Local policy	• Review the Federal laws that protect students with diabetes (Rehabilitation Act, ADA, IDEA) • Review Federal law that protects student privacy (FERPA) • Review the Alaska Medication Administration Delegation Decision Tree • Describe the documents used to plan diabetes management and accommodations in schools • Review the AK Diabetes IHP and how it incorporates the provider orders, IHP, and ECP functions • Review pertinent school district policies (e.g., medication administration, delegation, 504, etc.) • Review responsibilities of trained unlicensed school staff.	ADA School Training Curriculum, *Legal considerations 2008 Diabetes Medical Management Plan 2008* NDEP Helping the Student p15-17, 18-26 Pink Panther Book: The School/Work and Diabetes	Pre/Post Test on Diabetes Management at School for Unlicensed School Personnel	General Guidelines for Diabetic Management at School Handout[†] Helping the Student p 77-79 Confidentiality Handout Blank copy of AK IHP Pertinent school district policy documents

[†] This handout contains information for ALL of the components in Section 1.

Component	Learning Objectives	Teaching Resources	Assessment	Handouts
C. Introduction to diabetes	• What is diabetes? • Identify the types of diabetes • Describe short- and long-term consequences • Describe effective management at school • Describe the basic components of diabetes care at school	ADA School Training Curriculum, *Diabetes Basics 2008* NDEP Helping the Student p11-17 Pink Panther Book: What is Diabetes?, Type 1; Type 2	Pre/Post Test on Diabetes Management at School for Unlicensed School Personnel	
D. Nutrition and physical activity	• Discuss meal planning for students with diabetes • Describe how insulin dose is dependent on carbohydrate intake • Discuss physical activity benefits for students with diabetes • Describe physical activity guidelines for students with diabetes	ADA School Training Curriculum, *Nutrition and physical activity 2008* NDEP Helping the Student p50-51, 54-56 Pink Panther Book Normal Nutrition, Exercise and diabetes		
E. Social and emotional issues and self-management	• Introduce the various challenges diabetes poses for social and emotional development • Discuss how to support the student • Recognize age-appropriate expectations for diabetes self-care • Identify which diabetes care tasks the student will perform for him/herself • Discuss the Student Agreement for Independent Care, when applicable.	NDEP Helping the Student p58-61 Pink Panther Book: Responsibilities of Children at Different Ages[‡], Teen years		Student self-management agreement

[‡] The table on Pink Panther Book p196 (p4 of this chapter) has similar information to the table on p6 of the General Guidelines Handout.

Component	Learning Objectives	Teaching Resources	Assessment	Handouts
F. Field trips and special events	• Describe appropriate accommodations for field trips, school sponsored activities and standardized testing • Discuss accommodations for field trips, school sponsored activities and special events will for the student	NDEP Helping the Student p57-58 Pink Panther Book: The School/Work and Diabetes p 256, Pink Panther Book: Vacations and Camp may also be useful, especially for out-of-state trips	Pre/Post Test on Diabetes Management at School for Unlicensed School Personnel	Field trip considerations sheet
G. Disaster planning	• Recognize why a disaster plan is needed for the student • Identify disaster or emergency supplies needed for student • Locate disaster supply kit(s)	NDEP Helping the Student p49 Pertinent school district disaster preparedness plan information		
H. Checking blood glucose levels	• Introduce blood glucose monitoring, its importance and equipment needed • Discuss when a student's blood glucose should be checked	ADA School Training Curriculum, *Blood glucose monitoring 2008* slides 1-11 NDEP Helping the Student p32-35 Pink Panther Book Monitoring Blood Sugar Control		
I. Hypoglycemia	• Define hypoglycemia • Discuss how it can be prevented • List the symptoms of low blood glucose • Describe how hypoglycemia should be treated	ADA School Training Curriculum, *Hypoglycemia 2008* NDEP Helping the Student p36-40 Pink Panther Book: Low Blood Sugar		Hypoglycemia Tip Sheet Low blood sugar management for classroom teachers, bus drivers, support staff

Component	Learning Objectives	Teaching Resources	Assessment	Handouts
J. Hyperglycemia	• Define hyperglycemia • Discuss how it can be prevented • List the symptoms of high blood glucose • Describe how hyperglycemia should be treated	ADA School Training Curriculum, *Hyperglycemia 2008* NDEP Helping the Student p41-43 Pink Panther Book Monitoring Blood Sugar Control p155-156	Pre/Post Test on Diabetes Management at School for Unlicensed School Personnel	Hyperglycemia Tip Sheet High blood sugar management for classroom teachers, bus drivers, support staff
K. Introduction to Ketones	• Define ketones and ketoacidosis	ADA School Training Curriculum, *Ketones 2008* slides 1-7 NDEP Helping the Student p43-44 Pink Panther Book, Ketones and Acidosis		
L. Insulin basics	• Describe the types of insulin • Describe insulin characteristics by type (onset, peak and duration) • Introduce insulin administration and delivery methods • Describe proper insulin storage	ADA School Training Curriculum, *Insulin basics 2008* NDEP Helping the Student p44-49 Pink Panther Book Insulin: types and activity		

Section II: Skills				
Component	Learning Objectives	Teaching Resources	Assessment	Handouts
A. Review student's IHP.	Thoroughly discuss • Providers orders • Algorithms • School care plan	Student's IHP	Individualized Healthcare Plan Checklist	Form Instructions IHP-Diabetes
B. Monitoring blood glucose	• Review equipment used to monitor blood glucose • Describe how student's glucose meter operates • Perform a blood glucose check • Interpret test results	ADA School Training Curriculum, *Blood Glucose Monitoring 2008* slides 12-20 Pink Panther Book Blood Sugar (Glucose) Testing	Glucose Monitoring Checklist	Glucose Monitoring Handout WI Tipsheet Blood Glucose Monitor Use (p5)
C. Checking ketones	• Recognize importance of monitoring ketones • Demonstrate how to perform a ketone test	ADA School Training Curriculum, *Ketones 2008* slides 8-14 Pink Panther Book Ketone Testing	Urine Ketone Monitoring Checklist	Urine Ketone Testing Handout WI Tipsheet Checking Urine Ketones (p 20)
D. Counting carbohydrates	• Introduce carbohydrate counting and discuss the carbohydrate counting meal plans • Describe factors that influence insulin dosing • Review carbohydrate counting • Demonstrate carbohydrate counting • Demonstrate correction dose determination based on the student's IHP	ADA School Training Curriculum, *Nutrition and physical activity 2008*, slides 8-10 NDEP Helping the Student p51-54 Pink Panther Book Food management and diabetes	Carbohydrate Counting and Correction Dosage Calculation Checklist	Carbohydrate Counting and Correction Dosage Calculation Handout Resource for snacks/meals

Component	Learning Objectives	Teaching Resources	Assessment	Handouts
E. Insulin administration				

1. Insulin by Syringe	• Identify types of syringes
	• Discuss injection sites and site rotation
	• Demonstrate preparation steps for insulin administration by syringe
	  • Check IHP for correct dose
	  • How to dose insulin with a syringe
	  • How to administer insulin with a syringe
		ADA School Training Curriculum, *Insulin by syringe and vial 2008*
		
		Pink Panther Book Drawing Up and Giving Insulin p 77-86
			Insulin Administration by Syringe Checklist	Insulin Administration by Syringe Handout
				
				WI tipsheet Giving Insulin via Vial and Syringe (p 16-17)

2. Insulin by pen	• Identify types of insulin pens
	• Discuss injection sites and site rotation
	• Demonstrate preparation steps for insulin administration by pen
	  • Check IHP for correct dose
	  • How to dial the correct of insulin with an insulin pen
	  • How to administer insulin via insulin pen
		ADA School Training Curriculum, *Insulin by Pen 2008*
		
		Pink Panther Book Drawing Up and Giving Insulin p 86-88
		
		Wisconsin Department of Public Instruction
			Insulin Administration by Pen Checklist	Insulin Administration by Pen Handout
				
				WI tipsheet Giving Insulin via Pen (p 18)

3. Insulin by pump	• Review insulin pumps
	• Identify supplies students using a pump need to have available
	• Demonstrate basic operating functions of the pump
	  • Check IHP for correct dose
	  • How to select the correct insulin dose
	  • How to trouble shoot pump alarms appropriately
		ADA School Training Curriculum, *Insulin by Pump 2008* slides 1-10
		
		Pink Panther Book Insulin Pumps
			Insulin Administration by Pump Checklist	Insulin Administration of Insulin by Pump Handout

Component	Learning Objectives	Teaching Resources	Assessment	Handouts

F. Glucagon Administration	• Introduce glucagon
	• Describe:
	  • The purpose of glucagon
	  • How it should be stored
	  • When it is used
	• Discuss injection sites
	• Demonstrate preparation steps for administering glucagon
	  • Steps for preparation of medication
	  • How to administer it
	• Discuss further care for the student and next steps
		ADA School Training Curriculum, *Glucagon Administration 2008*
		
		Pink Panther Book Low Blood Sugar p 43
		
		NY Glucagon Emergency Administration Training PPT slides 15-36
		UT Glucagon School Staff Training ppt slides 27-32
		
		Glucagon injection demonstration kits are also available from the pharmaceutical companies Lilly and Novo Nordisk. To obtain kits, contact the company directly.
		• Eli Lilly Glucagon Training Kit 1-800-545-5979
		• Novo Nordisk Glucagon Training Kit 1-800-727-6500
			Glucagon Administration Checklist	Glucagon Administration Handout
				
				WI Tipsheet Giving Glucagon in an Emergency (p 19)

Appendix 1: Forms

- Alaska Individualized Healthcare Plan – Diabetes
- Form Instructions Individualized Healthcare Plan - Diabetes
- Agreement for Students Independently Managing Their Diabetes
  - This form recognizes the importance of the student's participation in the planning process. It reinforces the message to the student that performing diabetes management tasks as directed and on time is a serious matter, that there is at least one person at school who knows how to help if needed, and that the student needs to keep that individual (or at least one, if there's a team) informed.
  - The parent's signature affirms parental support for the student's level of responsibility.
- Parent Authorization for Medication Administration Assistance by Trained Unlicensed School Staff

  This form should be used if a school nurse will not be available to meet the healthcare needs of a student with diabetes at school or during school-linked functions.
- Unlicensed Staff Agreement for Diabetes Care Tasks

  This form is to be completed after an unlicensed school staff person has completed training and will assume responsibility for assisting a student with diabetes management tasks.

INDIVIDUALIZED HEALTHCARE PLAN – DIABETES WITH INJECTION
HEALTHCARE PROVIDER ORDERS

EFFECTIVE DATE: | End Date:

STUDENT'S NAME: | Date of Birth:

DIABETES HEALTHCARE PROVIDER INFORMATION Name:
Phone #: Fax #: Email

SCHOOL: School Fax:

STUDENTS WITH DIABETES TREATED BY INJECTION

Monitor Blood Glucose – test ...

☒ If student has symptoms of high or, ***without moving student***, low blood glucose

☐ Before breakfast ☐ After lunch ☐ Before exercise/PE
☐ Before mid-morning snack ☐ Before afternoon snack ☐ After exercise/PE
☐ Before lunch ☐ Before leaving school ☐ Other:

Where to test: ☐ Classroom ☐ Health office ☐ Other: _____

☒ ***Without moving student if has low blood glucose symptoms***

Routine Daily Insulin Injection:

Insulin Delivery: ☐ Syringe/vial ☐ Pen

Type: ☐ rapid acting (Humalog / NovoLog / Apidra) ☐ regular or ☐ other: _____

☐ Calculate insulin dose for carbohydrate intake:

Give _____ unit(s) of rapid-acting insulin for ___ grams of carbohydrate.

Give at: ☐ breakfast ☐ AM snack ☐ lunch ☐ PM snack ☐ parties.

OR

☐ Standard daily insulin injection:

Type	Dose	Time

Correction insulin dose for high blood glucose:

Time to be given: ☐ Before lunch **ONLY** ☐ Other: _____

☐ Use correction scale

Blood glucose range	Insulin units
mg/dl	
mg/dl	
mg/dl	
mg/dl	
mg/dl	
mg/dl	
mg/dl	

☐ Use Formula to calculate correction dose

(Blood glucose- _____ ÷ _____) = _____ units of insulin.

☐ Carbohydrate coverage and pre-meal correction doses may be combined.

☐ If BG <70 before a meal treat with carbohydrate OR subtract _ unit insulin.

Do not give insulin correction dose more than once every 2 to 3 hours.

Check ketones if nausea, vomiting or abdominal pain OR if blood glucose >300 twice when tested 3 hours apart.

- Give _____ units of rapid-acting insulin for moderate and _____ units for large ketones.
- Repeat ketone test in 2 hours, and repeat additional insulin if moderate or large ketones are still present.

Exercise and Sports ☐ Student should monitor blood glucose hourly.

Parent/Guardian Authority to Adjust Insulin Dose

Dose adjustment allowed up to 20% higher or lower ☐ Yes ☐ No

Other Health Concerns and Medications

Other health concerns: | Allergies:

☐ Glucagon Dose: _____ IM or SC per thigh or arm
☐ Oral diabetes medication(s)/dose: _____ Times to be given: _____
☐ Other medication(s)/dose: _____ Times to be given: _____
_____ Times to be given: _____

HCP Assessment of Student's Diabetes Management Skills:

Skill	Independent	Needs supervision	Cannot do
Check blood glucose			
Count carbohydrates			
Calculate insulin dose			
Injection			

Note

HEALTHCARE PROVIDER SIGNATURE/STAMP: | Date:

UPDATED Change Date Initials

INDIVIDUALIZED HEALTHCARE PLAN – DIABETES WITH PUMP
HEALTHCARE PROVIDER ORDERS

EFFECTIVE DATE:	End Date:
STUDENT'S NAME:	Date of Birth:

DIABETES HEALTHCARE PROVIDER INFORMATION Name:
Phone #: Fax #: Email

SCHOOL: School Fax:

STUDENTS WITH DIABETES TREATED BY PUMP

Monitor Blood Glucose – test …

☒ If student has symptoms of high or low blood glucose

☐ Before breakfast ☐ After lunch ☐ Before exercise/PE
☐ Before mid-morning snack ☐ Before afternoon snack ☐ After exercise/PE
☐ Before lunch ☐ Before leaving school ☐ Other:
☐ All test results should be entered into pump to determine need for bolus correction.

Where to test: ☐ Classroom ☐ Health office ☐ Other: _____
☒ ***Without moving student if has low blood glucose symptoms***

Insulin Pump Information ☐ *Humalog or NovoLog or Apidra by pump*

Basal rates during school: _____ _____

☐ Place pump on suspend when blood glucose is less than ____mg/dl and re-activate it when blood glucose is at least _____ mg/dl.

Pump settings should not be changed by school staff.

Carbohydrate Bolus

Give 1 unit of insulin per
gm carbohydrate at breakfast
gm carbohydrate at AM snack
gm carbohydrate at lunch
gm carbohydrate at PM snack

Bolus should occur: ☐ before eating, or
☐ other:

_____

Correction Bolus for Hyperglycemia

Time to be given: ☐ Before lunch **ONLY** ☐ Other: _____

- Give ___ units of insulin for each ____mg/dl of blood glucose with a target blood glucose of _____mg/dl.
- **Check ketones** if nausea, vomiting or abdominal pain OR if blood glucose >300 twice when tested 3 hours apart.
  - **Via syringe,** give ____ units for moderate and ___ units of rapid-acting insulin for large ketones. Repeat blood glucose test in 2 hours, and repeat additional insulin if moderate or large ketones are still present.

☐ If BG <70 before a meal treat with carbohydrate OR subtract _ unit insulin.

Do not give correction dose of insulin more than once every 2 to 3 hours.

If infusion set comes out or needs to be changed: ☐ Change set at school ☐ Insulin via syringe every 3 hours

Exercise and Sports with Pump

Temporary Basal Decrease: ☐ No ☐ Yes (___% or ____ units for _____ minutes or ☐ duration of exercise)

✓ Student should monitor blood glucose hourly.

HCP Assessment of Student's Diabetes Management Skills:

Skill	Independent	Needs supervision	Cannot do
Check blood glucose			
Count carbohydrates			
Calculate insulin dose			
Change infusion set			
Injection			
Trouble shoot alarms, malfunctions			

Notes:

Note

Parent/Guardian Authority to Adjust Insulin Dose

Dose adjustment allowed up to 20% higher or lower ☐ Yes ☐ No

Other health concerns: Allergies:

☐ Glucagon Dose: _____ IM or SC per thigh or arm
☐ Oral diabetes medication(s)/dose: _____ Times to be given: _____
☐ Other medication(s)/dose: _____ Times to be given: _____

HEALTHCARE PROVIDER SIGNATURE/STAMP:	Date:

UPDATED	Change	Date	Initials

STUDENT'S NAME:

Student's usual LOW blood glucose symptoms:

- _ Shaky or jittery
- _ Sweaty
- _ Hungry
- _ Pale
- _ Headache
- _ Blurry vision
- _ Sleepy
- _ Dizzy
- _ Uncoordinated
- _ Irritable, nervous
- _ Argumentative
- _ Combative
- _ Changed personality
- _ Changed behavior
- _ Unable to concentrate
- _ Weak, lethargic

Student's usual HIGH blood glucose symptoms:

Hyperglycemia

- _ Increased thirst, dry mouth
- _ Frequent or increased urination
- _ Change in appetite, nausea
- _ Blurry vision
- _ Fatigue
- _ Other

Emergency levels

- _ Extreme thirst
- _ Nausea, vomiting
- _ Severe abdominal pain
- _ Fruity breath
- _ Heavy breathing, shortness of breath
- _ Increasing sleepiness, lethargy

CHECK BLOOD GLUCOSE

BELOW 70

1. Give 15 gm fast-acting carbohydrate
2. Observe for 15 minutes
3. Retest blood glucose.
   a. If less than 70, repeat 15 gm carbohydrate.
   b. If over 70, give carbohydrate and protein snack (e.g., crackers and cheese) if not eating a meal within an hour.
4. Notify school nurse and parent if no improvement
5. Student should not exercise

CALL 911 if student becomes unconscious, seizures or is unable to swallow

- Turn student on side to ensure open airway
- Give glucagon as ordered. Keep student in recovery position on side.
- If on insulin pump, either place it in 'suspend' or stop mode, disconnect it at the pigtail or clip, or cut tubing. If pump was removed, send it with EMS to the hospital.
- Notify school nurse, parent and HCP
- Wait 15 minutes; if no response, repeat glucagon.
  - If responsive, offer juice. Wait 15 minutes and give protein & carbohydrate snack.

70 – 90

1. Give 15 gm carbohydrate.
   a. If meal or snack is within 30 minutes, no additional carbs are needed.
   or
   b. If student is not going to eat within 30 minutes, give carbohydrate and protein snack.

If student's blood glucose result is immediately following strenuous activity, give 15 gm carbohydrate snack.

15 GM **FAST-ACTING** CARBOHYDRATE =

- ½ c. juice
- 3-4 glucose tablets
- Tube of glucose **gel**
- ½ c. regular (not diet) soda
- 6-7 small sugar candies (to chew)
- 1 c. skim milk

Do not give chocolate

91-125

Student may eat before exercising or recess.

126-300

No action needed.

ABOVE 300

STUDENT TREATED BY **PUMP**

1. If 2-3 hours since last bolus, treat with correction bolus via pump. Re-check in 2- 3 hrs. Trouble shoot pump function.
   - Check for redness at site, tubing for kinks or air bubble, insulin supply
2. If blood glucose still ≥ 300 mg/dl and not explained, check ketones:
   a. If ketones are *absent or small*, encourage exercise and water
   b. If ketones moderate or large:
   - Give insulin correction dose per orders **via syringe**.
   - No exercise; encourage water
3. Change infusion set or continue insulin injections every 2-3 hours via syringe.
4. Notify school nurse and parent
5. **Provide free, unrestricted access to water and the restroom.**

STUDENT TREATED BY **INJECTION**

1. Use correction scale or formula at lunch or every 2-3 hours
2. Check ketones if symptoms or if blood glucose>300 twice in a row:
   a. If ketones are *absent or small*, encourage exercise and water
   b. If ketones moderate or large:
   - No exercise; give water
   - Add units of insulin per orders
3. Notify school nurse and parent
4. **Provide free, unrestricted access to water and the restroom.**

CALL 911 if the student vomits, becomes lethargic and/or has labored breathing.
Notify school nurse, parent and HCP.

EXERCISE AND SPORTS

✓ Assure has quick access to water for hydration, fast-acting carbohydrates, snacks and monitoring equipment.
✓ Student should not exercise if blood glucose level is below 70 mg/dl or if has moderate to large ketones.

Never send a child with suspected low blood glucose *anywhere* alone.

Created by the Alaska Division of Public Health and the American Diabetes Association, Alaska Area

Revised 5/28/2013

INDIVIDUALIZED HEALTHCARE PLAN - DIABETES
SCHOOL AND PARENT PART

Student's photo

STUDENT'S NAME:

PLAN EFFECTIVE DATE:

Diabetes information Date of Diagnosis:

☐ Diabetes Type 1 ☐ Diabetes Type 2 ☐ Other

SCHOOL INFORMATION

Grade: *Teacher:* *504 plan on file:* ☐ Yes ☐ No

CONTACT INFORMATION:

Parent/Guardian 1:	Name			Call first ☐
Phone numbers:	Home	Work	Cell	Other
Parent/Guardian 2:	Name			Call first ☐
Phone numbers:	Home	Work	Cell	Other
Other/emergency:	Name:		Relationship:	
Phone numbers:	Home	Work	Cell	Other

Additional Times to Contact Parent...

Student treated by **injection**

- ☐ Blood Glucose test out of target range
- ☐ Routine Daily Insulin injections
- ☐ Correction dose

Student treated by **pump**:

- ☐ Blood Glucose test out of target range
- ☐ Carbohydrate bolus
- ☐ Correction bolus
- ☐ Infusion set comes out/needs to be replaced

STUDENT DIABETES SELF-MANAGEMENT PLAN

Student will manage diabetes independently

☐ **Student has signed** *Agreement for Student Independently Managing Diabetes*

Trained staff will supervise student self-care

- ☐ Verify blood glucose test
- ☐ Check carbohydrate count
- ☐ Confirm dose
- ☐ Supervise insulin self-injection
- ☐ Monitor bolus administration
- ☐ Trouble shoot pump alarms, malfunction
- ☐ Watch infusion set change

Trained staff will provide care

- ☐ Test blood glucose
- ☐ Count carbohydrates
- ☐ Calculate insulin dose and inject as above
- ☐ Provide insulin injection
- ☐ Administer bolus
- ☐ Trouble shoot pump alarms, malfunction
- ☐ Change infusion set

FOOD PLAN	Time	Notes	Monitor/Remind Student	
			Yes	No
Breakfast				
Morning snack				
Lunch				
Afternoon snack				
Extra snack Before exercise				
After exercise				

Food at a classroom/school party:

- ☐ Student will eat treat
- ☐ Replace the treat with a parent-supplied alternative
- ☐ Put in baggie to take home with teacher note
- ☐ Student should not eat treat
- ☐ Modify the treat as follows:

BUS TRANSPORTATION PLAN

Bus transportation: ☐ To school ☐ Home

- ☐ Test blood 10-20 minutes before boarding school bus home. **Student must have blood glucose > 70 mg/dl to board bus**; if ≤ 70, provide care based on algorithm and call to have student picked up.
- ☐ Blood test not required.

☐ Student may test blood glucose and self-manage diabetes while on the bus.

FIELD TRIPS

- ☒ **School nurse to be notified two weeks before the field trip to assure qualified personnel are available.**
- ☐ All diabetes supplies are taken and care is provided according to this Plan (copy to accompany trip).
- ☐ Lunch and snack times should not change.

SCHEDULED AFTER- OR BEFORE-SCHOOL ACTIVITIES List of clubs, sports, etc. that student anticipates:

If parent wants trained staff coverage for an activity, parent will notify school nurse two weeks before it begins

ADDITIONAL NOTES

STUDENT'S NAME:	**PLAN EFFECTIVE DATE:**

SUPPLY LIST

☑ Means student uses this item **AND** parent will provide.

☐ ***Blood Glucose Test Kit***

- ☐ Meter
- ☐ Test strips
- ☐ Lancing device and lancet
- ☐ Sharps container
- ☐ Anti-bacterial cleaner/alcohol swabs
- ☐ cotton balls
- ☐ spot band-aids

Glucose meter brand/model:

☐ ***Insulin***

Treatment by Injection

- ☐ Insulin pen
- ☐ Pre-filled syringes (labeled per dose)
- ☐ Insulin vials and syringes

Treatment by Pump

- ☐ Pump syringe
- ☐ Pump tubing/needle
- ☐ Batteries
- ☐ Tape
- ☐ Sof-serter
- ☐ Insulin vial and syringes

Infusion set type: _____

Pump type

- ☐ Medtronic MiniMed www.minimed.com (800) 826-2099
- ☐ Animas www.animas.com (877) 767-7373
- ☐ Omnipod www.myomnipod.com (800) 591-3455

☐ ***Low Blood Glucose (5-day supply)***

- ☐ Fast-acting carbohydrate drink (apple juice, orange juice, regular soda pop – NOT diet), ≥ 6 containers
- ☐ Pre-packaged snacks (e.g., crackers with cheese or peanut butter, nite bite), ≥ 5 servings
- ☐ Supply of fast-acting glucose at least equal to 15 gm per day for 5 days (e.g., ≥ 75 gm total)

☐ ***Glucagon Kit***

☐ ***High Blood Glucose***

- ☐ Urine ketone test strips/bottle
- ☐ Urine cup
- ☐ Water bottle

(Timing device may be wall clock or watch)

☐ ***3-day Disaster Kit***

- ☐ Complete daily insulin dose schedule (separate page)
- ☐ Blood glucose test kit (testing strips, lancing device, lancets, meter batteries)
- ☐ Vial of insulin and 6 syringes; insulin pens and supplies
- ☐ Insulin pump and pump supplies
- ☐ Hypoglycemia treatment supplies, ≥ 3 episodes
- ☐ Other medications, including glucagon kit
- ☐ Urine ketone strips/plastic cup
- ☐ Antiseptic wipes or hand sanitizer
- ☐ 3-day food supply with meal plan
- ☐ Other:

☐ ***Other***

SUPPLY LOCATIONS

	With student	In classroom	In health office	Other		With student	In classroom	In health office	Other
Daily breakfast, snacks and lunch					Blood glucose test kit Extra kit				
Extra snacks					Pump supplies				
Low blood glucose supplies					Insulin Daily use Extra/emergency				
High blood glucose supplies					Disaster Disaster food				
Other									

SIGNATURES

As parent/guardian of the above-named student, I give permission for the school nurse and/or other trained staff of

_____ to perform and carry out the diabetes care tasks as outlined in this Individualized Healthcare Plan.
(school)

- I have reviewed this plan and agree with the indicated instructions. I understand that the school is not responsible for equipment loss or damage, or expenses associated with these treatments and procedures.
- I understand that the information contained in this plan will be shared with other school staff on a need-to-know basis.
- I give permission to the school nurse to contact my child's physician/health care provider and discuss my child's care related to this plan.
- I will notify the school nurse whenever there is any change in my child's health status or care.
- My child and I are responsible for maintaining the necessary supplies, snacks, blood glucose meter, medications and other equipment.

_____ _____
Student's parent/guardian Date Student's parent/guardian Date

_____
School nurse Date

INDIVIDUALIZED HEALTHCARE PLAN - DIABETES
SCHOOL NURSE AND PARENT-AUTHORIZED TRAINED STAFF COVERAGE ***WORKSHEET***

School nurse will be on-site

	Mon	Tue	Wed	Thurs	Fri
First period					
Second period					
Third period					
Fourth period					
Fifth period					
Sixth period					
Seventh period					
Field Trip					
Before school starting __ AM					
After school ending __ PM					
Other					

Notes/comments:

Schedule for Parent-Authorized Trained Staff

Staff person's Name	Day(s) responsible	Time(s) responsible	Contact phone
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	From: To: or Period:	
	☐ M ☐ T ☐ W ☐ Th ☐ F	Before school starting _____AM	
	☐ M ☐ T ☐ W ☐ Th ☐ F	After school ending _____PM	
	Field trip		
	Other		
	Other		

Attach if needed
- ☐ Delegation training completion
- ☐ Parent delegation authorization
- ☐ more..

Back to form list (Appendix 1)

Alaska Individualized Healthcare Plan – Diabetes
With Injection or With Pump

Instructions

Purposes:

This healthcare plan is for all students with diabetes that monitor blood glucose at school and/or are on insulin or other hypoglycemic medication and/or have a glucagon prescription.

1. Healthcare providers should use it to prescribe a particular treatment regimen including medication(s) for school (HEALTHCARE PROVIDER ORDERS pages)
   a. It documents the ability level of the student to self-manage their diabetes.
   b. It provides the medical parameters for management of an individual student's diabetes in the school setting.
2. It describes the standard of care for school staff to follow based on blood glucose test results and is the *Emergency Care Plan* for students with diabetes. (ALGORITHMS FOR BLOOD GLUCOSE RESULTS page) NOTE: The standard of care represents the care to follow in most cases; any individualization of clinical care for the student will be reflected in the HEALTHCARE PROVIDER ORDERS.
3. School nurses and parents should use it to plan and implement individualized health interventions in the school setting, based on the Healthcare Provider Orders page. (SCHOOL AND PARENT PART pages)
   a. To support quality assurance of school health services.
   b. To document parental wishes for diabetes management-related contact by school staff.
   c. To document diabetes supplies needed at school, their locations and parental responsibility for maintaining certain supplies at school.
   d. To facilitate a safe process for the delegation of diabetes-management tasks to trained unlicensed school staff, as needed.
4. School nurses and parents *may* use it to identify times when the school nurse will not be available to provide diabetes management assistance and plan for coverage by trained school staff. (SCHOOL NURSE AND PARENT-AUTHORIZED TRAINED STAFF COVERAGE WORKSHEET)

While current, this form should be kept in the school health office or with the staff member who is assisting with the health management of the student.

Process:

1. Healthcare provider completes either the WITH INJECTION or the WITH PUMP page of the form to describe anticipated medications/treatment needs for the entire school year, and sends it to the school nurse (if known) and/or the student's parent to brings into the school.
   a. If medications and/or treatment change during the school year, a new form should be completed. Fax only the page with new orders to the school.
   b. Most categories are self-explanatory. On either form, check all boxes that apply and add information as appropriate.

      DIABETES WITH INJECTION notes:
      - In the *Routine Daily Insulin Injection* box, there are three options for Type. NPH and Lantis are examples of "other." The relevant doses/times for these injections would be listed in the "Standard daily insulin injection" table.

- Instructions in the *Correction insulin dose for high blood glucose* box are for a routine day as correction dosing is generally given at mealtime, which means that:
  - Action directed by the algorithm page supersedes "before lunch only" when it is checked because it is based on the student's symptoms and blood glucose levels.
  - The "Do not give insulin correction dosing more often than every 2 to 3 hours" statement applies to symptomatic treatment based on blood glucose levels in most instances.
- In the *Parent/Guardian Authority to Adjust Insulin Dose* box, parental authority to adjust the dose up to 20% higher or lower allows the parent to recommend dose adjustments to the nurse which the nurse could follow without contacting the health care provider **if the dose is within 20% of the range ordered by the provider**. If the dose recommended by the parent falls outside of the range, either higher or lower, the nurse would need to contact the health care provider to verify the dose.

c. Healthcare provider signs and dates the WITH INJECTION or WITH PUMP page and faxes or sends the orders to the school.

2. While meeting with the school nurse, the parent uses the boxes at the top of the ALGORITHMS page to indicate which of the symptoms of low and high blood sugar generally occur for their child.

3. Together, the school nurse, parent and the student, if student is self-managing his/her diabetes, complete the SCHOOL AND PARENT PART of the form.

   a. Most categories are self-explanatory. Check all boxes that apply and add information as appropriate.
      - In the *Student Diabetes Self-Management Plan* box:
        - The repeated skills list (from the healthcare provider section) allows parent input and school nurse assessment of the student skill level and the level of supervision or assistance needed. If the student skill level increases during the school year, this section allows the school nurse and parent to adjust the self-management plan accordingly.
        - "Trained staff" (right-side column) in this instance includes the school nurse.
        - For "Change infusion set" under "Trained staff will provide care", the school nurse is typically **the only** trained staff changing the infusion set for a student on a pump. Add this comment when needed.
      - The SUPPLY LIST is intended to promote best practice. Generally, it should be interpreted by the nurse and the parent as a guide.
      - If the parent is unable to provide urine ketone test strips, contact the American Diabetes Association (907 272-1424). They will send some.

   b. Parents and School Nurse sign and date the SCHOOL AND PARENT PART. If student will be self-managing, student signs the STUDENT SELF-MANAGEMENT AGREEMENT.

   c. Update as needed and/or on a yearly basis.

4. The school nurse may use the WORKSHEET page to identify times when he/she will regularly be unavailable to assist the student with diabetes management and plan for coverage by trained school staff.

5. File the entire document with student's health record at the end of the year or upon student withdrawal.

AGREEMENT FOR STUDENTS INDEPENDENTLY MANAGING THEIR DIABETES

Student: _____ Grade: _____

Student

- ☐ I agree to dispose of any sharps either by keeping them in my kit and taking them home, or placing them in the sharps container provided at school.
- ☐ If so indicated in my Individualized Healthcare Plan, I will notify the health office if my blood sugar is below _____ mg/dl or above _____ mg/dl.
- ☐ I will not allow any other person to use my diabetes supplies.
- ☐ I plan to keep my diabetes supplies:
  - ☐ With me
  - ☐ In the school health office
  - ☐ In an accessible and secure location (_____)
- ☐ I will seek help in managing my diabetes from _____ if I need it.
- ☐ I understand that the freedom to manage my diabetes independently is a privilege and I agree to abide by this contract.

Student's signature: _____ Date: _____

Parent/Guardian

- ☐ I agree that my child can self-manage his/her diabetes and can recognize when he/she needs to seek help from a staff member.
- ☐ I authorize my child to carry and self-administer diabetes medications and management supplies and I agree to release the school district and school personnel from all claims of liability if my child suffers any adverse reactions from self-management or storage of diabetes medications and blood glucose management products.
- ☐ I will provide back-up supplies to the health office for emergencies.
- ☐ I understand that this contract is in effect for the current school year unless revoked by my son/daughter's physician or my son/daughter fails to meet the above safety guidelines.

Parent's signature: _____ Date: _____

School nurse

- ☐ I will assure that school staff members that have the need to know about the student's condition and the need to carry their diabetes supplies with them have been notified.

School Nurse's signature: _____Date: _____

Based on a form posted on the Colorado Kids with Diabetes website (http://www.coloradokidswithdiabetes.org/index.php/Nurse-Files.html)

Back to form list (Appendix 1)

PARENT AUTHORIZATION FOR MEDICATION ADMINISTRATION ASSISTANCE BY TRAINED UNLICENSED SCHOOL STAFF

Student's Name: _____ Birthdate: _____ Grade: _____

Parent/Guardian: _____ Contact: _____

I, the parent/legal guardian, understand that in the absence of the school nurse, other school staff will assist my child _____with his/her diabetes management tasks as follows:
(Student's Name)

Task	Will Perform	Will Supervise
Test Blood Glucose		
Monitor Urine Ketones		
Count carbohydrates		
Administer insulin by syringe		
Administer insulin by pen		
Insulin pump bolus		
Administer Glucagon		

I agree to defend and hold named school employees harmless from any liability resulting from diabetes management task assistance or the manner in which it was administered, and to defend and indemnify the school district and its employees for any liability arising out of these arrangements. **I will notify the school nurse immediately if the provider orders change and understand that the nurse may contact the health care provider or pharmacist regarding such changes.**

I hereby acknowledge that I have read and understand this form and agree to its content. I authorized the nurse to train _____using a standardized
(Unlicensed School Staff Person's Name)
curriculum to administer diabetes management tasks according to my child's IHP when the school nurse is not available.

☐ I attended the training session(s) provided to the school staff identified above, and agree that the content was appropriate for assisting my child with diabetes management tasks

☐ I did not attend the training session(s) provided to the staff identified above, but have reviewed the curriculum and agree that the content is appropriate for assisting my child with diabetes management tasks.

_____ _____
Parent/Guardian Signature Date (Date)

Back to form list (Appendix 1)

UNLICENSED SCHOOL STAFF AGREEMENT FOR DIABETES CARE TASKS

Student's Name:	Date:
Trained Staff Member's Name:	
School Nurse's Name:	

Trainee has demonstrated competency in the following tasks, as documented in each training assessment.	Initials	
	RN	Trainee
BLOOD GLUCOSE MONITORING Blood glucose meter brand: _____ Blood glucose meter instructions and toll-free number attached: ☐ Yes ☐ No		
COUNTING CARBOHYDRATES		
INSULIN ADMINISTRATION BY PEN Type of insulin: ☐ Fast acting (Humalog/Novolog/Apidra) ☐ Regular		
INSULIN ADMINISTRATION BY SYRINGE Type of insulin: ☐ Fast acting (Humalog/Novolog/Apidra) ☐ Regular		
INSULIN PUMP THERAPY Insulin pump brand/model: _____ Type of infusion set: _____ Insulin pump instructions and toll-free number attached: ☐ Yes ☐ No		
GLUCAGON Dose: _____		
URINE KETONE MONITORING		

Initials in the space(s) above indicate:
I have been trained to and accept responsibility for performing tasks initialed above in accordance with the student's Individualized Healthcare Plan when the school nurse is not available. I understand I need to maintain my skills and that the school nurse will regularly assess my performance to identify any needs for review or repetition of the training I have received to perform this/these skills. I have had the opportunity to ask questions and received satisfactory answers.

I am currently certified in ☐ First Aid ☐ CPR

☐ I have received advance training in Bloodborne Pathogens.

Trainee Signature: _____ Initials: _____

I have assessed the Trainee's skills to determine the success of the training I provided. Based on this assessment, it is reasonable and prudent for the parent to authorize the trainee to perform these tasks if I am not available. This agreement will be in effect for the current school year, with reassessment of training effectiveness recommended at least every 90 days.

School Nurse Signature: _____ Initials: _____

Back to form list (Appendix 1)

Appendix 2: Checklists and Pre/Post Test

- Pre/Post Test: Diabetes Management at School for Unlicensed School Staff
- Individualized Healthcare Plan Checklist
- Glucose Monitoring Checklist
- Urine Ketone Monitoring Checklist
- Carbohydrate Counting and Insulin Dose Checklist
- Insulin Administration By Syringe Checklist
- Insulin Administration By Pen Checklist
- Insulin Administration By Pump Therapy Checklist
- Glucagon Administration Checklist

Pre/Post Test: Diabetes Management at School for Unlicensed School Staff

Staff member: _____ Date: _____

Question	Check All Correct Answers
1. Federal law requires school districts to meet the needs of their students with diabetes. What does this mean?	☐ Students with diabetes must be able to attend school in a medically safe environment. ☐ Students with diabetes must have the same access to educational and school-sponsored opportunities as students without diabetes. ☐ The health information about students with diabetes is kept confidential, including their diagnosis, unless staff "need to know" for safety purposes, it is required by law or parental permission is obtained. ☐ If a classroom treat is considered, it must be appropriate for the student with diabetes or it should not be offered.
2. What is a trained unlicensed school staff person's role in helping a student with diabetes?	☐ Help with glucose monitoring, insulin administration and other diabetes-related tasks, based on the student's IHP. ☐ Administer glucagon, if needed. ☐ Decide what the student should eat.
3. What do students with diabetes need when at school?	☐ To have food with them at all times ☐ Unlimited access to water ☐ Ready access to the restroom ☐ Ready access to blood glucose testing ☐ To consume soda whenever desired.
4. What's the difference between type 1 and type 2 diabetes?	☐ People with type 1 diabetes, must receive insulin to survive. ☐ Type 2 diabetes is managed by diet and weight control, exercise, and oral medications but never insulin. ☐ People with type 1 diabetes need to test their blood glucose several times a day. ☐ Type 2 diabetes occurs only in older people.
5. Which routine type 1 diabetes management tasks happen at school?	☐ Test blood glucose ☐ Administer insulin ☐ Eat ☐ Physical activity ☐ Sleep
6. How can diabetes emergencies be prevented?	☐ By regularly checking blood glucose levels, with appropriate action based on the test results ☐ By following a routine schedule for meals and insulin administration ☐ By keeping a regular schedule for physical activity ☐ By eliminating sweets from the diet.

7. Which of these symptoms is NOT of low blood glucose?	☐ Hunger ☐ Extreme tiredness/fatigue	☐ Changed behavior/personality ☐ Frequent urination
8. Which of these symptoms is NOT of high blood glucose?	☐ Lack of concentration ☐ Pallor, clammy skin	☐ Stomach pain ☐ Thirst
9. What do you do if you suspect a student has low blood glucose?	☐ Either test his/her blood glucose, or suggest that he/she do so. ☐ Send him/her to the health office alone ☐ Send him/her to the health office with an adult ☐ Check the IHP	
10. What do you do if you suspect a student has high blood glucose?	☐ Either test his/her blood glucose, or suggest that he/she do so. ☐ Check the IHP. ☐ Troubleshoot the insulin pump (if on a pump). ☐ Limit access to the bathroom.	
11. Where would you expect to find insulin?	☐ With a student who has diabetes (insulin syringe or pen) ☐ In the school secretary's desk ☐ In a secure refrigerator, unopened ☐ In an insulin pump	
12. When should urine ketones be checked?	☐ Two blood glucose tests, 3 hours apart have results higher than 300 ☐ Student has a stomach ache ☐ Student has fruity, sweet breath	
13. Number the steps in the order you need to take if you find a student that you know has diabetes who is unconscious.	_ Call the school nurse, parent, and healthcare provider _ Check IHP and give glucagon _ Turn student on side _ Give juice, if responsive, followed by a protein and carbohydrate snack after 15 minutes. _ Have someone call 911 _ Stay with the student, monitor for responsiveness _ Turn off or disconnect insulin pump, if present	
14. Insulin is given to	☐ Correct high blood glucose ☐ Cover carbohydrates a student is eating. ☐ Respond to an unconscious student in an emergency at school. ☐ Correct low blood glucose.	
15. Common student reactions to having diabetes that are not necessarily problematic at school include:	☐ Embarrassment ☐ Frustration and resentment ☐ Acceptance ☐ Being in conflict with parents and others who are responsible for overseeing or providing care.	

16. Students with diabetes may assume responsibility for self-management when:	☐ They are developmentally ready and perform the needed tasks accurately. ☐ The parents, health care provider and school nurse have reviewed the student's ability level and agree he/she is ready to assume responsibility. ☐ Whenever they want to. ☐ The student agrees to dispose of sharps appropriately.
17. A student going on a field trip would need	☐ To plan ahead of time for the trip preparations in order to accommodate diabetes needs. ☐ To stay at school and not go on the field trip if a school nurse or parent cannot accompany him. ☐ To take a blood glucose meter and testing supplies, juice or other source of rapid-acting glucose and snacks, and other diabetes supplies need for the duration of the field trip. ☐ To have emergency and parent phone numbers available and a means to make an emergency call (e.g., cell phone).
18. A trained unlicensed school staff person should:	☐ Refer to the student's IHP for how the individual student's diabetes care task should be managed. ☐ If the parent instructs them to, give the student a dose of insulin outside the parameters on the IHP. ☐ Contact the school nurse or parent when something unforeseen occurs not covered in the IHP. ☐ Call 911 when the student is unconscious, lethargic or has labored breathing.
19. Universal Precautions includes:	☐ Handling all blood and body fluids as if it were contaminated with transmissible infectious agents. ☐ Good hand washing. ☐ Wearing personal protective equipment, such as gloves, when handling blood and body fluids. ☐ Disposing of sharps, such as needles and lancets, in a regular plastic-lined waste container.
20. A student going to PE class should:	☐ Check his/her blood glucose, if ordered in the IHP. ☐ Not go to PE if his/her blood glucose is over 300. ☐ Should have ready access to a rapid-acting source of glucose. ☐ Should always disconnect their insulin pump to avoid getting too much insulin during exercise even though this is not indicated on the IHP.

To score, each box correctly answered (i.e., checked if 'yes', blank if 'no') counts as 1.

Score: _____number correct ÷ 83 possible (X 100) = _____ % (75 or more correct is ≥ 90%)

Pre/Post Test: Diabetes Management at School for Unlicensed School Staff

ANSWER KEY

Question	Check All Correct Answers
1. Federal law requires school districts to meet the needs of their students with diabetes. What does this mean?	☒ Students with diabetes must be able to attend school in a medically safe environment. ☒ Students with diabetes must have the same access to educational and school-sponsored opportunities as students without diabetes. ☒ The health information about students with diabetes is kept confidential, including their diagnosis, unless staff "need to know" for safety purposes, it is required by law or parental permission is obtained. ☐ If a classroom treat is considered, it must be appropriate for the student with diabetes or it should not be offered.
2. What is a trained unlicensed school staff person's role in helping a student with diabetes?	☒ Help with glucose monitoring, insulin administration and other diabetes-related tasks, based on the student's IHP. ☒ Administer glucagon, if needed. ☐ Decide what the student should eat.
3. What do students with diabetes need when at school?	☒ To have food with them at all times ☒ Unlimited access to water ☒ Ready access to the restroom ☒ Ready access to blood glucose testing ☐ To consume soda whenever desired.
4. What's the difference between type 1 and type 2 diabetes?	☒ People with type 1 diabetes, must receive insulin to survive. ☐ Type 2 diabetes is managed by diet and weight control, exercise, and oral medications but never insulin. ☒ People with type 1 diabetes need to test their blood glucose several times a day. ☐ Type 2 diabetes occurs only in older people.
5. Which routine type 1 diabetes management tasks happen at school?	☒ Test blood glucose ☒ Administer insulin ☒ Eat ☒ Physical activity ☐ Sleep
6. How can diabetes emergencies be prevented?	☒ By regularly checking blood glucose levels, with appropriate action based on the test results ☒ By following a routine schedule for meals and insulin administration ☒ By keeping a regular schedule for physical activity ☐ By eliminating sweets from the diet.

7. Which of these symptoms is NOT of **low** blood glucose?	☐ Hunger ☐ Extreme tiredness/fatigue	☐ Changed behavior/personality ☒ Frequent urination
8. Which of these symptoms is NOT of **high** blood glucose?	☐ Lack of concentration ☒ Pallor, clammy skin	☐ Stomach pain ☐ Thirst
9. What do you do if you suspect a student has low blood glucose?	☒ Either test his/her blood glucose, or suggest that he/she do so. ☐ Send him/her to the health office alone ☒ Send him/her to the health office with an adult ☒ Check the IHP	
10. What do you do if you suspect a student has high blood glucose?	☒ Either test his/her blood glucose, or suggest that he/she do so. ☒ Check the IHP. ☒ Troubleshoot the insulin pump (if on a pump). ☐ Limit access to the bathroom.	
11. Where would you expect to find insulin?	☒ With a student who has diabetes (insulin syringe or pen) ☐ In the school secretary's desk ☒ In a secure refrigerator, unopened ☒ In an insulin pump	
12. When should urine ketones be checked?	☒ Two blood glucose tests, 3 hours apart have results higher than 300 ☐ Student has a stomach ache ☒ Student has fruity, sweet breath	
13. Number the steps in the order you need to take if you find a student that you know has diabetes who is unconscious.	5. Call the school nurse, parent, and healthcare provider 3. Check IHP and give glucagon 2. Turn student on side 7. Give juice, if responsive, followed by a protein and carbohydrate snack after 15 minutes. 1. Have someone call 911 6. Stay with the student, monitor for responsiveness 4. Turn off or disconnect insulin pump, if present	
14. Insulin is given to	☒ Correct high blood glucose ☒ Cover carbohydrates a student is eating. ☐ Respond to an unconscious student in an emergency at school. ☐ Correct low blood glucose.	
15. Common student reactions to having diabetes that are not necessarily problematic at school include:	☒ Embarrassment ☒ Frustration and resentment ☐ Acceptance ☒ Being in conflict with parents and others who are responsible for overseeing or providing care.	

16. Students with diabetes may assume responsibility for self-management when:	☒ They are developmentally ready and perform the needed tasks accurately. ☒ The parents, health care provider and school nurse have reviewed the student's ability level and agree he/she is ready to assume responsibility. ☐ Whenever they want to. ☒ The student agrees to dispose of sharps appropriately.
17. A student going on a field trip would need	☒ To plan ahead of time for the trip preparations in order to accommodate diabetes needs. ☐ To stay at school and not go on the field trip if a school nurse or parent cannot accompany him. ☒ To take a blood glucose meter and testing supplies, juice or other source of rapid-acting glucose and snacks, and other diabetes supplies need for the duration of the field trip. ☒ To have emergency and parent phone numbers available and a means to make an emergency call (e.g., cell phone).
18. A trained unlicensed school staff person should:	☒ Refer to the student's IHP for how the individual student's diabetes care task should be managed. ☐ If the parent instructs them to, give the student a dose of insulin outside the parameters on the IHP. ☒ Contact the school nurse or parent when something unforeseen occurs not covered in the IHP. ☒ Call 911 when the student is unconscious, lethargic or has labored breathing.
19. Universal Precautions includes:	☒ Handling all blood and body fluids as if it were contaminated with transmissible infectious agents. ☒ Good hand washing ☒ Wearing personal protective equipment, such as gloves, when handling blood and body fluids. ☐ Disposing of sharps, such as needles and lancets, in a regular plastic-lined waste container.
20. A student going to PE class should:	☒ Check his/her blood glucose, if ordered in the IHP ☒ Not go to PE if his/her blood glucose is over 300. ☒ Should have ready access to a rapid-acting source of glucose. ☐ Should always disconnect their insulin pump to avoid getting too much insulin during exercise even though this is not indicated on the IHP.

To score, each box correctly answered (i.e., checked if 'yes', blank if 'no') counts as 1.

Score: _____number correct ÷ 83 possible (X 100) = _____ % (75 or more correct is ≥ 90%)

Back to list of checklists/pre-post test (Appendix 2)

Individualized Healthcare Plan Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
A. State name and purpose of form					
B. Identify which diabetes management tasks trained unlicensed school staff should do, which should be done by the student, and when trained unlicensed school staff need to monitor the student in performing a diabetes management task.					
C. Identify written authorization for blood glucose testing and insulin administration.					
D. Identify the type of insulin student uses during the school day.					
E. Identify where to find information about insulin dosage to cover carbohydrates.					
F. Identify where to find information about insulin dosage to reduce high blood glucose level.					
G. Identify glucagon dose, if ordered.					
H. Locate information about testing urine ketones.					
I. Determine what to do if the student's urine test indicates small or absent ketones.					
J. Determine what to do if the student's urine test indicates moderate to high ketones.					
K. Determine what to do if the student has a blood glucose level of 56.					
L. Determine what to do if the student has a blood glucose level of 82.					
M. Determine what to do if the student has a blood glucose level of 102.					
N. Determine what to do if the student has a blood glucose level of 200.					
O. Determine what to do if the student has a blood glucose level of 394.					
P. Identify what plans are in place for classroom parties and field trips.					

Q. Identify where supplies are kept and the process for notifying parents to re-supply.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Back to list of checklists/pre-post test (Appendix 2)

Glucose Monitoring Skills Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name and purpose of task and location of supplies					
II. Identify supplies					
A. IHP					
B. Meter (student's personal meter or meter provided by family) C. Manufacturer's instruction booklet, if available.					
D. Meter strips or cartridges					
E. Lancing device					
F. Disposable Gloves					
G. Tissue or cotton ball, adhesive bandage if needed					
H. Sharps container or disposal plan					
III. Preparation					
A. Review IHP					
B. Review Universal Precautions					
IV. Procedure					
A. Gather supplies					
B. Prepare work area					
C. Wash hands and put on gloves					
D. Student washes hands in warm, soapy water					
E. Turn meter on, insert strip and check codes (if applicable)					
F. Insert lancet and "cock" device. Puncture finger/alternative site with lancing device.					
G. Apply blood to strip.					
H. Place cotton ball or tissue over lanced area.					
I. Read result (correctly)					
J. Remove strip and lancet, dispose of it properly.					

K. Dispose of other supplies appropriately.					
L. Inspect area for blood spills and follow district/program protocol for cleaning.					
Skill	RN initials	learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
M. Remove gloves, wash hands					
N. Follow IHP for action plan.					
O. Document procedure on student's individual treatment record.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Urine Ketone Monitoring Skills Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name, purpose of task and location of supplies.					
II. Identify Supplies					
A. IHP					
B. Gloves					
C. Testing strips and comparison chart					
D. Cup for urine					
E. Protected testing area (e.g., waterproof disposable pad)					
F. Timing device (watch or clock with a second hand)					
III. Preparation					
A. Review Universal Precautions					
B. Review IHP					
IV. Procedure					
A. Gather supplies.					
B. Prepare work area.					
C. Wash hands puts on gloves					
D. Student collects urine					
E. Place cup of urine on protected area (waterproof disposable pad)					
F. Dip ketone testing strip in urine, tap off excess					
G. Time appropriately					
H. Compare strip to comparison chart, accurately read results					
I. Dispose of all supplies appropriately, remove and dispose of gloves, wash hands					
J. Follow IHP for action plan					
K. Document procedure on student's individual treatment record.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Back to list of checklists/pre-post test (Appendix 2)

Carbohydrate Counting and Correction Dosage Calculation Skills Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name and purpose of task and location of supplies					
II. Identify Supplies					
A. IHP					
B. Student's glucose meter and needed supplies.					
C. School menu or other resource for counting carbohydrate from meal					
D. Insulin, syringe and disposal equipment					
III. Preparation					
A. Review Universal Precautions					
B. Review IHP					
IV. Procedure:					
A. Gather supplies					
B. Observe student perform blood glucose test					
C. Document blood glucose result on student's individual treatment record – student goes to lunch.					
D. Student returns from lunch with tray (either before or after eating as determined by the IHP).					
E. Count the amount of carbohydrate intake based upon school menu and/or other resource.					
F. Determine amount of insulin needed for carbohydrate intake.					
G. Determine amount of insulin needed for blood glucose level.					
H. Determine the TOTAL amount of insulin dose.					
I. Verify insulin dose with another staff person.					
J. Complete documenting procedures on student's individual treatment record.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Back to list of checklists/pre-post test (Appendix 2)

Insulin Administration by Syringe Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name and purpose of task and location of supplies					
II. Identify supplies					
A. IHP					
B. Insulin supply					
C. Insulin syringe, needle					
D. Sharps disposal container					
E. Gloves, alcohol swabs, cotton balls					
III. Preparation					
A. Review Universal Precautions					
B. Acquire blood glucose reading					
C. Determine the insulin dose from the health care provider orders of the IHP					
IV. Procedure:					
A. Gather supplies.					
B. Wash hands and put on gloves.					
C. Prepare insulin 1. Check for the correct type and expiration date. 2. Mix NPH insulin if it is used. 3. Remove insulin bottle lid. Wipe rubber top of bottle with alcohol wipe and let dry for 5 seconds. 4. If new container, label with student's name and date.					
D. Verify the dose 1. Re-check IHP 2. Pull air into the syringe by pulling back on the plunger until its black tip is even with the line showing the dose needed.					
E. Place the vial of insulin flat on table, wipe rubber top of vial with alcohol swab, and push the needle through the center of the rubber top of the insulin.					

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
F. Push the plunger so that the air goes from the syringe into the bottle.					
G. Turn the insulin bottle and syringe upside down.					
H. Pull insulin into the syringe by slowly pulling back on the plunger until the top of its black tip is even with the line showing required number of units.					
I. Look for air bubbles. If present, tap the syringe to raise air bubbles to the top, push the air bubbles back in the bottle and repeat steps '7' and '8'.					
J. Check to make sure the correct number units is in the syringe and remove the syringe from the bottle.					
K. Verify dosage with another staff member.					
L. Use syringe to inject insulin					
1. Assist the child in choosing the injection site and swab with alcohol, if used. The area should be clean. Injection sites should be rotated.					
2. Pinch skin and insert insulin syringe needle at 45-90° angle.					
3. Push plunger in to deliver insulin and count ten seconds with skin pinched and needle in place.					
4. Remove insulin syringe and needle from skin. Apply slight pressure to the injection site with cotton ball, as needed.					
M. Dispose of syringe with needle intact into a sharps container. Do not recap needle.					
N. Remove gloves. Wash hands.					
O. Store remaining insulin according to manufacturer's recommendations.					
P. Document procedure on student's individual treatment record.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Insulin Administration by Pen Skills Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name and purpose of task, and location of supplies					
II. Identify supplies					
A. IHP					
B. Insulin cartridge					
C. Insulin pen, pen needles, manufacturer's instruction booklet, if available					
D. Sharps disposal container					
E. Gloves, alcohol swabs, cotton balls					
III. Preparation					
A. Review IHP - determine the insulin dose from health care provider orders					
B. Review Universal Precautions					
C. Acquire blood glucose reading					
IV. Procedure					
A. Gather supplies					
B. Wash hands, put on gloves.					
C. Determine type of pen that is used: • Check cartridge level, to be sure it's the correct type, and expiration date has not passed • Prefilled disposable pen: cartridge is already in the pen. • Reusable pen: most of the time insulin cartridge will be in the pen. If not, load pen cartridge into pen.					
D. Remove insulin pen cap, clean rubber stopper with another alcohol swab.					
E. Take out new packaged needle, remove its protective tab. Do not touch where the needle will attach to the pen.					
F. Carefully screw on the needle onto the end of the insulin pen and remove protective cap.					

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
G. Prime the needle. 1. Pulling out plunger on the end of the pen and dialing the pen to '2'. 2. Point pen away from people and press the plunger until dose selector returns to zero. Liquid should come out of the needle; if it doesn't repeat priming process.					
H. Verify the dose 1. Recheck IHP 2. Check that the dose selector is set at zero, then dial number of units needed. 3. Check dialed dose on pen					
I. Verify dosage with another staff member.					
J. Use pen to inject insulin					
1. Assist the child in choosing the injection site and swab with alcohol, if used. The area should be clean. Injection sites should be rotated.					
2. Pinch skin and insert insulin pen needle at 45-90° angle.					
3. Push the injection button down completely to deliver insulin and count ten seconds with skin pinched and needle in place.					
4. Remove insulin pen from skin. Apply slight pressure to the injection site with cotton ball, if needed.					
K. Do not replace the protective needle cap; carefully unscrew pen needle to remove from pen and dispose of needle in sharps container. Remove gloves and wash hands.					
L. Put insulin pen cap back on pen for storage and return pen to storage area. (If insulin needs to be refrigerated, store entire pen in refrigerator.)					
M. Document procedure in student's individual treatment record.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Insulin Administration by Pump Therapy Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name and purpose of task and location of supplies					
II. Identify supplies					
A. Student IHP					
B. Meter, lancets, strips, and alcohol wipes.					
C. Sharps container					
D. Disposable medical gloves					
E. Injectable insulin supply and syringes or insulin pen in event of pump or site failure.					
F. Extra batteries and other pump supplies (e.g., infusion set and inserter, reservoir and insulin) specific to student for pump maintenance.					
III. Preparation					
A. Review Universal Precautions					
B. Review student's IHP. 1. Determine the insulin dose from the HEALTH CARE PROVIDER ORDERS					
C. Acquire blood glucose reading.					
IV. Procedure					
A. Demonstrate basic operating functions of the pump based on manufacturer's instructions:					
1. Identify insertion set, tubing, and cartridge components of pump.					
2. Check pump status					
3. Identify the last bolus given					
4. Suspend the pump					
5. Verify the pump is not in 'no delivery' mode					
6. Change the batteries in the pump					
7. Check insulin reservoir and insertion site					

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
A. Demonstrate using pump to give bolus • If using the insulin dose calculator (Bolus Wizard) function in the pump (if present), review how to look at pump dose calculations for dose of insulin, verify dose is within parameters and activate to administer dose. • If not using Wizard feature, demonstrate how to give a manual bolus based on the carbohydrate intake and blood glucose correction calculations • Document procedure on student's individual treatment record.					
B. Troubleshoot pump malfunctions					
1. Describe symptoms of severe hypoglycemia and appropriate pump interventions.					
2. Describe symptoms of severe hyperglycemia and appropriate pump interventions.					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Glucagon Administration Checklist

Staff member: _____ Initial Training Date: _____

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
I. State name and purpose of task, and location of supplies.					
II. Identify supplies					
A. IHP					
B. Glucagon kit					
C. Alcohol wipe, cotton ball					
D. Sharps container					
E. Gloves					
III. Preparation					
A. Review Universal Precautions					
B. Review student's IHP, particularly the ALGORITHMS page. 1. Identify when procedure is indicated.					
C. Obtain glucagon and ensure it has been stored appropriately and has not expired.					
IV. Procedure					
A. Send someone to call 911.					
B. Turn student on side to maintain open airway.					
C. Gather supplies.					
D. Wash hands, put on gloves.					
E. Remove cap from glucagon vial, pull needle cover off syringe.					
F. Inject sterile water into glucagon powder.					
G. Swirl gently till dissolved (solution should be clear).					
H. Hold vial upside down. Withdraw prescribed dosage of glucagon using insulin syringe or syringe provided in kit.					
I. Check for air bubbles in the syringe. Tap any visible air to the top of the syringe and gently push on the plunger until the air is removed.					
J. Select appropriate injection sites (buttock, arm, or thigh) and cleanse with alcohol wipe, if possible.					

Skill	RN initials	Learner initials	Re-assessments		
			Date + initials x 2	Date + initials x 2	Date + initials x 2
K. Insert needle at 90 ° and inject into the tissue.					
L. Withdraw needle, apply slight pressure to injection site with cotton ball.					
M. Keep student positioned on side in recovery position; if insulin pump, place on 'suspend' or disconnect.					
N. Dispose of sharps appropriately, wash hands.					
O. Wait 15 minutes, monitor level of consciousness and breathing; check blood glucose if able.					
1. If no response and another dose is available, repeat glucagon procedure.					
2. If responsive and alert enough to swallow safely, offer juice. Wait 15 minutes and give protein and carbohydrate snack, if student is not nauseous or vomiting.					
3. Remain with student until EMS arrives.					
4. Notify school nurse & parent.					
P. Document procedure on student's individual treatment record					

Staff member signature _____ Initials ___

School nurse signature: _____ Initials ___

Appendix 3: Handouts

Section 1: Knowledge	B – L. General Guidelines For Diabetic Management At School
Section 2: Skills	A. Glucose Monitoring Handout B. Urine Ketone Testing Handout C. Carbohydrate Counting and Correction Dosage Calculation Handout D. 1. Insulin Administration By Syringe Handout 2. Insulin Administration By Pen Handout 3. Insulin Administration By Pump Therapy Handout E. Glucagon Administration Handout
Background	Alaska Medication Administration Delegation Decision Tree Confidentiality Handout Universal Precautions Handout Medication Administration – General Rules Field Trip Considerations
Supplemental	Low Blood Sugar Tip Sheet Low Blood Sugar Management for Classroom Teachers, Bus Drivers, and Other Support Staff High Blood Sugar Tip Sheet High Blood Sugar Management for Classroom Teachers, Bus Drivers, and Other Support Staff

These handouts are intended to be given by a school nurse to a trainee in conjunction with presentation of specific parts of the diabetes training curriculum. The trainee may keep them as a resource, if questions arise later.

Except for the supplemental handouts, each handout has the same format. Information is presented in four sections:

I. Overview
II. Supplies
III. Preparation
IV. Procedure

General Guidelines for Diabetic Management at School

I. Overview

A. Laws and Regulations

1. Relevant Federal law includes the Rehabilitation Act of 1973, section 504; the Americans with Disabilities Act (ADA); and the Individuals with Disabilities Education Act (IDEA).

   Together, the federal laws *require* school districts to meet the needs of their students with diabetes in the school setting, which are

   - ✓ A medically safe environment, and
   - ✓ The same access to educational and school-sponsored opportunities (including activities that happen outside regular school hours) as do students without diabetes.

2. Other pertinent Federal law includes the Family Educational Rights and Privacy Act (FERPA), which protects the confidentiality of student health information, and the Occupational Safety & Health Administration's (OSHA) Bloodborne Pathogen Standard (29 CFR 1910.1030), which protects workers from the health hazards caused by bloodborne pathogens.

   FERPA specifies when student health information may be shared and when it may not. Student health information must be kept private except for situations "where disclosure serves a compelling purpose", is required by law or when parental permission is obtained. (See the Confidentiality Handout for more information.)

   Under OSHA's Bloodborne Pathogen Standard, schools are required to have an Exposure Control Plan that specifies the protocol for handling blood and body fluids. This Plan must set safeguards including the identification and training of staff who are most at risk for exposure, utilization of Universal Precautions for all blood and body fluids, using personal protective equipment (PPE) to prevent exposure, engineering controls in managing contaminated sharps, and the proper disposal of regulated waste. All unlicensed school staff that are trained to assist students with diabetes must have completed their school district's Bloodborne Pathogens training.

3. At the state level, the Alaska Board of Nursing regulates the scope of practice for nurses. Generally, school nurses are responsible for meeting the healthcare needs of students while at school and assuring a healthy school environment. In April 2012, the Board of Nursing adopted the Medication Administration Delegation Decision Tree, which specifically designates the lines of authority for identifying and training unlicensed school staff to assist students with their healthcare needs if a school nurse is not available. In regard to diabetes care, school nurses are not authorized to delegate insulin or glucagon administration to anyone, although parents may do so. The Delegation Decision Tree pathway allows nurses to be involved in the identification and training of unlicensed school staff, who are then authorized by parents to assist their child with diabetes as needed.

4. School Documents related to diabetes

   a. *Healthcare Provider Orders*. To provide healthcare involving administration of prescribed medications, such as insulin or glucagon, a registered nurse must follow medical orders prescribed by a health care provider (i.e., physician or mid-level

practitioner). Diabetes care is quite complex, and these medical orders should include instructions about glucose monitoring, medication management, the student's self-management status, and other medical care.

b. *Individualized Healthcare Plan (IHP)*. ALL students with diabetes should have an IHP, which details how diabetes care at school will be managed based on the healthcare provider orders. It is developed by the school nurse with the parent, school administrator and, as appropriate, the student.

c. *Emergency Care Plan (ECP)*. This plan describes the steps to be taken in the event of a diabetes emergency. It is written in layperson's terms for all staff to understand and implement, as needed.

d. *504 Plan*. This plan describes the accommodations to be made on behalf of the student, based on the Rehabilitation Act. Many students with diabetes will have a 504 Plan in place in addition to an IHP and ECP as it further identifies the accommodations required (beyond health care needs) for equal access to their education. If a student has a 504 Plan, the IHP and ECP are attached to it.

e. *Individualized Education Plan (IEP)*. These plans are required by the Individuals with Disabilities Education Act (IDEA) and describe the accommodations to be made on behalf of a student needing special educational services. Not all students with diabetes will have one.

The ALASKA-INDIVIDUALIZED HEALTHCARE PLAN – DIABETES was developed to provide appropriate planning necessary for students with diabetes. This form has four parts: (a) HEALTHCARE PROVIDER ORDERS, (b) an Algorithms page that describes the standard of care for students with diabetes based on blood glucose range and includes emergency care, (c) the SCHOOL AND PARENT PART, which brings the healthcare ordered for a particular student into a particular school, and (d) an optional page that school nurses could use to plan coverage for students with diabetes at school.

B. Introduction to Diabetes

1. Diabetes is a disease in which the body does not make or properly use insulin, a hormone needed to convert glucose, starches, and other food into energy. People with diabetes have increased blood glucose levels because they lack insulin, have insufficient insulin, or are resistant to insulin's effects. Diabetes can lead to serious health problems and has no recognized cure.

   a. Type 1 diabetes (formerly known as insulin-dependent or juvenile-onset diabetes) is when the body does not produce insulin. It is an auto-immune disorder; the body destroys its own insulin-producing cells in the pancreas. These cells are necessary for insulin production. People with type 1 diabetes must receive insulin to survive.

   b. Type 2 diabetes (formerly known as non-insulin dependent or adult-onset diabetes) occurs when the insulin cell-energy-delivery process doesn't work and/or when the body does not produce adequate amounts of insulin. Type 2 diabetes is becoming more common among younger people.

2. Effective diabetes management controls blood glucose levels by keeping them within a target range that is determined for each child. For type 1 diabetes, insulin is administered throughout the day to achieve this control. Many people with type 2 diabetes manage their diabetes with oral medications, by being physically active and by managing their diet and

weight. Optimal blood glucose control helps promote normal growth and development and allows for optimal learning. Food intake raises blood glucose while exercise and insulin and/or oral diabetic medications lower blood glucose. Balancing all of these factors may be difficult. It is important to recognize when the student needs assistance.

3. Routine care for diabetes includes all aspects of energy management to keep blood glucose within a recommended range, taking action if blood glucose levels are too high or too low, and managing the situation to avoid out-of-range blood glucose levels where possible. As appropriate, the student should
   a. Maintain regular eating habits (timing and diet)
   b. Regularly check blood glucose levels
   c. Administer insulin (via injections or pump)
   d. Be physically active regularly (at least an hour daily)
   e. Maintain a healthy weight

   All of these activities happen routinely during the school day.

   Some students, because of age, developmental level, or inexperience, will need help from school staff with their diabetes management tasks. School staff may assist in day-to-day tasks such as carbohydrate counting, blood glucose monitoring, or insulin administration.

   School staff should
   a. Support self-management by the student.
   b. Monitor for symptoms of high or low blood sugar and treat appropriately.
   c. Respond appropriately to social or emotional concerns.
   d. Help plan for field trips and special events.
   e. Help plan for disasters; execute these plans if necessary.
   f. Intervene as needed in event of a diabetes emergency.

C. Nutrition and Physical Activity
Blood glucose is normally regulated by nutrient intake and physical activity. The normal interaction is that consuming food causes blood sugar levels to rise, which causes the release of insulin, which in turn decreases blood glucose levels. Physical activity uses glucose, which also causes blood glucose levels to diminish. When someone has diabetes, insulin needs to be administered in a pattern and in amounts similar to what the pancreas would produce if it could.

1. Food
   Having diabetes does not completely limit which foods should be consumed. The same foods that are healthy for someone without diabetes are healthy for a person with diabetes. Assuring that healthy foods such as whole grains, low-fat protein and dairy, fruits and vegetables are available is critical to diabetes management.
   a. The critical issues related to food consumption for students with *type 1* diabetes are:
      - <u>Maintaining a regular schedule</u> for meals and snacks, especially for people using an NPH-based regimen, and

- Consuming consistent amounts of carbohydrate.
- Students who have an insulin pump or are taking multiple daily injections may have a bit more flexibility in food selection and meal timing. They do not usually require planned snacks, but they usually need insulin if *un*planned snacks are consumed.

b. Students with *type 2* diabetes may have a nutrition plan designed to help them achieve and maintain a healthy weight. This plan may prescribe a daily calorie target and carbohydrate amounts to aim for at each meal and snack.

Having diabetes does require special attention at meals, however.

- All students and their families should receive school menus and nutritional information in advance. Anyone helping the student in making food selections also needs information.
- Staff should encourage independent food choices to the extent that a student can do so responsibly. Students who are independently selecting food should not have their choices 'second-guessed' by staff or other students.
- Students must be given sufficient time to eat and receive their insulin dose.
- Some student's actual food intake may need to be monitored, especially if they are younger, picky eaters, newly diagnosed, or eager to get outside for recess.

2. Physical activity
Regular physical activity is especially important for students with diabetes. They should participate fully in physical education classes and team sports, unless contra-indicated by another health condition, hypoglycemia or high ketones.

- Food intake or insulin/other medications may need to be adjusted to accommodate the timing of the activity with insulin peaks, meals or snacks.
- Students with diabetes should be monitored when being active, especially when starting a new activity. Physical activity affects different students differently, and different sports affect individual students differently.
- PE teachers and coaches must be familiar with the symptoms of high and low blood glucose, and know what action to take if they appear, including how to get help.

Physical activity-related accommodations for students with diabetes include:

a. Students should have with them a rapid-acting source of glucose, their glucose meter and water.

b. In general, students should check their blood glucose before, during and afterward, especially when starting a new activity or sport.

c. If blood glucose level starts to fall, student should stop and have a snack.

d. Students on insulin pumps may disconnect them or adjust the basal rate, as directed on their IHP. If students disconnect their pump, they must have a secure place to store it.

D. Social and Emotional issues, and Self-Management
The critical developmental task associated with having diabetes is assuming responsibility for self-management. Diabetes has a pervasive impact on an individual's life. Common reactions to

having this disease cycle through acceptance, resentment, embarrassment, and frustration. Children also generally want to please their parents and teachers, and to fit in with their peers; these various desires often conflict. People of all ages who have diabetes are vulnerable to depression.

Behaviors that could be problematic for diabetes management include:

- Avoiding or skipping meals and/or blood glucose tests
- Falsely reporting blood glucose levels
- Having a defensive attitude and demeanor related to diabetes self-management tasks, and/or food choices or participation in physical activity
- Being in conflict with parents and others who are responsible for overseeing or providing care
- Risk-taking behaviors, such as alcohol, tobacco or drug consumption

See chart on the next page for age-appropriate information about diabetes management tasks.

Age	Diet management	Insulin	Blood or Urine tests	Intellectual Development
4-5	• Knows likes and dislikes. • Inconsistent food choices. • Beginning to recognize low blood glucose symptoms.	• Can tell where injection should be. • Can pinch skin.	• Collects urine for ketones. • Turns on meter. • Helps with recording.	• Concrete thinkers. • Identifies with 'good' and 'bad,' so avoid these words. A child this age may think that a 'bad' blood glucose value means that he or she is 'bad.'
6-7	• Can begin to tell carbohydrate content of foods. • Knows which foods to limit.	• Can begin to help with aspects of injection. • Can give pump bolus *with* supervision.	• Can help with blood glucose monitoring. • Can prick finger.	• Concrete thinkers. • Need many reminders and supervision. • May need external reinforcement for participating in regimen. • May struggle for sense of control.
8-10	• Can select foods according to criteria. • Knows if foods fit diet plan. • Can recognize and treat low blood glucose.	• May being to do own injections or pump boluses.	• Can check blood glucose with supervision. • Can keep records. • Can do own urine test with supervision.	• Need reminders and supervision. • Understands only immediate considerations of diabetes control, not long-term. • 'Scientific mind' developing – intrigued by tests.
11-13	• Helps plan meals and snacks. • Identifies appropriate pre-exercise snack. • States role of diet in care.	• Can measure and inject own insulin.	• Can see blood glucose results forming a pattern. • Still needs help interpreting urine ketones test.	• May need reminders for self-care. • May be somewhat rebellious. • Concerned with being different. (Wants to fit in.) • More independent, yet may require some degree of supervision.
14+	• Adjusts food intake to maintain optimal blood glucose level. • Can anticipate or prevent low blood glucose.	• Can mix two insulins (if needed). • Can adjust dose.	• Can begin to use blood glucose results to adjust insulin.	• Abstract thinker. • Rebellion continues. • Independence and self-image are important. • Knows consequences of poor diabetes control, yet still takes risks.

Please note! This chart is *only* a guideline. Children and adolescents develop at different rates, and their ability to participate in self-care depends on their willingness to do so. Knowledge and behavior are NOT highly correlated.

E. Field Trips and Special Events

Students with diabetes should have the same opportunity to go on field trips and participate in special events as other students. Although they should be invited, parents should not be *expected* to attend these activities to be sure that their child with diabetes has an appropriately trained resource adult available. Preferably, the school nurse and trained school staff need at least two weeks' notice to plan for coverage.

Disrupting the student's routine is a key consideration for field trips and special events. How will regular blood glucose testing, insulin administration and meals be accommodated? What level of physical activity will be involved?

Students with diabetes on a field trip should always have snacks and supplies for checking blood glucose, administering insulin and treating hypoglycemia with them.

Check the IHP and, as appropriate, consult the parent/guardian of the student with diabetes about how to handle classroom treats. Students with diabetes prefer participating in social occasions without different treatment than other students. Encourage the treat provider to make a healthy choice, which will make it easier for the student with diabetes and healthier for all.

Field trip considerations sheet

F. Disaster Planning

Disasters are inherently stressful and create havoc on routines. These characteristics make students with type 1 diabetes particularly vulnerable; their blood glucose level may be unpredictable.

Parents are responsible for providing diabetes supplies equal to at least three days of care.

- Check the IHP for the student's supply list.
- Where are these supplies located?
- How will the emergency supplies be monitored to be sure they haven't been depleted and that the expiration dates have not passed?

G. Checking Blood Glucose Levels

To be healthy, blood glucose levels need to be kept within a certain range (typically 80-180 for school age students). This is referred to as the target range.

1. People with type 2 diabetes need to monitor their blood glucose levels daily.
2. People with type 1 diabetes need to check their blood glucose before taking action that will affect their blood glucose levels. Thus, blood glucose generally should be tested before:
    - Eating, because they need to know how much insulin will be needed to 'cover' the meal or snack and keep their blood glucose levels within their target range;
    - Physical activity;
    - Activities where glucose testing and insulin treatment might be difficult, such as boarding a school bus or taking a long academic exam.

Blood glucose may need more frequent than usual checks if:

- The student's regular schedule is disrupted such as by early or delayed release from school; or
- The student is ill or stressed; or
- When diabetes management changes.

3. In general, there should be a gap of at least two to three hours between blood glucose tests. It takes about that much time for the body to process food or insulin. The exception is when blood glucose levels are below 70 where treatment success is monitored every 15 minutes until blood glucose is in normal range.
4. Students should self-monitor their blood glucose as soon as they can do so responsibly and reliably. Adults, such as parents, school nurses and trained unlicensed school staff may perform the blood glucose test or supervise/monitor the student as directed in the IHP.
5. In general, a clean, private place should be provided for blood glucose testing and insulin administration.

H. Hypoglycemia (Low Blood Glucose)

Hypoglycemia is when the blood glucose level is below the target range.

1. Low blood glucose happens when:
   - Too much insulin has been administered
   - Too little food has been eaten
   - Insulin pump malfunction (if on pump)
   - Extra/unanticipated physical activity
   - Illness
   - Medications
   - Stress, including academic testing

2. Hypoglycemia can be prevented by:
   - Eating on time, checking glucose levels on time and administering insulin on time. TIMING is very important in all aspects of diabetes management. Eating on time will include snacks for some students, especially before physical activity.
     - Changes in the timing of snacks, meals, or physical activity should only be made after consultation with parent/guardian and/or health care provider.
     - Physical Education can affect blood glucose levels and extra snacks may be required up to 30 minutes before gym or prolonged physical activity. Refer to the IHP.
   - Meticulously following the IHP and ensuring that insulin dosing is accurate.
   - Monitoring food intake. The same kind of accuracy in "insulin dosing" needs to happen with food as well. With some (especially young) students this may mean supervision and monitoring what is actually eaten.
     - Picky eaters need closer monitoring of food consumed.

- Nutritional information, to determine carbohydrate count, should be available for all school snacks/meals.

- Some students may administer insulin after eating, instead of before. Check the IHP for specific information.

- Considering limits in self-management of diabetes. Do not over-rely (or under-rely) on the student with diabetes for management information. Consult the IHP. Remember, many students with diabetes seem like experts, but their expertise has limits, especially when they are hypoglycemic.

3. Symptoms of low blood glucose are:

Low	Moderately to Severely Low	Dangerously Low
• Anxiety • Blurry vision • Changed behavior/personality • Clammy skin, sweating • Dilated pupils • Dizziness • Headache • Hunger • Increased heart rate/palpitations • Lethargy, weakness • Pallor • Shakiness • Sleepiness • Stubbornness	▪ Confusion ▪ Sudden crying ▪ Dazed Appearance ▪ Extreme tiredness/fatigue ▪ Irritability/frustration ▪ Restlessness ▪ Yawning	• Loss of consciousness • Convulsions • Inability to swallow

4. What to do if you suspect hypoglycemia:
   - Maintain adult supervision. A student should never be alone when low blood glucose is suspected.
   - Test blood glucose level.
   - Check ALGORITHMS page.
   - Check pump function (if on insulin pump)
   - Call 911 if the student becomes unconscious, has seizures, or is unable to swallow.
     - Turn the student on their side to ensure an open airway.
     - Give glucagon as ordered and keep the student in recovery position on their side.
     - If on insulin pump, either place it in 'suspend' or stop mode, disconnect it at the pigtail, or clip or cut tubing. If pump was removed, send it with EMS to the hospital.
     - Notify the school nurse, parent and HCP.

- Wait 15 minutes (if EMS has not yet arrived); if not responsive, repeat glucagon if second dose is available. If responsive, offer juice. Wait 15 minutes and give protein and carbohydrate snack.

I. Hyperglycemia (High Blood Glucose)
Hyperglycemia is when the blood glucose level is above the target range.

1. High blood glucose occurs when:
   - Insulin treatment is late, missed or the dose is too small
   - Insulin is past its expiration date or was improperly stored
   - Insulin pump malfunction (if on pump)
   - The amount or kind of food consumed is different than planned
   - Student is ill, injured or has an infection
   - Student is stressed
   - Student is undergoing hormonal changes, including menstruation

2. Hyperglycemia can be prevented by:
   - Maintaining a regular schedule of blood glucose testing, insulin administration, meals and physical activity
   - Following the IHP for accurate insulin administration.
   - Counting carbohydrates accurately.

3. High blood glucose symptoms are:

High	Dangerously High
• Blurred vision • Fatigue/sleepiness • Flushing of skin • Frequent urination • Increased hunger • Lack of concentration • Stomach pains • Sweet, fruity breath • Thirst • Weight loss	• Confusion • Labored breathing • Profound weakness • Loss of consciousness

4. What do you do if you suspect hyperglycemia:
   - Test blood glucose level.
   - Check ALGORITHMS page.
   - Troubleshoot insulin pump (if on pump)
   - Call 911 if the student vomits, becomes lethargic and/or has labored breathing.
   - Notify the school nurse, parent and HCP.

J. Ketones

Ketones are acids that are produced by the body when it does not have enough insulin and uses fats for energy. Ketones may occur when insulin is not given, during illness or extreme stress, or with dehydration. Ketones can cause abdominal pain, nausea, and vomiting.
Without sufficient insulin, ketones continue to build up in the blood and result in diabetic ketoacidosis (DKA), which is a medical emergency. DKA is the primary reason why children with type 1 diabetes are hospitalized, but this can be prevented with appropriate action.

Diabetic ketoacidosis usually takes hours to develop, if not longer. Progress can occur much more quickly for students who use insulin pumps or who have an illness or infection. The greatest risk associated with DKA is when it is mistaken for "flu", and high blood glucose is unchecked and untreated.

K. Insulin Basics

The overall treatment objective for insulin is to mimic the insulin/blood glucose level dynamics that occur in the non-diabetic body. Research has found that the most effective way to accomplish this objective, for most people, is to use insulin with different characteristics.

Basal insulin: Works steadily throughout the day. Basal insulin is needed to maintain good baseline blood glucose control (without taking into account eating any food). It may be provided by injection with either long-acting (such as (Glargine/Lantus or Detemir/Levemir) or intermediate-acting insulin (such as NPH), or by continuous infusion of short or rapid acting insulin with an insulin pump.

Bolus insulin: Is given in single doses either routinely, to cover meals and snacks or to "correct" a too high blood glucose level. Bolus insulin is always either rapid-acting (Humalog, Novolog or Apidra) or short-acting (regular).

1. Characteristics of the various types of insulin[4]

Type	Generic (Brand) Names	Onset	Peak	Duration
Rapid-acting	Aspart (Novolog) Glulisine (Apidra) Lispro (Humalog)	15 minutes	30 – 90 minutes	3-5 hours
Short-acting	Regular (Humulin R, Novolin R)	30-60 minutes	2-4 hours	5-8 hours
Intermediate-acting	NPH human (Humulin N, Novolin N)	1-3 hours	8 hours	12-16 hours
Long-acting	Glargine (Lantus) Detemir (Levemir)	1 hour	no clear peak	20-26 hours

2. How insulin is administered

Insulin is administered by syringe, pen or pump.

[4] http://www.mayoclinic.com/health/insulin/DA00091 (printed 8/29/2012)

Students on the pump should always have a back-up syringe or pen and related supplies available, in case the pump malfunctions.

3. Insulin storage
   - Depends on the type, the type of container, and how it's used; check packaging instructions.
   - GENERALLY, most opened insulin vials can be kept at room temp for 30 days; *write day opened on label*.
   - GENERALLY, most opened insulin disposable pens or pen cartridges may be left at room temperature for less than 30 days, depending on the type of insulin and the type of pen or cartridge
   - Unopened vials should be stored in the refrigerator; they are good until their expiration date.

II. Supplies
   A. Glucose meter with strips, lancets and extra batteries
   B. Urine ketone test strips
   C. Emergency glucose source and snacks; water
   D. Insulin source with proper delivery system, (i.e., syringes, insulin pen, pump)
   E. Alcohol or other cleansing agent
   F. Sharps container
   G. Disposable medical gloves
   H. Glucagon emergency kit
   I. IHP

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review IHP.	All specialized procedures conducted in the school setting require written licensed health care provider orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results.

B. Review school day activities.	An overview of the mealtimes and activity times can help identify possible times of blood glucose fluctuations. A careful review of the daily routine: placement of meals, snacks, physical activity, sports participation, and after school practices and activities. Modifications in daily schedule which can impact blood glucose results are 2 hour delays, early dismissals, food events included in curriculum or classroom parties, etc.
ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
C. Locate supplies	
D. Plan for field trips, special events and extra-curricular activities.	Advance notice is needed to prepare for the needs of the student.

IV. Procedure:

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
Follow IHP	See Form Instructions Individualized Healthcare Plan - Diabetes
Follow Universal Precautions	See Universal Precautions Handout.
Check blood glucose	See Glucose Monitoring Handout and, if appropriate, Continuous Glucose Monitoring Device (CGM) Handout. Remain alert to unusual behavior by student, which can indicate the need for checking blood glucose level. **Always refer to health care provider orders and Individualized Healthcare Plan IHP.**
Count carbohydrates	See Carbohydrate Counting and Correction Dosage Calculation Handout.
Test urine ketones	See Urine Ketone Testing Handout.
Administer insulin	See as appropriate Insulin Administration by Syringe Handout, Insulin Administration by Pen Handout and/or Insulin Administration By Pump Therapy Handout.
Administer glucagon	See Glucagon Administration Handout.

Back to list of handouts (Appendix 3)

Glucose Monitoring Handout

I. Overview:

Successful diabetes management depends largely on blood glucose monitoring, which measures the effects of balancing food, exercise, and medication. All diabetes care centers on the blood glucose level. Blood glucose results are measured in milligrams per deciliter (mg/dL). The health care provider usually requests that the student self-check blood glucose levels at various times during the day, such as: before eating snacks or lunch, before physical activity, and when the students has symptoms of either high or low blood glucose levels.

II. Supplies

- Meter (child's personal meter or meter provided by family)
  - Manufacturer's instruction booklet, if available
- Meter strips or cartridges
- Lancing device
- Disposable Gloves
- Tissue or cotton ball, adhesive bandage if needed
- Sharps container or disposal plan
- IHP

III. Preparation:

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review student's IHP.	All specialized procedures conducted in the school setting require written licensed health care provider orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results.
B. Review *Universal Precautions*	These measures are designed to prevent spreading infectious disease. Refer to Universal Precautions Handout.

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Gather supplies	
B. Prepare work area.	Work area should be clean and well-lit. When possible, assure cleanliness by covering surface with a paper towel or disposable drape.
C. Wash hands and put on gloves	Refer to Universal Precautions Handout.

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
D. Have student wash hands with warm soapy water and thoroughly dry them.	• Washing with soap and water prevents infection and removes any substance that might alter the blood glucose results. • Washing in warm water will increase the blood flow to the finger.
E. Turn meter on, insert strip and check codes (if applicable)	Follow manufacturer's instructions for specific machine.
F. Insert new lancet into the lancet device and "cock" or load it. (NOTE: student may choose to use a lancet more than once, but this is not recommended). Poke finger/alternative site with lancing device.	Follow directions for specific monitor and readying the cancelling device. Finger puncture should be lateral to fingertip (the pads of the fingertips may be more sensitive). Most inaccurate glucose readings are a result of insufficient blood samples. Hang the arm below the level of the heart for 30 seconds to increase blood flow. If hypoglycemia is suspected, only use the finger for testing, do not use alternate testing site.
G. Apply blood to strip.	Gently squeeze the finger in a downward motion to obtain a large enough drop of blood to cover the test pad on the test strip. Many test strips pull in the required amount of blood. Avoid squeezing the site excessively as this may contaminate the sample with tissue fluid and traumatize the site.
H. Place cotton ball or tissue over lanced area, applying slight pressure until bleeding stops.	Prevent contamination of blood to other surfaces.
I. Read result displayed in monitor window (correctly).	Appropriate diabetes interventions are dependent on correctly reading the results.
J. Remove strip and lancet dispose of them properly	Dispose of lancet in sharps container and strip in appropriate container. Refer to Universal Precautions Handout.
K. Dispose of other supplies appropriately.	Testing supplies should be re-stored securely.
L. Inspect area for blood spills and follow district/program protocol for cleaning. Remove gloves, wash hands	Refer to Universal Precautions Handout.

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
M. Follow IHP for action plan.	
N. Document procedure on student's individual treatment record.	Record: 1. Date and time. 2. Blood glucose reading. 3. Action taken and student's response. 4. Signature of personnel performing

Continuous Glucose Monitoring Device (CGM) Handout

I. Overview:

A Continuous Glucose Monitor (CGM) uses a tiny sensor inserted under the skin to check glucose levels in the interstitial fluid (under the skin) in real time. Glucose levels are displayed in 5 minute or 1 minute intervals. The sensor stays in place for several days to a week then must be replaced. A CGM usually reads within 20% of a finger stick blood sugar value. It can be programmed to alert (vibrate or alarm) for high and low glucose levels. CGM is meant to provide additional glucose information. **It is not approved for use in making treatment decisions; a user must confirm glucose levels with a meter before making a change in treatment.**

CGM supplies include a sensor site, inserter, tegaderm, charger and battery, for turning it on. Since the CGM is not used in treatment, these supplies typically do not come to school. Also, if a CGM malfunctions while a student is at school, the absence of the information it provides does not change the execution of other diabetes management tasks.

II. Supplies

A. CGM Manufacturer's booklet, if available.

B. IHP

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review student's IHP	All specialized procedures conducted in the school setting require written licensed prescriber orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results.
B. Review *Universal Precautions*.	These measures are designed to prevent spreading infectious disease. Refer to Universal Precautions Handout.

IV. Procedures:

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Calibration reminder sounds	• Check IHP • Use CGM manufacturer's booklet to help student calibrate the CGM.
B. CGM operation errors 1. Dead battery 2. Pump sensor becomes dislodged	• Check IHP. • If directed, follow CGM manufacturer instructions for replacing battery or to "find lost sensor." • If CGM remains out of operation, continue finger stick blood glucose tests and take action based on the IHP. • IF CGM sensor is dislodged, send the transmitter home and dispose of catheter properly.
C. Alert Settings 1. CGM will alert audibly if interstitial glucose is above or below set numbers. 2. Arrows: Some continuous monitors show arrows on the screen to indicate the speed at which the glucose levels are changing. • Arrows on the face of the monitor pointing straight downward indicate a rapidly falling glucose level. • Arrows pointing straight up indicate a rapidly increasing glucose level. • A horizontal or 45 degree arrow (or one arrow in contrast to two arrows) may mean that the glucose level is not changing as rapidly.	Since this device should not be used for treatment purposes, *always* do a finger stick blood glucose test before taking action.

Urine Ketone Testing Handout

I. Overview

Ketones are acids that are produced by the body when it does not have enough insulin and uses fats for energy. Without sufficient insulin, ketones continue to build up in the blood and result in diabetic ketoacidosis (DKA), which is a medical emergency. DKA is the primary reason why children with type 1 diabetes are hospitalized, but it can be prevented with appropriate action.

Test for ketones when a student's blood glucose test result is above 300 for consecutive tests 3 hours apart, or when a student has abdominal pain, nausea, or vomiting.

The student may perform this procedure independently if indicated on the INDIVIDUALIZED HEALTHCARE PLAN - DIABETES, and if the student has signed a STUDENT SELF-MANAGEMENT AGREEMENT.

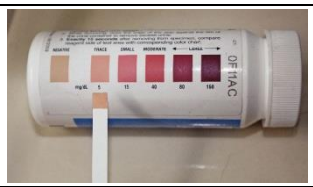
II. Supplies

A. Gloves
B. Testing strips and comparison chart
C. Cup for urine
D. Protected testing area (waterproof disposable pad)
E. Timing device (watch)
F. IHP

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review IHP	All specialized procedures conducted in the school setting require written licensed health care provider orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results.
B. Review Universal Precautions.	Refer to Universal Precautions Handout.

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Gather supplies.	
B. Prepare work area.	
C. Wash hands, put on gloves	Refer to Universal Precautions Handout.
D. Student collects urine	
E. Place cup of urine on protected area (waterproof disposable pad)	Refer to Universal Precautions Handout.
F. Dip ketone testing strip in urine, tap off excess	
G. Time appropriately	Follow the specific instructions on the bottle, usually 15 seconds.
H. Compare strip to comparison chart, accurately read results	
I. Dispose of all supplies appropriately Remove gloves, wash hands	Refer to Universal Precautions Handout.
J. Follow IHP for action plan.	Refer to health care provider orders and standard of care algorithm for action plan
K. Document procedure on student's individual treatment record.	1. Date and time. 2. Blood glucose reading. 3. Ketone results. 4. Action taken and student's response. 5. Signature of personnel performing.

Carbohydrate Counting and Correction Dosage Calculation Handout

I. Overview

There are three types of nutrients: carbohydrates, fats and protein. Carbohydrate is the nutrient that has the most significant effect on blood glucose levels. Food with carbohydrate can be grouped into four categories: natural sugar (in fruit and milk), starches with fiber (raw vegetables, beans, whole grains), starches without fiber (white flour and refined grain products), and concentrated sugar (cake, candy and non-diet soft drinks).

When counting carbohydrates, include BOTH sugars and starches.

The student may perform this procedure independently if indicated on the INDIVIDUALIZED HEALTHCARE PLAN - DIABETES, and if the student has signed a STUDENT SELF-MANAGEMENT AGREEMENT.

II. Supplies

E. Student's glucose meter and needed supplies.

F. IHP

G. School menu or other resource for counting carbohydrate from meal

H. Pencil/paper; calculator (optional)

I. Insulin, syringe and disposal equipment

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review IHP	All specialized procedures conducted in the school setting require written licensed health care provider orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results.
B. Review Universal Precautions	Refer to Universal Precautions Handout

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
K. Gather supplies	
L. Observe or assist student in performing blood glucose test • Document blood glucose result on student's individual treatment record – student goes to lunch.	Refer to Glucose Monitoring Handout
M. Student returns from lunch with tray.	Nurse or trained staff may check with student in the lunchroom.

Essential Steps	Key Points/Precautions
N. Count the amount of carbohydrate intake based upon school menu and/or other resource.	Use school menu and/or other resource to count amount of carbohydrates. When reading labels, determine count based on total carbohydrates and serving size.
O. Determine amount of insulin needed for carbohydrate intake based on student's insulin to carbohydrate ratio in IHP.	Example of insulin needed for carbohydrate eaten: The student's lunchtime insulin-to-carbohydrate ratio is 1:15, and the child ate 60 grams of carbohydrates. The calculation is: 60 ÷ 15 = 4 units of insulin.
P. Determine amount of insulin needed for blood glucose level – recheck healthcare provider order in IHP to verify student's correction insulin dose calculation.	Examples for insulin correction dose: The student's pre-meal blood glucose is 300. The student's target blood glucose is 150. • If Diabetes with Injection IHP and... ○ IHP uses *correction scale* example: use the insulin units indicated for the range. ○ IHP uses *formula* example: Blood Glucose (300) – target (150) ÷50 = 3 units of insulin. • If Diabetes with Pump IHP example: Give 1 unit of insulin for every 50 mg/dL over target. 300 – 150 =150 ÷ 50 = 3 units of insulin.
Q. Determine the TOTAL amount of insulin dose	Example of total insulin dose: Insulin-to-carb dose plus correction dose = total units. The formula is: 4 + 3 = 7 units of rapid-acting insulin.
R. Verify insulin dose with another staff person.	
S. Complete documenting procedure on student's individual treatment record.	1. Date and time. 2. (Blood glucose results recorded earlier) 3. Carbohydrate intake. 4. Insulin calculated. 5. Action taken and student's response. 6. Signature of personnel performing.

V. Additional Resource

For carb counts when parties and other unexpected events arise: http://www.myfitnesspal.com/food/calorie-chart-nutrition-facts

Insulin Administration by Syringe Handout

I. Overview

Insulin therapy involves the subcutaneous injection of insulin to reduce hyperglycemia and prevent diabetic ketoacidosis (DKA).

The student may perform this procedure independently if indicated on the INDIVIDUALIZED HEALTHCARE PLAN - DIABETES, and if the student has signed a STUDENT SELF-MANAGEMENT AGREEMENT.

II. Supplies

A. Insulin supply as prescribed by healthcare provider.

B. Insulin syringe with needle.

C. Sharps disposal container

D. Gloves, alcohol swabs, cotton balls

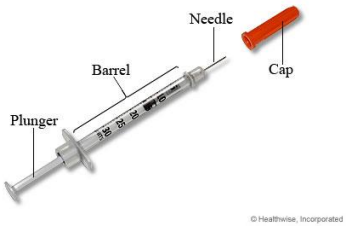
E. Student's IHP

- Carbohydrate coverage and correction scale and/or formula prescribed by health care provider.

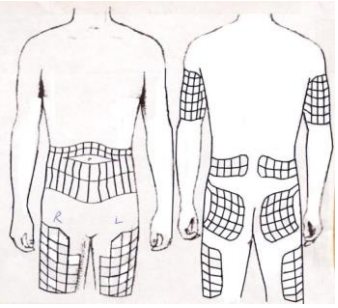
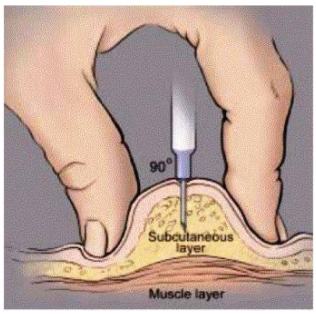
III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review Universal Precautions	These measures are designed to prevent spreading infectious disease. See Universal Precautions Handout.
B. Acquire blood glucose reading.	Refer to Glucose Monitoring Handout
C. Review student's IHP. Determine the insulin dose from the HEALTH CARE PROVIDER ORDERS	All specialized procedures conducted in the school setting require written licensed prescriber orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results. • Review the dosage prescribed for covering the carbohydrate intake and the correction scale or formula for covering excess glucose level. Refer to Carbohydrate Counting and Correction Dosage Calculation Handout

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Gather supplies.	
B. Wash hands and put on gloves.	Refer to Universal Precautions Handout.
ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
C. Prepare insulin 1. Check to be sure you have the correct type and that the expiration date has not passed.[5] 2. Remove insulin bottle lid. Wipe rubber top of bottle with alcohol wipe and let dry for 5 seconds. 3. Label insulin with student's name and date.	Insulin should be discarded after 30 days. Prevents medication errors.
D. Verify the dose 1. Re-check IHP 2. Pull air into the syringe by pulling back on the plunger until its black tip is even with the line showing the dose needed.	
E. Place the vial of insulin flat on table, wipe rubber top of vial with alcohol swab, and push the needle through the center of the rubber top of the insulin.	
F. Push the plunger so that the air goes from the syringe into the bottle. Leave the syringe in the bottle.	
G. Turn the insulin bottle and syringe upside down.	
H. Pull insulin into the syringe by slowly pulling back on the plunger until the top of its black tip is even with the line showing required number of units.	

[5] Students are rarely on NPH insulin, and those who are on NPH rarely administer it at school. If a student does have NPH, it may need to be mixed with another insulin. If mixing insulins, gently roll the bottle between the palms or turn the bottle over from end to end at least 20 times. Do not shake. If any clumps are visible, do not use. When using mixed insulins, withdraw clear insulin first and then withdraw cloudy insulin. This practice prevents dosage errors.

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
I. Look for air bubbles. If present, tap the syringe to raise air bubbles to the top, push the air bubbles back in the bottle and repeat steps 'G' 'H'.	
J. Check to make sure the correct number of units is in the syringe and remove the syringe from the bottle.	
K. Verify dosage with another staff member.	
L. Use syringe to inject insulin 1. Assist the student in selecting the injection site. The area should be clean; alcohol wipe may be used.[6] Injection sites should be rotated.	Systematic rotation of sites will keep the skin supple and favor uniform absorption of insulin. Absorption is quicker from the abdomen and arms than the thighs or buttocks. 
2. Pinch skin and insert insulin syringe needle at 45-90° angle.	Thin people require pinching a skin fold and injecting at 45˚. Injecting at 90˚ into taut skin is recommended for heavier people. Avoid pinching skin tightly to avoid trauma. Aspiration is not necessary. 

[6] The practice of wiping an injection site with alcohol is debated in the literature. Use of alcohol is optional depending on parent's preferred practice and environmental cleanliness. The site should be clean and not visibly soiled.

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
3. Push plunger in to deliver insulin and count 10 seconds with skin pinched and needle in place. 4. Remove insulin syringe and needle from skin. Apply slight pressure to the injection site with cotton ball as needed.	
M. Dispose of syringe with needle intact into a sharps container. Do not recap needle. Remove gloves. Wash hands.	Refer to Universal Precautions Handout.
N. Store remaining insulin according to manufacturer's recommendations.	Some insulin may require refrigeration.
O. Document procedure on student's individual treatment record.	Record: 1. Date and time. 2. Blood glucose level. 3. Amount and type of insulin given. 4. Student's response and action taken. 5. Signature of personnel performing.

Insulin Administration by Pen Handout

I. Overview

Insulin therapy involves the subcutaneous injection of insulin to reduce hyperglycemia and prevent diabetic ketoacidosis (DKA).

The student may perform this procedure independently if indicated on the INDIVIDUALIZED HEALTHCARE PLAN - DIABETES, and if the student has signed a STUDENT SELF-MANAGEMENT AGREEMENT.

II. Supplies

A. Insulin cartridge as prescribed by healthcare provider

B. Insulin pen, pen needles, and pen manufacturer's operating instructions, if available

C. Sharps disposal container

D. Gloves, alcohol swabs, cotton balls

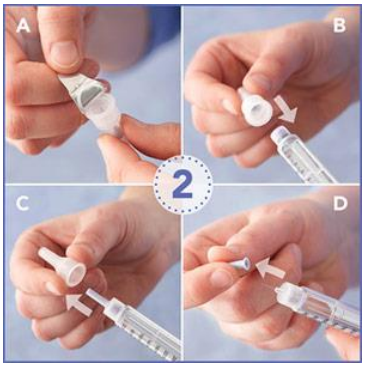
E. Student's IHP

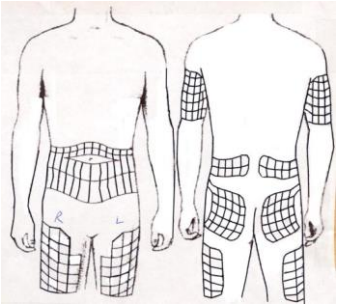
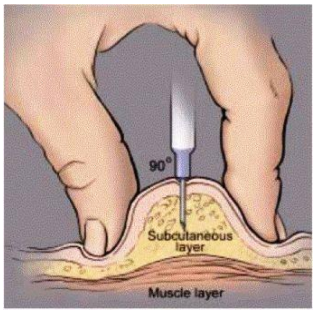
- Carbohydrate coverage and correction scale and/or formula prescribed by health care provider.

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review Universal Precautions	These measures are designed to prevent spreading infectious disease. Refer to Universal Precautions Handout.
B. Review student's IHP. 1. Determine the insulin dose from the HEALTH CARE PROVIDER ORDERS	All specialized procedures conducted in the school setting require written licensed prescriber orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results. • Review the dosage prescribed for covering carbohydrate intake and the insulin correction scale or formula to cover excess blood glucose. • Refer to Carbohydrate Counting and Correction Dosage Calculation Handout.
C. Acquire blood glucose reading.	Refer to Glucose Monitoring Handout.

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Gather supplies	Insulin pens vary by manufacturer. Types of insulin pens include: • Pre-filled disposable pen (insulin cartridge is already in pen. • Reusable (non-disposable) pen (insulin cartridge is loaded into the pen for use)
B. Wash hands, put on gloves.	• Refer to Universal Precautions Handout.
C. Inspect insulin pen: • Check to be sure it has the student's name on the label. If the cartridge is new, add student's name to the label. • Check to be sure insulin is the correct type and that its expiration date has not passed • If the student uses prefilled disposable pens: cartridge is already in the pen. • If the student uses a reusable pen: the insulin cartridge will often be in the pen. If not, load pen cartridge into pen.	Prevents medication errors. Insulin should be discarded after 30 days.
D. Remove insulin pen cap, clean rubber stopper with another alcohol swab. E. Take out new packaged needle, remove its protective tab. Do not touch where the needle will attach to the pen. F. Carefully screw on the needle onto the end of the insulin pen and remove protective cap.	

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
G. Prime the needle. 1. Pulling out plunger on the end of the pen and dialing the pen to '2'. H. Point pen away from people and press the plunger until dose selector returns to zero. Liquid should come out of the needle; if it doesn't repeat priming process.	
I. Verify the dose D. Recheck IHP E. Check that the dose selector is set at zero, and then dial number of units needed. F. Check dialed dose on pen	
J. Verify dosage with another staff member.	
K. Use pen to inject insulin 1. Assist the student in selecting the injection site. The area should be clean; alcohol wipe may be used.[7] Injection sites should be rotated.	Systematic rotation of sites will keep the skin supple and favor uniform absorption of insulin. Absorption is quicker from the abdomen and arms than the thighs or buttocks. 
2. Pinch skin and insert insulin pen needle at 45-90° angle.	Thin people require pinching a skin fold and injecting at 45˚. Injecting at 90˚ into taut skin is recommended for heavier people. Avoid pinching skin tightly to avoid trauma. Aspiration is not necessary. 

[7] The practice of wiping an injection site with alcohol is not as automatic as it once was. Certainly, the area should be clean and alcohol can help.

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
3. Push the injection button down completely to deliver insulin and count 10 seconds with skin pinched and needle in place.	If the child is having trouble with leaking insulin, turn the pen (spin it around) before pulling it out
4. Remove insulin pen from skin. Apply slight pressure to the injection site with cotton ball, if needed.	
L. Do not replace the protective needle cap; carefully unscrew pen needle to remove from pen and dispose of needle in sharps container. Remove gloves and wash hands.	Refer to Universal Precautions Handout.
M. Put insulin pen cap back on pen for storage and return pen to storage area.	Some insulin may require refrigeration.
N. Document procedure in student's individual treatment record.	Record: 1. Date and time. 2. Blood glucose level. 3. Amount and type of insulin given. 4. Site of administration. 5. Student's response and action taken. 6. Signature of personnel performing.

Insulin Administration by Pump Therapy Handout

I. Overview

The insulin pump is a programmable microcomputer which delivers a continuous subcutaneous injection of rapid-acting insulin. The insulin pump is about the size of a pager, powered by a battery and capable of delivering exact amounts of insulin, in as small as 0.025 unit. Delivery occurs from the reservoir or cartridge contained in the pump through a specialized tubing (or infusion set) to the subcutaneous site which is usually in the abdomen (other sites may be used). An introducing needle is used initially to insert the infusion set into the selected site; the needle is usually removed after placement leaving a small plastic catheter in place. Some insertion sets leave the needle in after pump placement. Insulin is pumped through this tubing at a prescribed rate of infusion. This basal rate mimics the small amount of insulin that is continuously secreted by a healthy pancreas. When food is ingested, the grams of carbohydrates are calculated and a prescribed amount of insulin is given by bolus dose to maintain a prescribed blood glucose level. If the blood glucose level exceeds acceptable levels, a correction bolus may be prescribed.

The student may perform this procedure independently if indicated on the INDIVIDUALIZED HEALTHCARE PLAN - DIABETES, and if the student has signed a STUDENT SELF-MANAGEMENT AGREEMENT.

II. Supplies:

A. Insulin pump with rapid-acting insulin and manufacturer's instruction booklet.

B. Extra batteries and other pump supplies (e.g., infusion set and inserter, reservoir and insulin) specific to student for pump maintenance.

C. Injectable insulin supply and syringes or insulin pen in event of pump or site failure.

D. Meter, lancets, strips, and alcohol wipes.

E. Sharps container

F. Disposable medical gloves

G. Student's IHP

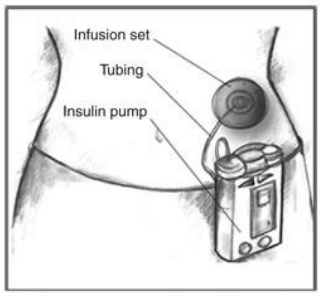
- Carbohydrate coverage and correction scale and/or formula prescribed by health care provider.

H. Phone number of pump manufacturing company in case of pump malfunction.

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review Universal Precautions	These measures are designed to prevent spreading infectious disease. Refer to Universal Precautions Handout.
B. Review student's IHP. 1. Determine the insulin dose from the HEALTH CARE PROVIDER ORDERS	All specialized procedures conducted in the school setting require written licensed prescriber orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results. • Review the dosage prescribed for covering carbohydrate intake and the insulin correction scale or formula to cover excess blood glucose. • Refer to Carbohydrate Counting and Correction Dosage Calculation Handout.
C. Acquire blood glucose reading.	Document the newest blood glucose measurement. Refer to Glucose Monitoring Handout.

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
V. Review and follow basic operating functions of the pump listed below based on the manufacturer's instructions: C. Identify insertion set, tubing, and cartridge components of pump. D. Check the status of the pump E. Suspend the pump F. Verify time of last bolus G. Verify the pump is not in 'no delivery' mode H. Change the batteries in the pump I. Check insulin reservoir and insertion site	 Refer to manufacturer's instruction booklet

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
VI. Review and follow how to give a bolus per IHP following the manufacturer's instructions: • If using the insulin dose calculator (Bolus Wizard) function in the pump (if present), review how to look at pump dose calculations for dose of insulin, verify dose is within parameters and activate to administer dose. • Document procedure on individual student's treatment record.	Refer to manufacturer's instruction booklet and IHP. Record: 1. Date and time. 2. Blood glucose level. 3. Amount and type of insulin given. 4. Student's response and action taken. 5. Signature of personnel performing.
VII. Troubleshoot pump malfunction 1. Review pump alarms/functioning. a) For hypoglycemia, • Assess for pump malfunction. • Turn off or suspend pump if it is not functioning properly. • Notify parent/guardian and school nurse. • Refer to student's IHP for appropriate interventions. b) For hyperglycemia, • Assess for clogged or kinked tubing • Assess for infusion site failure. • Follow IHP for appropriate interventions. • Notify parent/guardian and school nurse • Administer insulin by injection for hyperglycemia, according to health care provider order	Signs of pump malfunction may include pump alarms, clicking noise. • Check basal rate and last bolus dose given. • Refer to Manufacturer's instruction booklet. Signs may include: pump not infusing, leaks or kinks in infusion set tubing, empty insulin cartridge, redness and tenderness at site, or leakage around insertion site. Act as directed by the IHP HEALTHCARE PROVIDER ORDER. • Infusion set and/or insertion site should *only* be changed by school nurse, parent, or student (if student has signed a STUDENT SELF-MANAGEMENT AGREEMENT). • Check blood glucose. Refer to Glucose Monitoring Handout. • Administer insulin by another means if needed. Refer to Insulin Administration by Syringe Handout or Insulin Administration by Pen Handout as appropriate.

V. Additional Resources

Medtronic: *A Reference Guide for School Nurses with the Medtronic® Minimed® Insulin Pump*
http://www.professional.medtronicdiabetes.com/sfc/servlet.shepherd/version/download/068C0000000K6p8

Animas User Guides (Animas webpage search results)
http://www.animas.com/search/google_appliance/user%20guide

Omnipod User Guide webpage
http://www.myomnipod.com/customer-care/guides-and-resources

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Glucagon Administration Handout

I. Overview: Glucagon is a hormone made in the pancreas which frees sugar stored in the liver and raises the blood glucose level. Glucagon is used in an emergency situation to raise the blood glucose level in an unresponsive, hypoglycemic student.

II. Supplies:

A. Glucagon kit

B. Alcohol wipe, cotton ball

C. Sharps container

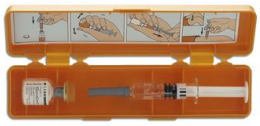
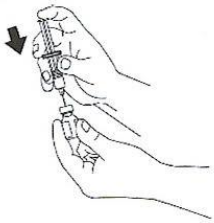
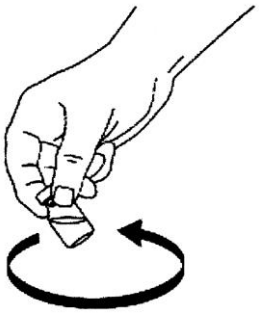
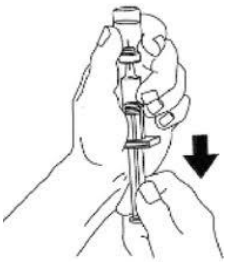
D. Gloves

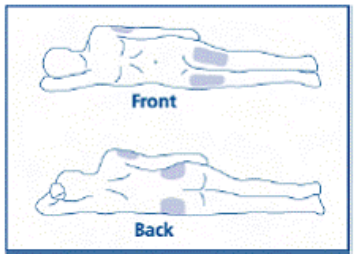
E. IHP

III. Preparation

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Review Universal Precautions	These measures are designed to prevent spreading infectious disease. Refer to Universal Precautions Handout.
B. Review student's IHP, particularly the ALGORITHMS page. Identify when procedure is indicated	All specialized procedures conducted in the school setting require written licensed prescriber orders and parent/guardian consent. The IHP also contains specific information about the student's target blood glucose level and standard of care instructions based on the test results. Glucagon is needed if the student is unconscious, seizes, or is unable to swallow.
C. Obtain glucagon and ensure it has been stored appropriately and has not expired.	Store at room temperature (68-70 degrees). Avoid direct sunlight. Check expiration date.

IV. Procedure

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Send someone to call 911.	
B. Place student on his/her side.	To prevent aspiration. Nausea and vomiting is a common side effect after glucagon administration.
C. Gather supplies	
D. Wash hands, put on gloves.	Refer to Universal Precautions Handout.
E. Remove cap from glucagon vial, pull needle cover off syringe.	
F. Insert needle through rubber stopper on vial of glucagon and inject entire contents of syringe into vial of glucagon powder.	Diluting solution may be in a vial or prepackaged in a syringe. 
G. Leaving syringe in place, swirl gently until dissolved (solution should be clear and colorless).	
H. Hold vial upside down and slowly withdraw the amount of solution from the vial into the syringe as specified in the student's IHP.	

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
I. Check for air bubbles in the syringe. Tap any visible air to the top of the syringe and gently push on the plunger until the air is removed.	
J. Select appropriate injection site (buttock, arm, or thigh) and cleanse with alcohol wipe, if possible. Insert needle at 90 ° angle and inject into the tissue.	
K. Withdraw needle, apply slight pressure to injection site with cotton ball.	
L. Keep student positioned on side in recovery position. If student is on an insulin pump, place pump on 'suspend' or disconnect.	
M. Dispose of sharps appropriately. Do NOT recap needle. • Remove gloves and wash hands.	Refer to Universal Precautions Handout.
N. Wait 15 minutes, monitor level of consciousness and breathing. Check blood glucose, if able. Stay with student until EMS arrives. 1. If no response and another dose is available, repeat glucagon procedure. 2. If responsive and alert enough to swallow safely, offer juice. Wait 15 minutes and give protein and carbohydrate snack if the student is not nauseous or vomiting. 3. Notify school nurse and parent.	After administering glucagon, student should be transported to hospital (in remote area, nearest medical facility). Continued monitoring is important. Student should regain consciousness in 15 minutes. You must be prepared to administer CPR. Do not be surprised if the blood glucose level is high (over 200), nausea or vomiting occurs, the student is incoherent or does not recall being unconscious, and/or if the student has a headache. The student needs to be fed additional simple and complex carbohydrates, as tolerated, to prevent another hypoglycemic episode.

O. Document procedure in student's individual treatment record.	Record: 1. Date and time. 2. Amount and type of glucagon given. 3. Site of administration. 4. Student's response and action taken. 5. Signature of personnel performing.

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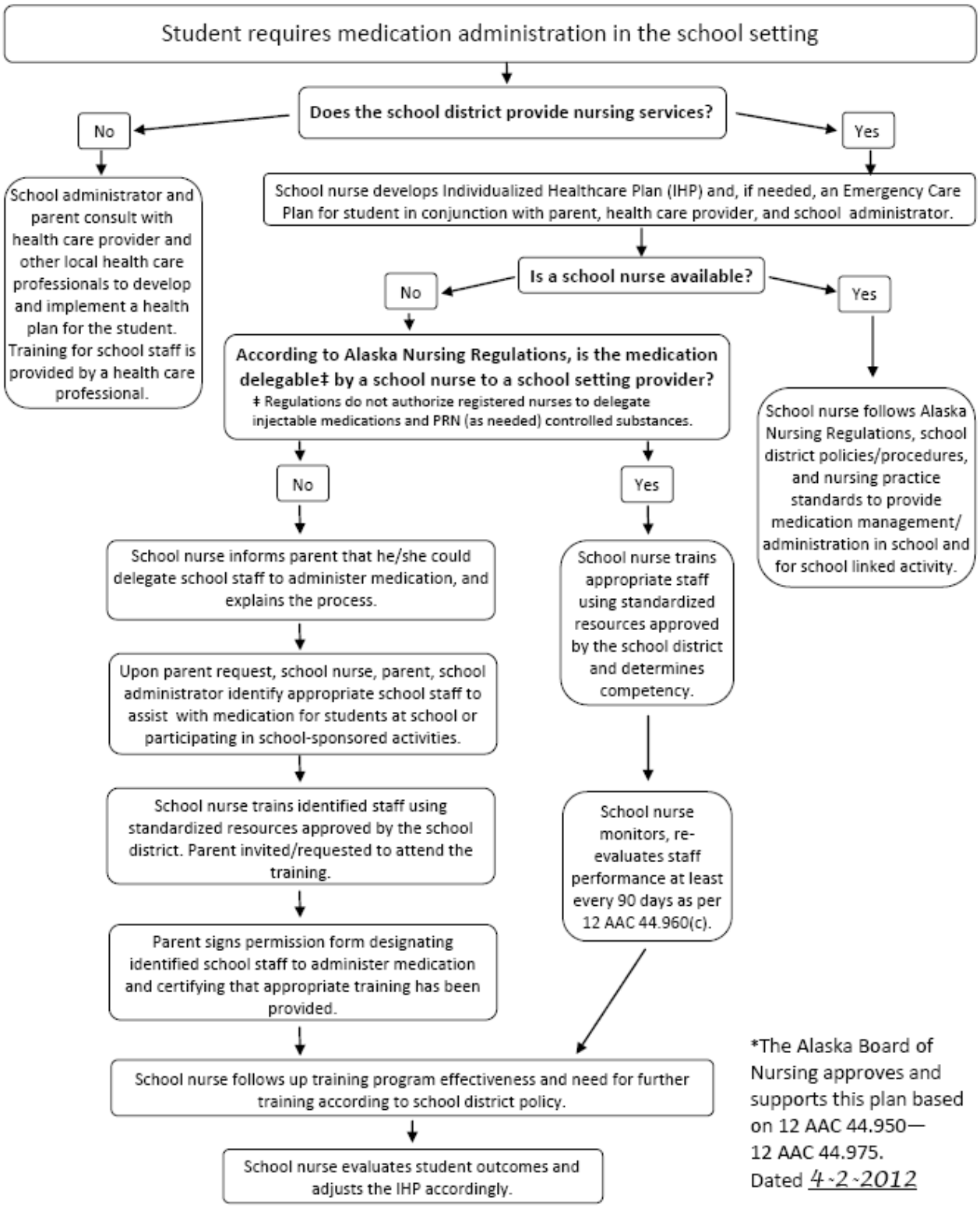
Medication Administration in the School Setting

Delegation Decision Tree *



*The Alaska Board of Nursing approves and supports this plan based on 12 AAC 44.950—12 AAC 44.975.
Dated 4-2-2012

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Confidentiality Handout

I. Overview

Student confidentiality is maintained in all written and verbal communications, in accordance with the Family Educational Rights and Privacy Act (FERPA) regulations. Confidentiality is the obligation not to disclose willingly any information obtained in confidence.

Basic principles include:

- Respect for an individual's right to privacy;
- Respect for human relationships in which personal information is shared;
- Appreciation of the importance of confidentiality to both individuals and society; and
- Expectation that those who pledge to safeguard confidential information will do so.

Confidential information may include, but is not restricted to, disclosures of:

- Health information including the student's identity, medical condition(s), physical, mental or emotional abuse;
- Family problems;
- Substance abuse;
- Criminal behavior;
- Sexual activity; or
- Suicidal thinking.

As trained unlicensed school staff, the confidential nature of information concerning students must be respected. Confidential information may be exchanged only with authorized personnel or agencies directly concerned with the students' welfare (school nurse, nurse sub or school principal/ administrator).

II. Supplies – FERPA regulations (http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html)

III. Procedures – Trained unlicensed school staff should:

A. Consult and collaborate with the school nurse and/or school administrator for purposes of more effectively helping the student. Staff should share only such information that will serve the student's best interests, and divulge the student's name only when necessary.

B. Consult with the school nurse or school administrator before making a decision if in doubt to the reasonableness of a course of action regarding the sharing of confidential information.

C. Share information verbally with other professional colleagues rather than giving them copies of notes and ensure that colleagues respect the confidential nature of the information being shared.

D. Take care when sharing information about students that the information is accurate and unbiased.

E. Guard against sharing confidential information in halls, staff rooms or other public places where persons who do not need to know can overhear it.

F. Not leave reports, student service records, computer files or log books where unauthorized people can have access to them.

G. Keep accurate and objective records to facilitate the provision of services to students. Failure to keep records is negligence. Notes should be made as immediately as possible to the time of the event(s), and the original notes should never be changed. Any additions should be initialed, signed and dated.

H. Make the student aware that confidential information is being recorded, share such information with the student and clarify the information with student, school nurse, or administrator, if needed.

I. Take care that individual student records are kept in a secure location.

Universal Precautions Handout

I. Overview

Occupational Health and Safety Administration's (OSHA) *Universal Precautions* refers to a set of protocols for handling body fluids properly to protect against bloodborne pathogens. Bloodborne pathogens are infectious microorganisms in human blood that can cause disease in humans. These pathogens include but are not limited to hepatitis B (HBV), hepatitis C (HCV), and human immunodeficiency virus (HIV). Bloodborne pathogens can be found in blood, semen, vaginal secretions, and breast milk. Body fluids that do NOT pose a risk of bloodborne pathogen transmission unless visibly contaminated with blood include: urine, stool, saliva, emesis, nonpurulent respiratory secretions, tears, sweat or nasal discharge. Even though these other body fluids may not contain bloodborne pathogens, other infectious pathogens that cause other diseases may be present. Therefore, all blood, body fluids, secretions (including respiratory secretions), excretions (except sweat), non-intact skin and mucous membranes should be handled in a way that will prevent contamination with transmissible infectious agents (NOTE: this method is the Center for Disease Control and Prevention's *Standard Precautions* which evolved from Universal Precautions with additional protective standards).

These precautions include protocols to treat all body fluids as if they are contaminated. Protocols include:

- Good hand washing technique
- Personal Protective Equipment (PPE)
- Cleaning and disposing of body fluids

II. Supplies (for the purpose of medication administration):

A. Warm, running water.

B. Liquid soap.

C. Paper towels.

D. Plastic-lined and covered waste containers.

E. Alcohol-based hand sanitizer, if running water not accessible

F. Disposable gloves designed for medical use (latex or, because of the potential for allergy, non-latex [e.g., nitrile]).

G. Brooms and dustpans.

H. Approved germicidal solutions.

III. Procedures

A. Hand Washing

Hands must be washed with soap and water prior to beginning and after any planned procedure or when hands are visibly soiled. Good hand hygiene is the single-most effective procedure to prevent the spread of communicable disease in the school setting.

ESSENTIAL STEPS	KEY POINTS-PRECAUTIONS
A. Wet hands using warm, running water.	Warm water combined with soap makes better suds than cold water. Running water is necessary to carry away dirt and debris that contain microorganisms.
B. Apply liquid soap and lather well.	Bacteria can grow on bar soap and in soap dishes. Use plain non-antimicrobial liquid soap for most circumstances; use anti-microbial soap for specific circumstances, e.g., control of outbreaks or infections.
C. Rub hands together in a circular motion for 20 seconds.	Friction from rubbing hands together along with the effect of the soap loosening of the germs from the skin work together with the running water for good hand hygiene. Front and back of hands, between fingers and knuckles, under nails, and the entire wrist area are washed.
D. Rinse hands well under running water.	Let water drain from wrists to fingertips.
E. Dry hands thoroughly with an air dryer or pat them dry with a fresh paper towel.	Use paper towels to turn off the water faucet, to open any exit door and to turn off bathroom lights. Dry skin may be cracked and potentially harbor microorganisms. Lotion is recommended after several hand washings.
OR	
A. Apply alcohol-based hand rub to the palm of one hand, then rub hands together covering all surfaces of hands and fingers until dry.	Hand sanitizers should never replace standard hand washing with soap and water but ethanol alcohol-based hand sanitizer can be used when hand washing facilities are not available. Hand sanitizers must have an alcohol base of at least 60% in order to be effective. Apply enough of the product (fragrance-free gel or foaming form preferred) to the palm of the hand that will wet the hands for at least 15 seconds (or longer according to the manufacturer).
B. Wash hands with soap and water as soon as possible.	Follow directions on the label to determine how many applications are recommended before washing hands with soap and water.

Gloves – Use and Removal

Gloving prevents blood and body fluids that may contain disease-producing microorganisms, from coming in contact with the caregiver's skin and prevents the spread of microorganisms to others.

ESSENTIAL STEPS	KEY POINTS-PRECAUTIONS
A. Wash hands.	Refer to *Hand Washing* procedure.
B. Apply gloves to both hands.	Individuals with open skin lesions should cover lesions with waterproof bandage prior to applying the gloves. Ensure gloves are intact without tears.
C. Gloves must be worn during entire time when handling body fluids.	Gloves are most often worn during diapering, administering first aid and certain medications, and cleanup of body fluids. Do not touch items with contaminated gloves that you or other people will be touching with your hands later. For example: water faucets, doorknobs, counter tops or other clothing.
D. To remove gloves after use: 1. Grasp outside of glove with opposite gloved hand; peel off; 2. Hold removed glove in gloved hand; 3. Slide ungloved fingers under the remaining glove at the wrist; peel off and discard 4. Drop gloves into plastic-lined trash container.	Do not touch skin with contaminated gloves.
E. Repeat hand washing.	Refer to *Hand Washing* procedure in this handout.

B. Cleaning and Disposing of Body Fluids

Items soiled with blood, body fluids, secretions, or excretions should be handled, transported, and processed in a manner that prevents skin and mucous membrane exposure and contamination of clothing.

ESSENTIAL STEPS	KEY POINTS-PRECAUTIONS
A. Wash hands.	Refer to *Hand Washing* procedure in this handout.
B. Put on gloves when handling or touching body fluids, mucous membranes or non-intact skin of others in the school setting, or handling items or surfaces soiled with body fluids.	• Refer to *Gloves - Use and Removal* procedure in this handout. • Individuals with open skin lesions should cover lesions with a waterproof bandage prior to applying the gloves.
C. Sharp items (e.g., needles, lancets) must be handled with extreme care to avoid puncturing the skin.	Sharp items are regulated waste and should be disposed of in a sharps container labeled BIOHAZARD. Regulated waste should then be disposed of according to school district policy.
D. Blood and other body fluids can be flushed down the toilet or carefully poured down a drain connected to a sanitary sewer.	
E. Other items for disposal that are contaminated with blood or other body fluids that cannot be flushed down the toilet should be placed in a lined waste receptacle. ✓ If saturated to the point of releasing blood or other body fluids if compressed (regulated waste), place in closable plastic container that is: ✓ Constructed to contain all contents and prevent leakage during handling, storage, transport or shipping ✓ Labeled with the standard fluorescent orange or orange-red BIOHAZARD label or color-coded in red bags or red containers	Immediately tie off the bag from the trash receptacle and dispose of it in appropriate general waste away from students. Bandages that are not saturated to the point of releasing blood or other potentially infectious materials if compressed would not be considered regulated waste. Regulated waste should then be disposed of according to school district policy.
✓ Closed before removal to prevent spillage or protrusion during handling, storage, transport or shipping. ✓ Placed in a secondary container if leakage is possible.	

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
F. Body fluid spills should be cleaned up promptly, removing all visible debris first.	Wipe up as much of the visible matter as possible with disposable paper towels and carefully place them in a leak-proof plastic bag that has been securely tied or sealed. This prevents multiplying of microorganisms.
G. For hard surfaces, immediately use a detergent to clean the spill area and follow with a disinfectant.	
H. For soft, non-washable surfaces, such as rugs and upholstery, apply sanitary absorbing agent, let dry, and vacuum.	Cover spills with absorbent material, leave for a few minutes to absorb, gently sweep up and discard in a plastic bag or vacuum. Blot to remove body fluids from the fabric or carpet as quickly as possible; then disinfect by spot-cleaning with a combination detergent/ disinfectant, and shampooing, or steam-cleaning the contaminated surface.
I. Handle soiled, washable material (i.e. clothing and towels) as little as possible, at the location where it was used.	Send soiled clothing home with the student in a sealed, plastic bag. Wash and dry contaminated school-owned towels separately from non-contaminated laundry. Wash in soap and hot water (140-160 degrees F) AND either liquid sodium hypochlorite bleach or dry bleach (which will not affect fabric colors). Dry on warm temperature setting.
J. Rinse non-disposable cleaning equipment (dustpans, buckets), clean with detergent followed by the disinfectant.	Non-disposable rags or mops should be treated as contaminated laundry.
K. Remove and discard gloves into covered, plastic-lined waste container.	Refer to *Gloves - Use and Removal* procedure in this handout.
L. Wash hands.	Refer to *Hand Washing* procedure in this handout.

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Medication Administration – General Rules

I. Overview: Medication administration to students is one of the most common health services provided in schools. Medication non-adherence at school has been linked to a variety of poor educational, social/emotional and physical outcomes. Many students with chronic health conditions need access to medications at school in order to enhance their overall health, stabilize their condition as well as promote and support their academic achievement.

To provide for the best possible medical outcome, protocols should be in place to prevent medication error. The leadership in developing safe guidelines lies with the professional school nurse, the health care provider and the parent. Training and education of staff and parents will help prevent errors in usage and dosage. General guidelines should be in place for administration of all medications at schools.

II. Supplies

A. Prescribed medication in original pharmacy-labeled container.

B. Appropriate dosing device (ex. syringe, cup).

C. Secure storage area.

III. Preparation

ESSENTIAL STEPS	KEY POINTS-PRECAUTIONS
A. Review the student's IHP.	All specialized procedures performed in the school setting require a written order from a licensed prescriber and parent/guardian consent. The school nurse should be notified immediately by trained unlicensed school staff of any change in the medication order.
B. The medication should be brought to school in the original child resistant container with the prescription label or over-the-counter medication manufacturer's label intact. Prescription medication labels should include: student name, name of medication, dosage, route of administration, frequency of administration, health care provider name and phone number, date issued, and prescription number.	Instructions should be clear and name of the student correct for both first and last names on the label.
C. Store medication in a designated locked and secured area. Only designated personnel and self-medicating students should have access to the medication.	Locked storage will prevent potential drug abuse, theft, and possibility of overdose.

IV. Procedure:

ESSENTIAL STEPS	KEY POINTS/PRECAUTIONS
A. Wash hands and put on gloves, if needed	Refer to Universal Precautions Handout
B. Remove the medication from the storage area and follow the 5 rights of medication: 1. The right student 2. The right medication 3. The right dose 4. The right time 5. The right route of administration Repeat the 5 rights when administering the medication to the student and when returning the medication to the secured storage area.	1. Confirm that the student to receive the medication is the correct student. An approved safety check is to ask student's name and other identifying information such as birth date or parent/guardian name. Photo identification may be used. 2. Confirm that the medication to be given is the medication ordered by the health care provider, is the medication the parents/legal guardians have given permission to be administered at school and is the medication in the prescription labeled container. 3. Confirm the amount of medication prescribed is the dose of medication to be given to the student. 4. Confirm that the student is getting the medication at the time prescribed. 5. Confirm that the student is getting the medication in the prescribed route (e.g., if injection, using the correct injection device into the correct location)
C. Allow the student to self-administer whenever possible under the observation of trained personnel. If a student is unable to take his/her medication, trained unlicensed school staff should administer the prescribed medicine.	Particularly in younger students, observation by designated trained personnel is necessary to ensure that the student has actually taken the prescribed medicine. This lessens the possibility of a lost or forgotten medication.

D. Document the procedure on the student's individual treatment record. Use a separate record for each medication.	Record: 1. Date and time. 2. Amount and name of medication given. 3. Site of administration (e.g., oral, injection site) 4. Student's response and action taken. 5. Signature of personnel performing.
ESSENTIAL STEPS	KEY POINTS-PRECAUTIONS
E. Observe student's response to medication. Document and report to parent/guardian and school nurse.	This information may be necessary for student's parent/guardian and/or licensed prescriber to evaluate effectiveness.

V. Additional considerations:

ESSENTIAL STEPS	KEY POINTS-PRECAUTIONS
A. If vomiting should occur after medication is given, DO NOT REPEAT THE DOSE OF MEDICATION UNLESS OTHERWISE DIRECTED BY THE IHP.	Notify parent/guardian and school nurse.
B. Ensure that student's medication is taken on all school-sponsored events.	Ensure that medication is stored at correct temperature and is under control of trained unlicensed school staff.

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Field Trip Considerations

Meeting the needs of students with diabetes requires advance planning for special events such as field trips and school-sponsored extracurricular activities held before or after school. With proper planning for coverage by the school nurse, trained diabetes school staff or parent and by adjusting insulin dosage and meal plans as needed, students with diabetes can participate fully in all school-related activities. **Although parents should be invited to chaperone field trips, parental participation should never be a prerequisite for participation for students with diabetes.** The student's Individualized Healthcare Plan (IHP) should provide general direction in maintaining access to healthcare during school-sponsored activities and field trips that take place during or after school hours. As occasions arise, specific plans may need to be developed.

- Parents should have an open invitation for accompanying your child on all field trips as a classroom chaperone.
- If a parent cannot regularly participate, a school nurse or trained unlicensed school staff member – *not* the classroom teacher – should attend field trips.
    - If the responsible adult is not a school nurse or parent, the parent may need to authorize a trained unlicensed school staff to administer glucagon and/or insulin, as school nurses are not authorized by the Board of Nursing to delegate these tasks.

Field trip considerations for students with diabetes

1. Emergency supplies should always be available, either with the student or with the responsible adult. These supplies include: blood glucose meter and testing supplies (unless the student carries his/her own), juice or other source of rapid acting glucose (e.g., glucose tabs) extra snacks (e.g., fruit, yogurt, sandwich, or crackers), parents and emergency phone numbers, water, insulin, and glucagon (if ordered).
2. As appropriate, an adult should participate who is trained in and willing to administer glucagon. A cell phone should be available for use on the field trip in the event of an emergency.
3. If the student will be eating while on a field trip, insulin will need to be administered by a school nurse or trained unlicensed school staff according to the IHP. Advance notice will allow the parent/student time to determine amount of carbohydrates to be eaten on the field trip or to bring their own lunch with carbohydrates already counted.

Trained unlicensed school staff responsibilities:

1. Complete training in diabetes management, including medication administration, in accordance with Alaska state regulations and as directed by the student's IHP.[8] This will assure that he or she knows the basics of diabetes management, including signs and symptoms of high and low blood glucose reactions and appropriate response and treatment.
2. Understand the implications of extended exercise (i.e., walking all day through the zoo).
3. Understand the potential consequences of altering designated snack and meal schedules.

Further considerations:

- ✓ Bus drivers need to know the child may eat and or drink while on the bus.
- ✓ The personnel at the venue where the field trip is to take place need to know food and drink will be brought in as a medical necessity.

[8] Alaska Board of Nursing regulations authorize school nurses to train unlicensed school staff using a standardized curriculum approved by the Board and the school district. Parents are encouraged to attend this training.

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Weekly Lunch Record:

Foods Listed at Home and Not Eaten at School Will Be Circled and Subtracted

Monday Date:_____ Lunch Time:

_____

_____ =

_____ carbs

_____ =

_____ carbs

_____ =

_____ carbs

_____ =

_____ carbs

Total carbs = _____

<Breakfast BG:

_____

< Lunch BG: _____

Coverage ___ + Correction____ = Lunch Dose ____

< Departure BG:

_____

< Dinner BG: _____

Notes: _____

Tuesday Date:_____ Lunch Time:

_____

_____ =

_____ carbs

_____ =

_____ carbs

_____ =

_____ carbs

_____ =

_____ carbs

Total carbs = _____

<Breakfast BG:

_____

< Lunch BG: _____

Coverage ___ + Correction____ = Lunch Dose ____

< Departure BG:

_____

< Dinner BG: _____

Notes: _____

Wednesday Date:_____ Lunch Time:

_____

_____ =

_____ carbs

_____ =

_____ carbs

_____ =

_____ carbs

_____ =

_____ carbs

<Breakfast BG:

_____

< Lunch BG: _____

Coverage ___ + Correction____ = Lunch Dose ____

< Departure BG:

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< Dinner BG: _____

Notes: _____

Total carbs = _____

Thursday Date:_____ Lunch Time:

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_____ carbs

Total carbs = _____

<Breakfast BG:

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Coverage ___ + Correction____ = Lunch Dose ____

< Departure BG:

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Notes: _____

Friday Date:_____ Lunch Time:

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_____ carbs

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_____ carbs

Total carbs = _____

<Breakfast BG:

_____

< Lunch BG: _____

Coverage ___ + Correction____ = Lunch Dose ____

< Departure BG:

_____

< Dinner BG: _____

Notes: _____

Based on Anchorage School District form

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Quick Tip Sheet

Signs and Symptoms of Low Blood Glucose (Hypoglycemia)

HYPOGLYCEMIA

LOW BLOOD GLUCOSE
KNOW THE SYMPTOMS

An individual may not always recognize symptoms of low blood glucose. These common symptoms, and others, may indicate low blood glucose.

Hungry

Shaky/weak/clammy

Blurred vision/ glassy eyes

Dizzy/headache

Sweaty/flushed/hot

Tired/drowsy

Mood/ behavior change

Inattentive/spacey

Slurred/ garbled speech

If individual is confused/unable to follow commands, unable to swallow, unable to awaken (unconscious), or is having a seizure or convulsion,
GIVE GLUCAGON

Adapted from: Children's Diabetes Foundation at Denver

From WI Tip Sheets (http://www.dhs.wisconsin.gov/diabetes/PDFs/srg02.pdf)

LOW BLOOD SUGAR (Hypoglycemia) MANAGEMENT for Classroom Teachers, Bus Drivers and Other Support Staff

Student:	School:	Grade/Teacher:	
Parent/Guardian:	Home #:	Work #:	Cell #:
Parent/Guardian:	Home #:	Work #:	Cell #:
Trained Diabetes Personnel:			
Insulin administered at school by: Pump ____ Pen ____ Syringe ____ None ____			

PHOTO HERE

Causes of Hypoglycemia

- Too much insulin
- Missed food
- Delayed food
- Extra exercise
- Excitement

SUDDEN symptom onset

MILD SYMPTOMS (alert) → **MODERATE SYMPTOMS (not alert)** → **SEVERE SYMPTOMS**

MILD SYMPTOMS (alert)	MODERATE SYMPTOMS (not alert)	SEVERE SYMPTOMS
_ Hunger _ Irritable _ Anxious _ Crying _ Tired, Drowsy _ Personality change _ Other: _____	_ Confusion _ Slurred speech _ Poor coordination _ Behavior changes _ Other: _____	_ Seizure _ Loss of conscious _ Unable to swallow _ Combative _ Other: _____
_ Shaky _ Dizzy _ Sweaty _ Pale _ Spacey		

If symptoms, take action

- Notify school nurse or trained diabetes personnel.
- Never leave unattended
- Never send anywhere unaccompanied.
- Check blood glucose, if possible. Treat immediately if below 70.
- Always treat with fast-acting carbohydrate source if in doubt or blood glucose reading is unavailable.
- Student should not exercise.
- If away from school, call parent to inform of situation.

MILD TO MODERATE

- ✓ Provide carbohydrate source (test blood glucose, if possible)
- ✓ Wait/observe for 15 minutes
- ✓ Retreat if symptoms persist or blood glucose reading is under 70.
- ✓ Provide snack of carbohydrate and protein (e.g. cheese & crackers).

SEVERE

- ✓ **Call 911.**
- ✓ Position on side.
- ✓ Disconnect pump if present.
- ✓ Contact parent/guardian and school nurse.
- ✓ Give Glucagon – if ordered and if staff trained to administer the Glucagon is present.

15 GM fast acting carbohydrate =

- ½ c. juice
- 3 - 4 glucose tablets
- ½ c. regular soda
- 6 - 7 small sugar candies (to chew)

Adapted from Colorado Kids with Diabetes (http://www.coloradokidswithdiabetes.org/index.php/Nurse-Files/Download-document/Flow-Chart-Low-Blood-Sugar.html)

5/28/13

Quick Tip Sheet

Signs and Symptoms of High Blood Glucose (Hyperglycemia)

HYPERGLYCEMIA

HIGH BLOOD GLUCOSE

KNOW THE SYMPTOMS

An individual may not always recognize symptoms of high blood glucose. These common symptoms, and others, may indicate high blood glucose.

Frequent urination
(bedwetting in children)

Extreme thirst/ dry mouth

Sweet, fruity breath

Tiredness/fatigue

Increased hunger

Blurred vision

Nausea/vomiting

Stomach pain/ cramps

Unusual weight loss

If individual has labored breathing, weakness, is confused or unconscious,
SEEK MEDICAL ASSISTANCE

Adapted from: Children's Diabetes Foundation at Denver

From WI Tip Sheets (http://www.dhs.wisconsin.gov/diabetes/PDFs/srg02.pdf)

HIGH BLOOD SUGAR (Hyperglycemia) MANAGEMENT for Classroom Teachers, Bus Drivers and Other Support Staff

Student:	School:	Grade/Teacher:	PHOTO HERE
Parent/Guardian:	Home #:	Work #:	Cell #:
Parent/Guardian:	Home #:	Work #:	Cell #:
Trained Diabetes Personnel:			
Insulin administered at school by: Pump ____ Pen ____ Syringe ____ None ____			

Causes of Hyperglycemia

- Too much food
- Not enough insulin
- Decreased activity
- Illness
- Infection
- Stress/excitement
- If pump – insulin not being delivered (empty, tube kinked, etc.)

Gradual symptom onset

- Over several hours or days

MILD to MODERATE SYMPTOMS

_ Thirst
_ Frequent need to go to the bathroom
_ Changed appetite, stomachache
_ Fatigue, sleepiness
_ Blurred vision
_ Other: _____

SEVERE SYMPTOMS

_ Extreme thirst
_ Nausea
_ Severe abdominal pain
_ Fruity breath
_ Increased sleepiness
_ Lethargy
_ Vomiting
_ Labored breathing
Other: _____

IF SYMPTOMS – TAKE ACTION

- Notify school nurse or trained diabetes personnel.
- Keep student nearby and under observation
- Check blood glucose, if possible.
- If blood glucose reading is above 300 twice when tested 3 hours apart and if feasible and supplies are available, the student should test for urine ketones. If no ketone test possible, treat as for moderate to large ketones (below).
- If away from school, call parent to inform of situation.

Ketones = Negative or Trace/Small

- ✓ Encourage exercise.
- ✓ Provide unrestricted water or sugar-free drinks.
- ✓ Allow unrestricted access to the restroom.
- ✓ Student *may* require insulin dose. If pump – may require parent or school nurse attention (filling of reservoir, changing set, insulin administration, etc.).
- ✓ Recheck blood glucose reading and, as needed, ketones in 2-3 hours.

Ketones = Moderate to Large

- ✓ Restrict PE and recess (physical activities).
- ✓ Provide unrestricted water or sugar-free drinks.
- ✓ Allow unrestricted access to the restroom.
- ✓ Student **will** require an insulin dose. If pump – parent or school nurse attention is required.
- ✓ Recheck blood glucose reading and, as needed, ketones in 2-3 hours.

SEVERE (vomiting, lethargy, labored breathing)

- ✓ **Call 911.**
- ✓ Notify school nurse and parent.

Adapted from Colorado Kids with Diabetes (http://www.coloradokidswithdiabetes.org/index.php/Nurse-Files/Download-document/Flow-Chart-High-Blood-Sugar.html)

5/28/13

Appendix 4: Resources

This curriculum is built on the shoulders of others, with enormous gratitude to them for paving the way! In particular, we used the Colorado Kids with Diabetes website (http://www.coloradokidswithdiabetes.org/).

A number of diabetes in schools resources have been compiled by the National Association of Chronic Disease Directors' Diabetes Council School Health Committee and posted on their website (http://www.chronicdisease.org/?page=DiabetesSchoolResour)

Relevant position papers are listed and linked to this document on pages 5-6.

Training materials from the American Diabetes Association (*School Training Curriculum*), the National Diabetes Education Program (*Helping the Student with Diabetes Succeed*), the UCD Barbara Davis Center for Childhood Diabetes (*Pink Panther Book*) and other sources are listed and/or linked specific sections of the curriculum.

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