

## Standards of Care for Diabetes Management in the School Setting Utah 2021

NOTE: School nurses should determine their individual scope of practice regarding new diabetes treatment therapies and/or diabetes care practices.

*These are general standards of care for students with Type 1 Diabetes to be used in conjunction with the Utah Diabetes Medication Management Orders (DMMO), Individualized Healthcare Plans (IHP) and Emergency Action Plans (EAP). The student's diabetes health care provider may indicate exceptions to these standards on the student's individual orders. The nurse ultimately is the one to determine if the order is safe and appropriate to follow.*

The Department of Health, along with other stakeholders, has developed State forms. The Diabetes Medication Management Order form is required for any student with diabetes who wants glucagon available at the school, and/or needs accommodations made by the school. The IHP form is one option of a diabetes healthcare plan, as the EAP form is an option for a diabetes emergency action plan. The school nurse may choose to use other forms instead of these, however, some kind of IHP and EAP should be on file for all students with diabetes.

- Individualized Healthcare Plans (IHP) and Emergency Action Plans (EAP): Students with diabetes should have both an IHP and an EAP on file with the school before they attend. These are written by the school nurse and the parent, and will be based on the Diabetes Medication Management Orders (DMMO) signed by a licensed independent provider. Both the IHP and the EAP should be reviewed at least annually, or when the student transfers to another school.
  - a. The IHP is the daily management plan for the student with diabetes. This should include information on checking blood glucose, the instructions for routine insulin administration during school hours, and other student-specific instructions.
  - b. The EAP describes how to care for the student during hyperglycemia or hypoglycemia events.
- Diabetes Medication Management Orders (DMMO): Provider orders should be obtained annually for the start of each school year and ongoing as needed. If ongoing changes to the insulin dosing is outside the current orders on file, the parents should contact the healthcare provider for new orders to reflect these changes. The DMMO should be attached to the IHP so that the most current orders are available to the school nurse or school staff. The diabetes medication management order form is required for any student with diabetes who wants glucagon available at the school, and/or needs accommodations made by the school.
- There are also state developed addendums: a continuous glucose monitoring (CGM) addendum, an insulin pump addendum, and an insulin injection addendum. These

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forms should be completed by parent/guardian for students with those devices, or when the student receives their insulin via an injection.

There are two parts to insulin calculations: one is the **insulin to carbohydrate ratio** which should be given with any food, the other is the **correction dose** that is restricted to meal times.

- The **insulin to carb ratio** should be given for meals. Primary Children’s Hospital has given the instruction that insulin should never be administered closer than 3 hours apart (unless on a pump and the pump recommends it). This would include dosing for snacks. The Utah Nurse Practice Act Rule only allows for delegation of “a scheduled dose of insulin”, which has been defined as meal time doses only can be delegated (R156-31b-701a).
  - a. A plan should be in place for students with diabetes (without a pump) for parties and snacks. This may include having the parent provide a no-carb snack for the student to eat, or saving the snack for the next meal when the appropriate dose of insulin can safely be given. Work with the parent to determine the best course of action for their student
  - b. **Correction doses** are those that can be done if it has been 3 hours since the last dose of fast-acting insulin, or at meal time unless on a pump and the pump recommends it. If the insulin is being injected via a syringe or insulin pen and it is being delegated, correction doses can ONLY be given at meal times (R156-31b-701a).
- Monitoring Blood Glucose (BG): The student’s healthcare provider should indicate individualized BG target ranges on the student’s individual orders (DMMO).
  - a. Standard Target Ranges Before Meals: The student’s target ranges are indicated by the diabetes healthcare provider. If the target range is not indicated, then these general standards should be used:
    - < 6 years old 100-200 mg/dl
    - 6-17 years old 80-150 mg/dl
    - > 17 years old 70-130 mg/dl

Note: The frequency of routine BG monitoring should take into consideration the student’s schedule and participation in classroom learning/activities. *Too frequent routine BG monitoring may impact learning and school participation.* On average, a student would have routine BG monitoring one to three times during a full school day unless otherwise indicated on the DMMO.

- Hypoglycemia (BG under target range):
  - a. The student should be treated in the classroom if symptomatic or if BG is below target range. If the student needs to go to the health office he/she should be

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accompanied by a responsible person, which in most cases would be an adult, unless otherwise indicated on the student's Section 504 plan.

- b. Check blood glucose – if BG meter is not available, treat symptoms.
  - c. If BG is below target range and/or student is symptomatic, treat with 15 gm fast-acting carbohydrate. Retest in 10-15 minutes, repeat 15 gm fast-acting carbohydrate until within target range. When BG is within target range follow with 15 gm complex carb (protein & carbohydrate) snack or lunch/meal (unless otherwise indicated on DMMO). DO NOT give insulin for this snack.
  - d. Mild symptoms: Check BG, treat with 15 gm fast-acting carbohydrates until within target range.
  - e. Moderate symptoms: Check BG, treat with 15 gm fast-acting carbohydrates. Repeat and re-treat until within target range.
  - f. Severe symptoms: These may include seizures, unconsciousness, or being unable or unwilling to eat/drink. Check BG if meter is available and treat accordingly.
    - Call 911 and administer glucagon. Disconnect/suspend pump unless contrary to DMMO. If glucagon is ordered, trained personnel should be available to administer. ALWAYS call 911 if glucagon is administered.
    - ***Do not give insulin for carbohydrates given to treat low blood glucose.*** Students with a pump should not enter the carbohydrate grams into the pump that were given to treat a low BG.
- Hyperglycemia (BG over target range):
    - a. Treatment for hyperglycemia for students with an insulin pump or smart insulin pen:
      - If the student is on a pump or smart insulin pen, correction doses can be given other than at meal times **IF** the BG is tested and entered into the pump, **AND** if the device recommends a correction dose. No adjustments are to be made to this recommended dose by school personnel (Murray, 2014).
      - If BG is greater than target range but less than 350 mg/dl, give correction as indicated by pump calculation, and recheck in two hours. If after two hours BG is still 300 or higher, this may indicate pump or site malfunction. Contact the parent/guardian. They may want to come to check ketone levels and change pump site.
        1. For a failed site or pump the school should have another means of administering insulin available. This would include an insulin pen, or syringe and vial.
      - Potential pump malfunction: The concern for a student on a pump with hyperglycemia is a malfunctioning pump and the risk of quickly going into

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diabetic ketoacidosis (DKA). Instructions on how to handle pump malfunctions should be included in the student's IHP, and will typically include administration of insulin via another route, and contacting the parent/guardian to replace the infusion set. An independent student can also insert a new infusion set.

- b. Treatment for hyperglycemia for students NOT using an insulin pump:
    - Correction doses can only be given at meal times (breakfast and lunch).
    - Correction doses should not be given closer than every three hours since the last dose of fast acting insulin.
    - If the parent/guardian wants to give an additional correction dose, it is their prerogative, but they are required to come to the school and administer the dose personally (Murray, 2014).
    - Allow free and unrestricted access to the restroom, and to water or other non-sugar containing drinks.
  - c. For all students (pump or no pump) the school nurse and parent should contact the healthcare provider for insulin dose adjustments if hyperglycemia occurs frequently.
  - d. If the student BG is 350 mg/dl or higher **and the student is symptomatic** (illness, nausea, vomiting) the student should go home to be monitored by the parent/guardian.
  - e. If the student's BG is 350 mg/dl or high and there are no symptoms (illness, nausea, vomiting) the student may remain in school. Notify parent of BG for them to treat later in the day.
- Pump Management
    - a. The computerized features/calculator of pump should be used for insulin boluses.
    - b. Parent/guardians are responsible for ensuring all pump settings align with provider orders.
    - c. The pump bolus calculator should not be overridden.
  - Diet and Nutrition
    - a. All students should be encouraged to eat healthy foods.
    - b. Student with diabetes are not restricted on food they can have, but must take insulin to cover the carbohydrates eaten.
    - c. Arrangements should be made between teacher and parent on how to handle class parties.
  - Continuous Glucose Monitors (CGM)
    - a. If a CGM alarm sounds indicating a high or low BG level, the school personnel or nurse should check a finger stick BG and then follow the DMMO.

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- b. The CGM alarms should be set so they do not alarm unnecessarily and disrupt the class frequently; but set to warn of possible low BG or high BG levels.
  - c. Parent/Guardian/Independent students are responsible for changing sensor/site. It is not the responsibility of school personnel to change sensor/site or calibrate the CGM.
  - d. Some CGMs are approved for making treatment decision based on the reading, others are not. Ensure your CGM is approved for making treatment decisions. If it is not - always confirm the BG reading with a glucometer. Never enter the sensor reading into a pump.
  - e. Parents should not ask school personnel to review the CGM prior to physical activity and determine by this reading alone if the child can participate.
  - f. Monitoring of the CGM in the school setting is not required by school personnel unless the alarm sounds indicating a possible high or low BG reading.
  - g. If anything needs to be done with the CGM device a parent/guardian must come to the school and manage it.
- Changing infusion sets is not a daily occurrence and should not be done routinely at school. These are typically done every 2-3 days and should be done at home by a parent/guardian. If the student is independent they can change the site at school, or the parent/guardian can come to school to change the infusion set if necessary. A recent search online found over 82 different kind of infusion sets.
- Self-Care Management
  - a. Self-care ability level should be determined by school nurse and the parent/guardian.
  - b. All students, regardless of age or expertise, should have an IHP or EAP, and may need assistance with hypoglycemia and illness.
- Do-It-Yourself (DIY) Artificial Pancreas (AP systems (e.g. looping): The Utah Department of Health does not endorse DIY AP systems due to concerns regarding tampering with a medical device, outside the bounds of rigorous scientific research, potential coding errors, and/or potential malfunctions. HOWEVER, the school nurse and school staff will still be available for reasonable routine care including hypo or hyperglycemia management.
- Multiple interventions per day: In many cases *routine* interventions may be delegated to unlicensed personnel during school (e.g. monitoring for hypo or hyperglycemia, checking BG before meals or when symptomatic, and scheduled mealtime doses of insulin). The Utah Nurse Practice Act Rules only allow delegation of a scheduled dose of insulin (R156-31b-701a [2][d][i]). When parents request multiple routine interventions per day (e.g. dosing for highs in-between meals, checking BG hourly, constant monitoring a CGM) this is (in most cases) beyond “reasonable accommodations” due to

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the frequent disruptions to the child's education and the potential for error (e.g. causing hypoglycemia). However, the school nurse and school staff should still provide reasonable routine care for the student.

### REFERENCES

Colorado Kids with Diabetes Care and Prevention Collaborative, (2016). Standards of care for diabetes management in the school setting & licensed child care facilities.

Murray, M. MD. (2014). Insulin administration at school (Letter to School Nurses).

Murray, M. MD. (2015). Continuous Glucose Monitors (Letter to School Nurses).

National Diabetes Education Program, (2020). Helping the student with diabetes succeed: A guide for school personnel.