



Guidelines For Training School Employees Who Are Not Licensed Health Care Professionals

**As Required by
Texas Health and Safety Code,
Section 168.005**

Texas Diabetes Council

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Introduction

Texas Health and Safety Code, Section [168.004](#) requires school principals to seek and make efforts to designate staff who are not health care professionals to serve as unlicensed diabetes care assistants (UDCAs) when students with diabetes are enrolled in their school. Texas Health and Safety Code, Section [168.005](#), requires the Texas Diabetes Council (TDC), with the assistance of the following entities, to develop guidelines for the training of UDCAs:

- Texas Department of State Health Services (DSHS);
- American Diabetes Association (ADA);
- Breakthrough T1D (formally the Juvenile Diabetes Research Foundation International);
- American Association of Diabetes Educators;
- Texas Nurses Association;
- Texas School Nurse Organization; and
- Texas Education Agency.

The purpose of the guidelines is to provide schools a resource for training individuals to be UDCAs. Schools are not required to develop a unique curriculum, as there are resources available that cover the training components delineated in statute.

Guidelines for Training Unlicensed Diabetes Care Assistants

At each school in which a student with diabetes is enrolled, the school principal must seek non-medical school personnel to train as UDCAs to assist students with diabetes. Schools that do not have a full-time nurse¹ must make efforts to train at least three persons, whereas a school with a full-time school nurse should train at least one individual. Per Health and Safety Code, Section [168.004\(b\)](#), UDCAs must be supervised by the school principal.

The school nurse assigned to the campus is responsible for training the UDCAs. If a school nurse is not assigned to the campus, training should be provided by a health care professional with expertise in the care of persons with diabetes.

Per Health and Safety Code, Section [168.005\(c\)](#), the training must be provided before the beginning of the school year or as soon as possible following:

- The enrollment of a student with diabetes at a campus that previously did not have any students with diabetes; or
- A diagnosis for a student at a campus that previously did not have any students with diabetes.

Training Content

Training curriculum and teaching methods for preparing UDCAs should include both knowledge and skills components. By the end of the training, UDCAs must:

1. Recognize and treats the signs and symptoms of low blood sugar (hypoglycemia²) and high blood sugar (hyperglycemia³) levels;

¹ Full-time school nurse is an educator employed to provide full-time nursing and health care services and who meets all the requirements to practice as a registered nurse (RN) pursuant to the Nursing Practice Act and the rules and regulations relating to professional nurse education, licensure, and practice and has been issued a license to practice professional nursing in Texas.

² Hypoglycemia means low blood sugar/glucose levels. Physical symptoms may include hunger, dizziness, sweating, trembling, inability to concentrate, confusion, and/or headache.

³ Hyperglycemia means high blood sugar/glucose levels. Physical symptoms may include thirst, frequent urination, drowsiness, irritability, and blurred vision.

2. Understand and know how to take or help the student take proper action if the blood sugar and/or ketones (type of chemical that your liver produces when it breaks down fats) are outside the range indicated by the student's diabetes management and treatment plan (DMTP⁴);
3. Understand the essential elements of the Individual Health Plan (IHP);⁵
4. Perform or assist a student with monitoring blood sugar, using a fingerstick/blood glucose meter and/or continuous glucose monitor (CGM),⁶ and record the results in the designated record;
5. Perform and assist a student with ketone testing using urine/blood testing and record the results in the designated record;
6. Safely and properly administer insulin and glucagon⁷ according to the student's DMTP and IHP, and describe the actions taken in the designated record;
7. Know when to call the parent(s), a health care professional, and/or emergency medical services (EMS) for help.
8. Understand the nutritional needs of students with diabetes, including but not limited to:
 - ▶ The need for regular meals;
 - ▶ How snacks are utilized in the daily regimen of children with diabetes;
 - ▶ How exercise affects blood sugar/glucose; and
 - ▶ How changes in schedules, such as illness, exams, field trips, and other school-sponsored events, can affect children's nutritional needs.

⁴ Diabetes management and treatment plan (DMTP) is a document that outlines physician's or provider's orders that are to be followed in the school setting.

⁵ Individual Health Plan (IHP) is a document that outlines specific orders and tasks for the school nurse and/or school staff to implement to take care of a student with diabetes. This is developed in accordance with the DMTP and by the school nurse and/or principal.

⁶ Continuous Glucose Monitor (CGM) is a device that records blood glucose levels throughout the day. The CGM works through a sensor inserted under the skin that measures interstitial blood glucose levels (the blood glucose found in the fluid between cells) at regular intervals.

⁷ Glucagon is a hormone that raises blood glucose levels.

Training Options for Schools that Do Not Have a School Nurse

A school that does not have an assigned school nurse needs to arrange for training by a health care professional that has expertise in diabetes care. The principal or designee can contact a student's diabetes care physician to identify an appropriate health care professional with expertise in the care of persons with diabetes and who could provide training.

Schools may also identify an appropriate healthcare professional through the following entities:

- Community hospital diabetes program;
- ADA;
- Children's hospital specialty care center diabetes program;
- Area chapter of the Association of Diabetes & Care Education Specialists (ADCES);
- Certification Board for Diabetes Care and Education
- A regional Education Service Center (ESC) school health specialist;
- A local health department;
- A regional public health service nursing office;
- A community-based organization that offers diabetes education; or
- A federally qualified health center (FQHC).

The school nurse or principal must maintain a copy of training guidelines and any records associated with training, as required by Health and Safety Code, Sec. [168.005\(e\)](#).

Knowledge Testing and Skills Check

UDCAs should complete annual training to assess knowledge and skills of diabetes care.

The TDC has developed a Sample Test for Unlicensed Diabetes Care Assistants ([Appendix F](#)) for schools to reference. The school district can determine what constitutes a passing score.

The TDC also developed a Sample Tasks and Skills Checklist for UDCAs ([Appendix C](#)). The TDC recommends that UDCAs be able to successfully perform these tasks three times.

School staff should not perform the duties of a UDCA until they have successfully completed the knowledge testing and skills check requirements. A failing score or failure to demonstrate required tasks and skills must be followed up with additional training and retesting.

If desired, prior to annual testing, trainers can conduct a brief overview of the following:

- The school's responsibilities in the care of a student with diabetes and the use of the DMTP;
- The symptoms of hypo- and hyperglycemia;
- Steps to take if blood glucose values are out of the range identified in the IHP and DMTP;
- Understanding the IHP and DMTP;
- Complications that require emergency assistance;
- Recommended schedules and food intake for meals and snacks;
- The effect of physical activity on blood glucose levels;
- Proper actions to be taken if a student's schedule is disrupted; and
- The steps to take in an emergent situation.

Training Updates

Since UDCAs are considered members of the care team, they also need to be informed in writing of any changes in the student's DMTP or in the IHP as they occur by the family or student. UDCAs need to review the student's diabetes plan at the beginning of each semester. If a student's diabetes care needs to change during the year, the UDCA should be trained on any relevant topics related to the new care plan.

Training Supplies

To ensure comprehensive hands-on training, the following list of supplies is recommended:

- Simulated insulin
- Insulin syringe/pen needles
- Ketone meter
- Ketone strips
- Glucose tablets
- Glucagon
- Antiseptic wipes
- Blood glucose meter with test strips and lancets
- Sharps container
- Latex-free gloves
- Laminated guide to insulin pumps

Schools may be able to obtain training supplies from the following sources:

- Pharmacies
- Manufacturers of diabetes products and supplies
- Local health departments
- Parent donations, especially expired glucagon
- Physician offices
- Hospitals
- Clinics

Schools can purchase simulated insulin trainer pens through their school health supplier or may be able to receive a donation from a physician's office.

Universal Precautions: Disposal of Sharps

Staff and students with diabetes need to adhere to the district or school policy that addresses universal precautions to prevent potential needle stick injuries and

potential infection. The school or district policy should be consistent with standard universal precautions and local waste-disposal laws.

Used sharps⁸ should be placed in a strong, plastic container, sealed, and labeled. The plastic container should be placed in the trash.

Sharps users can take their own sharps containers filled with used needles to appropriate collections sites: doctors' offices, hospitals, pharmacies, health departments, or fire stations. Services are free or have a nominal fee. Check with pharmacists or other health care providers for availability in your community.

Other resources include:

- The [Texas Commission on Environmental Quality \(TCEQ\) website](#) has information on how to dispose of sharps, syringes, and other medical waste. The agency may be reached via phone at 512-239-1000.
- The [Safe Needle Disposal website](#) provides information on how to dispose of used sharps and disposal locations across the state.
- The [SafetyIsThePoint website](#) provides information on how to safely dispose of used household sharps, wherever people live, work or travel in the United States.

⁸ Sharps is a medical term for devices with sharp points or edges that can puncture or cut skin.

Transporting or Supervising Students with Diabetes

Texas Health and Safety Code, Section [168.006](#), requires school districts to provide an information sheet to each district employee who is responsible for providing transportation for a student with diabetes or supervising a student with diabetes during an off-campus activity. The information sheet must:

- Identify the student with diabetes;
- Identify potential emergencies that may occur as a result of the student's diabetes and the appropriate responses to such emergencies;
- Provide the telephone number of a contact person in case of an emergency involving the student with diabetes.

Per Health and Safety Code, Section [168.008](#), the school should permit a student to attend to their own care as outlined in the IHP, which may include:

- Checking and/or monitoring blood sugar/glucose levels;
- Administering diabetes medication in accordance with the DMTP;
- Managing low and high blood sugar/glucose levels as quickly as possible;
- Carrying necessary diabetes supplies and equipment which may include a smart phone; and
- Performing this self-care in the classroom or any location at school.

Diabetes Training Resources for School Staff

The following resources are available for use as a part of a UDCA training program.

Educational Service Center (ESC)

Please contact your local ESC for UDCA training opportunities.

Website: tea.texas.gov/about-tea/other-services/education-service-centers

Texas Guide to School Health Services Diabetes

The DSHS website contains links to resources such as Centers for Disease Control and Prevention (CDC) diabetes basics, Texas IHP requirements for students with diabetes, and Texas School Nurses Organization diabetes care manual.

Website: [Texas Guide to School Health Services | Texas DSHS](#)

National Association of School Nurses (NASN) Learning Center

NASN has learning opportunities for a fee and may be accessed by creating a login. Learning opportunities include clinical guidelines, toolkits, e-manuals, leadership, quality improvement, standards of practice, and podcasts.

Website: learn.nasn.org

American Diabetes Association (ADA)

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

Written by the ADA Safe at School Working Group, an expert pediatric diabetes advisory group, this comprehensive guide provides a framework for supporting students with diabetes with a team-based approach. It has copy-ready sample action plans and includes resources and materials for school personnel, administrators, students, and their parents and guardians.

Website: [Helping the Student with Diabetes Succeed: A Guide for School Personnel](#)

- *Best Practices for the use of Diabetes Technology at Camp*

The ADA created modules that focus on the different types of medical technology for students with diabetes.

Website: diabetes.org/newsroom/consistent-use-of-diabetes

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

The American Diabetes Association developed a PowerPoint program with training modules. The modules are intended to be used by a trainer who is a school nurse or other health care professional with expertise in diabetes care to train other nurses and staff members about diabetes care tasks at school. The modules include, but are not limited to, CGM guidance for schools, emergency preparedness, case studies for school nurses, written plans, tips for school nurses, and more. The modules can be used in conjunction with *Helping the Student with Diabetes Succeed: A Guide for School Personnel*.

Website: [Diabetes Care Tasks at School: What Key Personnel Need to Know](https://diabetes.org/newsroom/consistent-use-of-diabetes)

Organizational Resources

Though not specific to training UDCAs, the following organizations have helpful diabetes information for schools.

Texas Diabetes Council

The Texas Legislature established the Texas Diabetes Council (TDC) in 1983. TDC members have worked with private and public healthcare organizations to promote diabetes prevention and awareness throughout the state.

Website: dshs.texas.gov/diabetes/texas-diabetes-council

Email: diabetes@dshs.texas.gov

Texas Diabetes Prevention and Control Program

The DSHS Diabetes Prevention and Control Program oversees federal and state programs that focus on diabetes education for the public.

Website: dshs.texas.gov/diabetes

Email: diabetes@dshs.texas.gov

American Diabetes Association (ADA)

The American Diabetes Association is a network of more than 565,000 volunteers, their families and caregivers, a professional society of nearly 12,000 health care professionals, as well as nearly 350 staff members. ADA has resources geared toward individuals, caregivers, and school personnel. Trainings, tips, resources, information on federal laws pertaining to diabetes, and much more information pertinent to school staff is located on the website.

Website: diabetes.org

Phone: 1-800-342-2383

Association of Diabetes Care & Education Specialists (ADCES)

ADCES® is an interdisciplinary professional membership organization dedicated to advancing the quality of diabetes care and education. Diabetes care and education specialists offer comprehensive education, personalized care and promote self-

management skills for people with diabetes, prediabetes and related cardiometabolic conditions.

Website: adces.org/

Phone: 1-800-338-3633

ADCES Texas Network

ADCES Texas Network represents and supports members and groups throughout Texas. Information for Texas ADCES leaders, networking groups, and Danatech is located on this website. Danatech is a diabetes technology for healthcare professionals. Danatech, powered by ADCES, was created to address the rapidly evolving diabetes technology landscape.

Website: adcesconnect.org/texascoordinatingbody/home

Phone: 1-800-338-3633

National Association of School Nurses (NASN)

The National Association of School Nurses (NASN) is a nonprofit organization that represents school nurses. NASN offers online courses, webinar recordings, data, and resources.

Website: nasn.org/home

Phone: 866-627-6767

Texas Nurses Association (TNA)

TNA provides a wide array of resources, including continuing education, practice protection, the member helpline, weekly e-newsletters with practice tips and the quarterly Texas Nursing magazine. TNA also works on legislation, such as the Texas Nursing Practice Act, to supporting nursing statewide.

Website: texasnurses.org/

Phone: 1-800-862-2022

Texas School Nurses Organization (TSNO)

TSNO's mission is to enhance whole student wellness and learning by strengthening school nursing practice. Resources, toolkits, their [Diabetes Care Manual](#), and a sample blood glucose monitoring consent form are located on the website.

Website: txsno.org/home

Breakthrough T1D

Breakthrough T1D, formerly Juvenile Diabetes Resource Foundation International, is the leading global organization funding type 1 diabetes⁹ (T1D) research. A community forum and resources for school staff and other professionals are located on the website.

Website: breakthroughT1D.org/

Phone: 1-800-533-2873

National Institute of Diabetes and Digestive Kidney Diseases (NIDDK)

NIDDK research creates knowledge about and treatments for diseases that are among the most chronic, costly, and consequential for patients, their families, and the Nation. A diabetes overview, diabetes management in schools, healthcare plans, and a blog are located on the website.

Website: niddk.nih.gov/health-information/professionals/clinical-tools-patient-management/diabetes/helping-student-diabetes-succeed-guide-school-personnel

Phone: 1-800-860-8747

Academy of Nutrition and Dietetics

The Academy of Nutrition and Dietetics offers information on nutrition and health, from meal planning and prep to choices that can help prevent and/or manage health conditions, and more. Articles, recipes, and food planning and preparation tips are located on the website.

Website: eatright.org

⁹ Type 1 diabetes, –previously called juvenile diabetes or insulin-dependent diabetes, is a chronic condition that causes a person’s blood glucose (or blood sugar) to get too high. It occurs when a person’s pancreas doesn’t make enough insulin or stops making it altogether.

Appendix A. Contributors

Name	Organization
Jennifer Sherman, JD	American Diabetes Association
Crystal Woodward, MPS	American Diabetes Association
Carla Cox, PhD, RDN, CDCES	On behalf of Association for Diabetes Care and Education Specialists
Kelly Fegan-Bohm, MD, MPH, MA	Texas Diabetes Council (TDC) member
Maryanne Strobel, RN, MSN, CDCES	Texas Diabetes Council (TDC) member
Dianna Pierson, MPH, BSN, RN	Texas Department of State Health Services
Barney Fudge	Texas Education Agency (TEA)
Laura Kincheloe, Ed.D., MSN, RN, NE-BC	Texas Nurses Association (TNA)
Becca Harkleroad, MPH, RN, NCSN	Texas School Nurses Organization (TSNO)

Appendix B: Sample Tasks & Skills Checklists for UDCAs

The sample checklist below is available as a resource for a school nurse or another qualified trainer to use in UDCA training.

Diabetes Medical Management Plan (DMMP)

- Review DMMP¹⁰ with parent or guardian.
- Obtain necessary supplies, equipment, and snacks.
- Educate UDCAs about the requirements of the DMMP.
- Develop IHP to be consistent with DMMP.

Individual Health Plan

- Read and understand each step of the plan.
- Identify signs of high and low blood sugar/glucose levels.
- Implement the IHP in accordance with the DMMP.
- Guide a student on actions to take when responding to high and low sugar/glucose levels.
- Know when and who to contact for more information or help (parent, student's physician, and emergency medical services).

Monitoring Diabetes at School

- Use blood glucose monitor(s) and/or CGM.
- Know when calibration of equipment is needed and the next steps to follow.
- Check ketone level.
- Record results and know what action is indicated.
- Know how to implement a back-up plan if there is a CGM malfunction/failure.

¹⁰ Diabetes Medical Management Plan (DMMP) is a document that describes the medical orders or diabetes care plan developed by the student's personal diabetes health care team and agreed to by the parents/guardians.

Insulin Administration

- Demonstrate aseptic and sterile techniques.
- Use insulin syringes, pens, pumps, or other delivery devices and prepare the correct dose.
- Inject subcutaneous (SQ) insulin.
- Record action (time, dose, site) and any student observation.
- Recognize proper attachments needed to properly use pump.
- Know how to disconnect the pump when indicated.
- Know how to administer a bolus dose of insulin.¹¹
- Recognize signs of malfunction and what to do in the event of a problem.
- Know how to change the infusion set if the order is included in the diabetes management and treatment plan.
- Know how to implement a back-up plan for insulin administration if there is a pump malfunction or failure.

Note: Specific training by a health care professional that works with the specific pump and written directions from the manufacturer is suggested. ADA created a document for best practices for the use of diabetes technology at camps, which can be found at diabetes.org/newsroom/consistent-use-of-diabetes. It has up to date tip sheets for each kind of pump. Parent participation in this instruction is recommended.

Glucagon Administration

- Know when to administer glucagon.
- Prepare medication using appropriate method.
- Calculate the proper dose, as ordered by an authorized health care professional.
- Place student on their side before administering.
- Know when to call EMS, school nurse (if applicable), and parent or guardian.

¹¹ Bolus insulin is an extra amount of insulin, usually from food, taken to cover an expected rise in glucose, often related to a meal or a snack.

- Always call EMS after administering glucagon, then call the parent.
- Record action and blood sugar/glucose test results.
- Give carbohydrate as per DMPP after consciousness is regained.

Appendix C: Sample UDCA Annual and/or Periodic Review Checklist

During an annual review, every UDCA should show competency in working with students with diabetes. Place a checkmark next to the recommended topic areas that you may need training, or you would like to receive additional information:

- Requirements of Health and Safety Code, Chapter [168](#)
- Diabetes management and treatment plan
- Individual health plan
- Recognizing symptoms of hypoglycemia and treatment
- Recognizing symptoms of hyperglycemia and treatment options
- Performing finger sticks/glucose checks using a glucose meter
- Using CGM
- Checking urine/blood for ketones
- Documentation
- Administration of insulin using individual student's prescribed device/delivery method
- Administration of glucagon
- Recognizing complications that require emergency assistance and follow up with 911 and parent/caregiver
- Understanding meal plans and snacks
- Understanding effects of physical activity on blood glucose levels
- What to do when a student's schedule is disrupted
- How to assist with insulin pumps
- Who to call in the event of an emergency

_____ How to access an individual with expertise in the care of persons with diabetes

_____ Safe disposal of sharps

_____ Understand the mental/social/emotional impact of diabetes upon the student.

_____ Other: _____

Appendix D: Sample Test for Unlicensed Diabetes Care Assistants

Please note: It is up to the school district to decide what score is deemed a passing score.

Name_____ Date_____

Instructions: Read the question or sentence below. Answer by checking only one answer for each option.

Diabetes Basics

1. Diabetes is:

_____a) a disorder of the pancreas that no longer secretes insulin, or the body does not use insulin properly

_____c) a disease of the liver

_____d) a disease of the gall bladder

2. The three main types of diabetes are:

_____a) type 1, type 2, and metabolic syndrome

_____b) type 1, type 2, and type A

_____c) type 1, type 2, and gestational diabetes

_____d) none of the above

3. The main function of the pancreas is to:

_____a) produce enough insulin to allow glucose to enter the body's cells

_____b) produce enough insulin to keep glucose values within a normal range

_____c) a and b

4. You can tell if a student has diabetes just by looking at him/her.

_____True_____False

5. Students with type 1 diabetes must take insulin.

_____True_____False

6. Students with type 1 diabetes are:

_____a) usually in the first grade

_____b) usually in middle school

_____c) any age

7. Students with type 2 diabetes may or may not take insulin.

_____True_____False

8. Students with diabetes who don't have a sensor, must check their blood glucose:

_____a) three times a day

_____b) five times a day

_____c) four times at school and four times at home

_____d) as outlined in their medical management and treatment plan

9. Diabetes is managed by:

_____a) following a recommended eating plan

_____b) taking medication as prescribed

_____c) getting physical activity

_____d) seeing a healthcare provider routinely

_____e) all of the above

10. The goal of good diabetes management is to:

_____a) be as healthy as possible

- b) avoid the complications associated with diabetes
- c) fully participate in all academic and extracurricular activities
- d) keep blood glucose levels within an acceptable range
- e) all of the above

11. Physical activity can help to:

- a) control weight
- b) maintain cardiovascular fitness
- c) lower blood glucose levels
- d) increase insulin sensitivity
- e) all of the above

Diabetes Management

12. Students with diabetes are required to have an individual health plan (IHP).

True False

13. If a student's blood sugar is in range prior to a meal, UDCA should administer bolus.

True False

14. The IHP should include the following:

- a) a list of all the medicines the student is to take while at school
- b) a schedule of when medicines are to be administered
- c) doses of medicines that will be taken at school
- d) ranges of glucose values and steps to take when the values are out of range
- e) when and how often the student is to have snacks

_____f) name and phone number of treating healthcare provider

_____g) a, c, and d

_____h) a, e, and f

_____i) all of the above

15. Insulin may be administered by using:

_____a) insulin syringes

_____b) an insulin pump

_____c) insulin pens

_____d) all of the above

16. Students with diabetes cannot eat foods with sugar.

_____True_____False

17. Students with diabetes may dispose of their blood testing equipment:

_____a) by taking lancets home, using safe needle disposal recommendations

_____b) by taking lancets to the nurse's office, using safe needle disposal recommendations

_____c) by adhering to the district policy related to safe needle disposal

_____d) by throwing away in the regular trash

_____e) all of the above

_____f) a, b, and c only

18. Symptoms of mild to moderate hypoglycemia may include:

_____a) hunger

_____b) headache

- _____c) dizziness
- _____d) excessive sweating
- _____e) trembling
- _____f) inability to concentrate
- _____g) confusion
- _____h) all of the above

19. Mild to moderate hypoglycemia is determined by:

- _____a) checking the student's blood glucose
- _____b) looking at the child and asking her/him how she/he feels

20. Mild to moderate hypoglycemia is treated by:

- _____a) eating
- _____b) administering insulin
- _____c) following the IHP
- _____d) a and c

21. Symptoms of severe hypoglycemia should be suspected if:

- _____a) the student collapses
- _____b) has a seizure
- _____c) a and b

22. Treating severe hypoglycemia should include:

- _____a) administering fast-acting glucose, if the student can swallow
- _____b) administering glucagon, if the student is unconscious
- _____c) a and b

23. Before and while engaging in physical activity, a student with diabetes should:

_____a) monitor blood glucose levels before, during and after the scheduled physical activity

_____b) adjust his/her insulin dose according to the IHP

_____c) have a source of fast-acting glucose to prevent or treat an episode of hypoglycemia

_____d) all of the above

24. Symptoms of hyperglycemia include:

_____a) thirst

_____b) increased urination

_____c) drowsiness

_____d) irritability

_____e) ketones in the urine

_____f) blurred vision

_____g) all of the above

_____h) a, b, and c only

25. Hyperglycemia is determined by:

_____a) the student's appearance

_____b) the student's blood glucose value

26. The treatment of hyperglycemia may include:

_____a) administering insulin

_____b) following the IHP

_____c) a and b

Diabetes and the Law

27. The Texas Health and Safety Code (Chapter 168, Care of Students with Diabetes) requires public schools to:

_____ a) train unlicensed diabetes care assistants to care for students with diabetes in schools

_____ b) allow students that can manage their diabetes during the school day to do so anywhere on campus or at a school-related activity

_____ c) prepare an individual health plan for a student with diabetes whose family requests assistance with diabetes care while at school

_____ d) a and c

_____ e) a, b, and c

28. The Texas Health and Safety Code requires parents to come to school to care for their children who have diabetes.

_____ True ____ False

29. The Texas Health and Safety Code requires that a student with diabetes go to the nurse's office to care for his/her condition.

_____ True ____ False

30. Students with diabetes cannot participate in extracurricular activities.

_____ True ____ False

31. The Texas Health and Safety Code requires that all schools have a school nurse assigned to a campus.

_____ True ____ False

32. Section 504 of the Rehabilitation Act and the Americans with Disabilities Act prohibit discrimination against people with disabilities.

_____ True _____ False

Answers and Discussion Points

Diabetes Basics

1. a.

Diabetes is a chronic endocrine disorder that is either the result of having no insulin production (type 1) or limited insulin production and/or impaired use of insulin (type 2).

2. c

The three main types of diabetes are type 1 (a condition in which the pancreas no longer secretes insulin), type 2 (a condition in which the pancreas does not secrete enough insulin or the body fails to utilize the insulin properly), and gestational diabetes (diagnosed during pregnancy in a woman with no diagnosis prior to the pregnancy).

There are other types of diabetes, but they account for a small percentage of cases.

3. c

The pancreas is a gland that produces insulin for glucose (sugar) absorption. Without insulin, glucose remains in the bloodstream and causes elevated glucose values; glucose values that are not in the normal range can cause damage to major organs and blood vessels.

4. False

It is not possible to look at a person with diabetes and tell that they have the disease. The disease is diagnosed by a blood test.

5. True

A person with type 1 diabetes (formerly called insulin-dependent diabetes) must take insulin, as their pancreas does not produce insulin.

6. c

A person with type 1 diabetes can be any age; while most persons with type 1 diabetes are diagnosed before the age of 19, type 1 diabetes can be diagnosed at any age.

7. True

A person with type 2 diabetes may be diet-controlled, may be taking oral medication, or may be on insulin.

8. d

How often a person with diabetes checks his/her blood glucose (sugar) will vary depending on many factors: age, number of episodes of hypoglycemia, stability of blood glucose values during the day, as well as other considerations. A student with diabetes will have an order from a provider that will let school staff know the frequency with which the student will check his/her blood glucose levels while at school. The number of times and the time frames (e.g., before lunch, after lunch, before physical activity, during physical activity, and after physical activity) should be outlined in the IPA.

9. e

Managing diabetes is accomplished by following a meal plan, knowing which foods elevate blood sugar, taking medications (both oral and injectable) as prescribed, getting physical activity, and seeing a healthcare provider routinely.

10. e

The goal of diabetes management is to have in-range glucose values (usually expressed as a range) during the day; other goals include being healthy overall, and avoiding the co-morbid conditions associated with persistent, out of range blood glucose values. Students with optimal management should participate fully in academic programs and extra-curricular activities.

11. e

Students with diabetes involved in physical activity during the school day benefit from the same advantages as anyone that participates in physical activity, such as weight control and cardiovascular fitness. A student with diabetes that exercises may have a decreased need for, or better utilization of insulin. Further, the most

common problem encountered during physical activity is hypoglycemia.

Diabetes Management

12. True

Students with diabetes are expected to have an IHP so that school staff can know how to best manage the student during the school day.

13. True

If a student's blood sugar is in range prior to a meal, UDCA should administer bolus.

14. i

The IHP should include a list of all medications the student is taking, including a schedule for when the medications are to be administered, and doses of medications; ranges of acceptable glucose values during the day and what to do when the glucose values are not in that range; when and how often the student will have snacks; and the name and phone number of the treating healthcare provider.

15. d

Insulin is available in vials (for which insulin syringes must be used), in pens, and in cartridges (used in pumps and must be pre-loaded).

16. False

A person with diabetes can have foods that contain sugar, such as cookies, some breakfast cereals, and most desserts; a student that consumes sugar-containing foods should know how to count the carbohydrates in those foods and then adjust his/her insulin accordingly.

17. f

A student with diabetes must dispose of his/her sharps (including lancets, syringes, empty pens, insulin vials, insulin cartridges, and pump infusion sets) by following the school or district policy related to safe needle disposal and adhering to universal precautions. Some schools will allow a student to take supplies home and dispose of them, with the caveat that he/she must carry sharps in a safe container (such as a little glass jar with a lid or a plastic container with a lid). Some schools may require that a student dispose of sharps daily by taking sharps to the nurse's office or clinic on campus.

18.h

Mild to moderate hypoglycemia (low blood sugar) will cause a student to be hungry, dizzy, sweat, tremble, unable to concentrate, confused, and/or have a headache. During mild to moderate episodes of hypoglycemia, a student will be able to speak; however, the speech may be slurred.

19.a

While there are physical symptoms of hypoglycemia (trembling, sweating, confusion), the only way to definitively know if a student has mild to moderate hypoglycemia is to check the blood glucose. Students that can recognize hypoglycemia will probably have a snack. If the IHP requires that if this occurs a student must report this to the school nurse or UDCA, then the student shall tell the appropriate school staff so that the episode can be documented.

20. d

Mild to moderate hypoglycemia is treated by eating or having a snack.

21. c

Severe hypoglycemia is usually suspected if a student collapses and/or has a seizure.

22. c

The goal of reversing severe hypoglycemia is to raise the blood sugar immediately; this is accomplished by administering a fast-acting glucose source (if the student can swallow) or by administering glucagon (if the student cannot swallow or is unconscious).

23. d

A student with diabetes that participates in physical activity should monitor his/her blood glucose prior to, during, and after exercising. Should the student have an episode of hypoglycemia, the student should have snacks available for moderate hypoglycemia as well as sources of fast-acting glucose in the event of severe hypoglycemia. Insulin doses prior to exercising would need to be adjusted according to the student's IHP.

24. g

Symptoms of hyperglycemia include being thirsty, urinating more often, being drowsy, being irritable, having ketones in the urine, and having blurred vision.

25. b

Hyperglycemia, just like hypoglycemia, cannot be ascertained by physical symptoms alone; to determine if blood glucose is elevated, the only way to know is to assess the blood glucose value.

26. c

The appropriate way to treat hyperglycemia is to administer insulin; the appropriate dose, depending on the blood glucose value, will appear in the IHP.

Diabetes and the Law

27. e

The Health and Safety Code requires public schools to train UDCAs to assist in caring for students with diabetes in schools, to allow students to self-manage their care anywhere on the campus during the day or at a school-related function, and to prepare an IHP for a student with diabetes so that school nurse(s) and/or UDCAs can follow the plan while caring for a student.

28. False

The Health and Safety Code does not require that parents come to school to care for a student with diabetes. Chapter 168 requires schools to have trained staff available to care for a student with diabetes.

29. False

The Health and Safety Codes does not require that a student go to the nurse's office to care for his/her condition. If the IHP specifies that a student with diabetes go to the nurse's office, and the parents have agreed, then that is permissible. However, a student that self-manages his/her care cannot be required to go to the nurse's office to have a snack, administer insulin, or check blood glucose values.

30. False

Students with diabetes are not limited in any way from participating in extracurricular activities; a student with diabetes may participate in sports, and other functions such as debate team, plays, band, and orchestra.

31. False

The Health and Safety Code does not address the issue of staffing schools with school nurses. The Health and Safety Code addresses the requirements that if a school has a school nurse, one UDCA should be trained, and if a school does not have a school nurse, three UDCA's should be trained.

32. True

Students with disabilities may not be discriminated against.

Appendix E: Sample Format for Skills Check

Name of Individual being tested: _____

Name of Licensed person assessing competency: _____ Date(s): _____

Monitoring

_____ Use blood glucose meter

_____ Check urine for ketones

_____ Record results

_____ Continuous glucose monitoring (CGM)

Insulin delivery devices

_____ Adhere to sterile technique

_____ Use of insulin syringe and pen

_____ Prepare a correct dose

_____ Inject via subcutaneous route

_____ Record time, dose, site

Glucagon administration

_____ Prepare and administer the medication according to the manufacturer's instructions.

_____ Calculate proper dose

_____ Record time, dose, site

Universal Precautions

_____ Dispose of needles/sharps properly

Use of Individual Health Plan (IHP)

- _____ Able to locate IHP
- _____ Able to identify glucose ranges
- _____ Able to identify orders
- _____ Able to identify steps to implement orders

Diabetes Technology

- _____ Able to identify individual pumps
- _____ Able to know what emergency supplies are needed (such as extra batteries and charging cable)
- _____ Know how to detach the infusion set from the body with the tubed pumps
- _____ Able to know how and when to bolus, as needed

Appendix F: Sample Insulin Checkoff Worksheets

This section includes five sample insulin calculation worksheets. These exercises may be used by trainers as a resource for annually testing UDCAs and any time a student's plan of care is updated. These can be used as a resource, but do not represent all potential diabetes management scenarios that may be important to review. It's important for trainers to determine the individual needs of their school when determining what materials to use in their training and should adapt materials as needed.

Insulin Calculation Worksheet #1

It is 7:30 am and a 1st grade student named Sara has come to the clinic to have her blood glucose checked prior to breakfast in the cafeteria. Her blood glucose reading is 236. She returns from breakfast, and you will need to determine how much insulin to inject. Her breakfast consisted of mini golden blueberry pancakes with syrup, a fresh apple of which she ate only half, and low-fat white milk.

Blood glucose goal range is 80 – 150

Insulin to Carb Ratio: 1 unit of insulin/20 gm of carbohydrates

Correction Factor: 1 unit of insulin for every 75mg/dl > **120** (target)

Carbs eaten:
Pancakes – 34 grams
Syrup – 18 grams
½ Apple – 10.5 grams
Milk – 13 grams

Step 1 Insulin to Carb Ratio

Determine how much insulin is needed for the amount of carbs eaten

Carbs eaten at breakfast = 75.5 grams

Divide the total grams of carbs eaten by the insulin to carb ratio

 grams of carbs ÷ (insulin to carb ratio) = units

Step 2 Blood Glucose Correction Factor

Determine how much insulin is needed to lower blood glucose to target level.

 (pre-meal blood glucose) - (target blood glucose) =

÷ (blood glucose correction factor) = units

Step 3 Total dose of insulin

Add the number of units of insulin from step 1 and step 2 together for total dose

 + = total units of insulin to be given for carbs eaten and high blood glucose

Insulin Calculation Worksheet #2

Julie comes into the clinic before lunch to check her blood glucose. Her blood glucose is 253. Her mom has packed her lunch and included a notecard with a carb count of 75 grams. Julie returns to the clinic and has eaten 100% of her lunch. Help her calculate how much insulin to inject.

Blood glucose goal range is 70-150

Insulin to Carb Ratio: 1 unit of insulin/18 gm of carbohydrates

Correction Factor: 1 unit of insulin for every 60mg/dl > **130** (target)

Step 1 Insulin to Carb Ratio

Determine how much insulin is needed for the amount of carbs eaten

Carbs eaten at lunch = 75 grams

Divide the total grams of carbs eaten by the insulin to carb ratio

 grams of carbs ÷ (insulin to carb ratio) = units

Step 2 Blood Glucose Correction Factor

Determine how much insulin is needed to lower blood glucose to target level

 (pre-meal blood glucose) - (target blood glucose) =

÷ (blood glucose correction factor) = units

Step 3 Total dose of insulin

Add the number of units of insulin from step 1 and step 2 together for total dose

 + = total units of insulin to be given for carbs eaten and high blood glucose

Insulin Calculation Worksheet #3

James is in the clinic for his blood glucose check prior to lunch. He routinely buys his lunch in the cafeteria. His blood glucose is 119. When he returns from lunch you will need to determine how much insulin to inject. He reports that he ate one turkey hot dog, potato smiles with 2 packs of ketchup, baby carrots with ranch dressing, and fat free chocolate milk.

Blood glucose goal range is 80-150

Insulin to Carb Ratio: 1 unit of insulin/25 gm of carbohydrates

Correction Factor: 1 unit of insulin for every 70mg/dl > **120** (target)

Carbs eaten:

- Hot dog – 34 grams
- Potato smiles – 20 grams
- Ketchup x2 – 10 grams
- Carrots – 6 grams
- Ranch – 8 grams
- Milk – 19 grams

Step 1 Insulin to Carb Ratio

Determine how much insulin is needed for the amount of carbs eaten.

Carbs eaten at lunch = 97 grams

Divide the total grams of carbs eaten by the insulin to carb ratio
97 grams of carbs ÷ 25 (insulin to carb ratio) = 3.88 units

Step 2 Blood Glucose Correction Factor

Determine how much insulin is needed to lower blood glucose to target level

119 (pre-meal blood glucose) - 120 (target blood glucose) =

÷ 70 (blood glucose correction factor) = 1.7 units

Step 3 Total Dose of Insulin

Add the number of units of insulin from step1 and step 2 together for total dose.

3.88 + 1.7 = 5.58 total units of insulin to be given for carbs eaten and high blood glucose

Insulin Calculation Worksheet #4

Mike is a 3rd grader that is coming to the clinic before lunch to check his blood glucose. He tells you he is feeling hungry and a bit dizzy. His blood glucose reading is 58. What should you do?

- Document the results and send him to the cafeteria for lunch.
- Call his parent/guardian
- Give Mike a 15gm carbohydrate snack and re-check blood glucose in 15 minutes
- Both b and c

Blood glucose goal range is 80-150

Insulin to Carb Ratio: 1 unit of insulin/30 gm carbohydrates

Correction Factor: 1 unit of insulin for every 50mg/dl > **120** (target)

The second blood glucose check shows a reading of 102 and you send him to lunch. He returns to the clinic after lunch and reports he ate a savory meatball sub, one orange, a frozen grape sorbet, and low-fat white milk. You need to determine how much insulin to inject.

Carbs eaten:
Meatball sub – 38 grams
Orange – 15 grams
Sorbet – 19 grams
Milk – 13 grams

Step 1 Insulin to Carb Ratio

Determine how much insulin is needed for the amount of carbs eaten.

Carbs eaten at lunch = 85 grams

Divide the total grams of carbs eaten by the insulin to carb ratio

 grams of carbs ÷ (insulin to carb ratio) = units

Step 2 Blood Glucose Correction Factor

Determine how much insulin is needed to lower blood glucose to target level.

 (pre-meal blood glucose) – (target blood glucose) =

÷ (blood glucose correction factor) = units

Step 3 Total dose of insulin

Add the number of units from step 1 and step 2 together for total dose.

 + = total units of insulin to be given for carbs eaten and high blood glucose

Insulin Calculation Worksheet #5

Brooke comes to the clinic before lunch to have her blood glucose checked. Her blood glucose reading is 282. She is to receive 3 units of insulin prior to lunch and a correction dose if needed.

Blood glucose range is 70-150

Insulin to Carb Ratio: 1 unit of insulin/25 gm of carbohydrates

Correction Factor: 1 unit of insulin for every 75mg/dl > **130** (target)

Step 1 Blood Glucose Correction Factor

Determine how much insulin is needed to lower blood glucose to target level.

_____ (pre-meal blood glucose) - _____ (target blood glucose) =

÷ _____ (blood glucose correction factor) = _____ + **3** units of pre-meal insulin = _____ units. This is the insulin dose to be given prior to lunch.

After lunch- Brooke comes back to the clinic and you will need to add up the carbohydrates she has eaten. She tells you she ate a sun butter and jelly sandwich with crackers, diced pears in light syrup, raisins, and low-fat white milk.

Carbs eaten: Sun butter and jelly sandwich & crackers - 51 grams
Pears - 14 grams
Milk - 13 grams
Raisins - 31 grams

Carbs eaten at lunch = 109 grams

Divide the total grams of carbs eaten by the insulin to carb ratio

_____ grams of carbs ÷ _____ (insulin to carb ratio) = _____ units

NOTE: If you calculate that the student will be getting more than 3 units of insulin, **subtract 3 units** from that number (you are subtracting the 3 units that you administered prior to lunch).