Standards of Care for Diabetes Management in the School Setting & Licensed Child Care Facilities – Colorado 2017

These are general standards of care for students with Type 1 Diabetes to be used in conjunction with the Colorado Provider Orders & Individualized Health Plans. The student's diabetes health care provider may indicate exceptions to these standards on the student's individual orders.

Terms used in document:

HIPAA	Health Insurance Portability and Accountability Act was signed into law in 1996. It provides for clarification of orders and coordination of care between the prescribing provider and the health professional carrying out the orders without additional written authorizations by patient. http://www.hhs.gov/hipaa/for-professionals/faq/513/does-hipaa-apply-to-an-elementary-school/index.html
FERPA	Family Educational Rights to Privacy Act of 1974 protects all personally identifiable information of students/children enrolled in institutions that receive federal funding. Requires parent written authorization to share student record information (included in authorization language on standardized care plans.) http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html
School Nurse/Child Care Nurse Consultant	When school nurse is referenced in Standards, will also indicate
>	Greater than the number to the right of the symbol
<	Less than the number to the right of the symbol
~	"Approximately."

1. **Communication:** To facilitate appropriate execution of the Diabetes Health Care Provider's orders and to ensure safety of the student, the School Nurse/Child Care Nurse Consultant will have authorization to exchange health information with the health care provider to assist in developing, updating and carrying out the Individualized Health Care Plans (IHP). The School Nurse/Child Care Nurse Consultant has permission for care coordination per signed diabetes health care provider orders, which aligns with both Health Insurance Portability and Accountability Act (HIPAA) and Family Educational Rights and Privacy Act (FERPA) regulations. The student's health care plan is developed by the school nurse/child care nurse consultant in collaboration with the parent/guardian(s) and health care provider. Communication of blood glucose readings and coordination of care between student, school nurse/child care nurse consultant, health care providers, school staff/teachers and/or parents may include a variety of options, e.g. cell phone applications, web-based applications, email, and texting, which will be noted in the student's Section 504 plan. Shared data plans and/or Wi-Fi will need to be provided by the parents as necessary for cellphone service and/or remote site monitoring.

2. **Diabetes Health Care Provider Orders: Orders should be obtained annually for the start of each school year and ongoing basis as needed or annually/ongoing based on enrollment into the child care facility.** If ongoing changes to the insulin dosing is a total of +/- 3 units per dose outside the current orders on file, then parents should contact the diabetes health care provider for new orders to reflect these changes. Additional school or district specific medication forms are unnecessary unless they contain additional information not specified for this student's diabetes care.

3. **Monitoring Blood Glucose:** *The student's health care provider should indicate individualized blood glucose target ranges on the student's individual orders.*

   Standard Target Ranges Before Meals: The student's target ranges are indicated by the diabetes health care provider. If the target range is not indicated, please refer to ADA recommendations of Pre-meal 90-130mg/dl per Diabetes Care 2017;40(Suppl. 1):S105–S113 | DOI: 10.2337/dc17 S015, http://care.diabetesjournals.org/content/40/Supplement_1/S105

   Notification to Parents*:
   Low < *target range* and **High** > 300 mg/dl (unless otherwise indicated on Provider orders)
   *A student with hypoglycemia should be treated first prior to notifying parents.

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

4. **Hypoglycemia**
   - Student should be treated *immediately (i.e. classroom, playground)* if symptomatic or if blood glucose is below *Target Range.* If the student needs to go to the Health Office – the student should be accompanied by responsible person, as indicated in the student's IHP and/or Section 504 plan (to be determined in collaboration with the parent, student and school nurse/child care nurse consultant).
   - Check blood glucose with a glucometer if student reports feeling low. If no blood glucose meter is available, assume that blood sugar is low and treat accordingly.
   - If blood glucose is **below** *Target Range* and/or student is symptomatic, treat with ~15g fast-acting carbohydrate (if student < 5 y.o. give ~7.5g of fast acting carbohydrate unless otherwise indicated). **Retest** in 10-15 minutes. Repeat 15g (7.5g for <5y.o. as indicated) fast acting carbohydrate until **within** *Target Range*. When blood glucose is **within** *target range*: follow with 15g complex carb (protein & carbohydrate) snack or lunch/meal (unless otherwise indicated on orders). Do not give insulin for this snack unless indicated. (see Note below)
   - **Mild symptoms:** Check blood glucose, treat with juice, glucose tabs, etc. until within *Target Range.* Follow with snack/lunch*. (see Note below)
   - **Moderate symptoms:** Check blood glucose, if unable to drink juice: administer glucose gel. Re-treat until within *Target Range.* Follow with snack or lunch*. (see Note below)
   - **Severe symptoms** which may include seizures, unconsciousness, unable or unwilling to take juice or gel: If BG meter is readily available - Check blood glucose level prior to treating to confirm hypoglycemia and
     - **Call 911 and Administer Glucagon**
       - Glucagon dose is indicated on the Provider orders. Doses of 0.5 ml or 1.0 ml are encouraged for accurate administration in the school setting.
       - Trained personnel should be available for administration of Glucagon.

Note:
For Injections: Do not give insulin for carbohydrates given to <u>treat</u> low blood glucose. The School Nurse/Child Care Nurse Consultant should discuss with the parent whether the student is given an insulin bolus for snacks immediately following hypoglycemia (School nurse/child care nurse consultant to make note on the Individualized Health Plan). *At lunchtime, after blood glucose is within *Target Range*, send the student to lunch & give insulin after eating, based on the *recovered* blood glucose level and grams of carbs unless otherwise indicated on orders.
For Pumps: Don't enter the carbohydrate grams in pump that were given to treat the low blood glucose. The School Nurse/Child Care Nurse Consultant should discuss with the parent whether the student is given an insulin bolus for snacks immediately following hypoglycemia (School nurse/child care nurse consultant to note on the IHP.)*At lunchtime, after blood glucose is within *Target Range*, send the student to lunch. After eating, enter *recovered* blood glucose level and grams of carbs eaten into pump and use the pump calculator to determine amount of insulin to be given unless otherwise indicated on orders.
Notify Parents after student has been treated for hypoglycemia.
*If blood glucose meters are not available, treat symptoms per basic first aid.

5. **Hyperglycemia**

No pump:
   - Provide blood glucose correction as indicated in the orders. Recheck in 2 hours.
   - Check urine/blood ketones if blood glucose is over 300 mg/dl twice in a row (greater than 2 hours apart) or with symptoms of illness/vomiting unless otherwise indicated on orders. If urine ketones are moderate-large or blood ketones <u>≥</u> 1.0, provide water, notify parents and school nurse/child care nurse consultant.- See Exercise and School Attendance Table below re: ketone levels
   - If student's blood glucose level is <u>≥</u>300 mg/dl once and student is **symptomatic** (illness, nausea, vomiting) and the school is unable to test for ketones, then the student must go home to be monitored by parent/guardian.
   - When hyperglycemia occurs other than at lunchtime and it has been greater than **<u>3 hours</u>** since the last dose of insulin, the student may be given insulin via injection using the indicated correction factor on the orders ***if approved by the school nurse/child care nurse consultant and parent is notified.***
   - The school nurse/child care nurse consultant should take into consideration upcoming activities including PE, lunch dosing, walking home, afterschool activities, etc., when giving insulin correction.

If the correction factor is not indicated, such as a sliding scale, contact the Diabetes Health Care Provider for a one-time order.

With Pump:

- Provide blood glucose correction bolus per pump calculator. All blood glucose levels should be entered into the pump for administration of pump-calculated corrections unless otherwise indicated on the orders.
- If blood glucose > *target range* but less than 300mg/dl (pre-meal), give correction as indicated by pump calculation, and recheck in 2 hours. Then after rechecking, if blood glucose is still ≥300, check ketones, contact the school nurse/child care nurse consultant regarding giving insulin by injection *as this may indicate pump/site malfunction* (use pump calculator for dosing) and notify parents of blood glucose level, ketone level & for site change (to be changed by parent/guardian/independent student). Contact the health care provider for one-time order if unable to use the pump calculator for insulin dosing or correction dosing ratio is not provided on orders.
- If blood glucose ≥ 300 mg/dl (pre-meal) once, check ketones. If urine ketones are moderate-large or blood ketones ≥ 1.0, give insulin by injection and notify parent/guardian or independent student of need for set change (can use pump calculator to determine bolus). If ketones are negative, give an insulin bolus via pump and retest in 1-2 hours. Then if the blood glucose continues to be ≥ 300mg/dl, contact the parent to come to school for set change and to give insulin correction (can also be done by the independent student). If unable to reach parent then school nurse/childcare nurse consultant will contact health care provider for one-time orders.
- ***Potential pump malfunction:*** The concern for a student on a pump with hyperglycemia is a malfunctioning pump and the risk of quickly going into Diabetic Ketoacidosis (DKA). Unlicensed Assistive Personnel should contact school nurse/child care nurse consultant for further instructions regarding insulin by injection or new infusion set by parent or independent student.
- If the school is unable to test for ketones, and the student is symptomatic (illness, nausea, vomiting, and/or stomachache) and blood glucose level is ≥300 mg/dl then the student must go home to be monitored by parent/guardian.

Note: For all students (no pump or pump), the school nurse/child care nurse consultant & parent should contact the health care provider for insulin dose adjustments if hyperglycemia occurs frequently.

6. Exercise and School Attendance (for students on insulin injections and/or pump):

Student Symptoms & BG level	**Ketone Level**	**Exercise**	**Stay in School**
≥300mg/dl first time, no symptoms	None	Yes	Yes
≥300mg/dl - 2 consecutive times (over 2 hours apart), no symptoms	None	Yes	Yes
>300mg/dl no symptoms	Trace-Small	Yes*	Yes
≥300mg/dl **with symptoms**	None	No	No
≥300mg/dl, with or without symptoms and urine ketones are moderate-large or blood ketones ≥1.0	Urine: Moderate-Large or Blood ketones ≥ 1.0	No	No
≥ 300, 2 consecutive times, no symptoms	*Unable to check ketones*	No	Yes
≥ 300, with symptoms	*Unable to check ketones*	No	No

*School Nurse/Child Care Nurse Consultant should determine if type of exercise is appropriate, weather conditions (e.g. very hot weather – exercise may not be appropriate), student's hydration status, school's ability to monitor symptoms during exercise, etc.

Note: *always check blood glucose and/or ketones before exercise if the student is not feeling well.*

7. Insulin Management

- Fast-acting insulins are interchangeable (e.g. Humalog, Novolog, Apidra) unless student is allergic to a certain brand or otherwise indicated.

- The parent and/or Unlicensed Assistive Personal (UAP) should contact the school nurse/ child care nurse consultant for changes in insulin dosing.
- In the school setting, fast-acting insulin is generally given approximately 5-15 minutes prior to lunchtime, unless otherwise indicated. Since it is difficult to determine precisely when the student will actually eat their meal at school due to varying factors, fast-acting insulin is not given earlier than 10-15 minutes to avoid an episode of hypoglycemia.
- Refer to student's individualized orders for snack dosing.
- After 28 days, opened vials/cartridges/pens of insulin will begin to lose their potency and be susceptible to bacteria contamination; therefore the insulin should no longer be used in the school setting.
- Please check with parents to see if they would like the used insulin to be returned to them or discarded.
- The two-digit rule (a rule using the first 2 digits of the blood glucose reading to determine how much in advance to give insulin prior to a meal, e.g. if blood glucose is 200 then give insulin 20minutes before eating) for giving insulin prior to meals is not practical in the school setting due to the school being unable to predict precisely the time the meal will be eaten due to a variety of factors including time spent in lunch line, student socializing with friends and not eating immediately, etc.

8. Pump Management

- The computerized features/calculator of pump should be used for insulin boluses.
- **All** blood glucose values and carbohydrate grams (with the exception of treatment for hypoglycemia) must be entered into the pump for delivery of pump-recommended boluses.
- Parents/guardians are responsible for ensuring all pump settings align with orders.
- The pump bolus calculator rarely should be overridden (e.g. in dosing changes). Encourage parents to follow-up with their health care provider for insulin pump dose adjustments if frequent overrides are being requested.
- Delegated staff should always get approval from their school nurse to override pump insulin calculations.

9. Continuous Glucose Monitors (CGM)

- CGM systems use a tiny sensor inserted under the skin to monitor glucose levels (ongoing or short term) in interstitial fluid. The CGM is calibrated to the student using a finger stick glucose reading when readings are stable, approximately two- three times/day, typically outside of school. Parents/independent students are responsible for changing sensor/site. Calibration may need to occur in school if prompted by CGM and should ideally occur when the blood glucose levels are stable (not rising or falling rapidly) such as after a meal.
- In the school setting, delegated school staff should respond to low and high BG alarms rather than the constantly fluctuating trends and numbers.
- The FDA has approved non-adjunctive use of the Dexcom G5 CGM **(only the G5),** meaning that with proper twice daily finger-stick calibration, the CGM can be used directly to make treatment decisions without needing to test finger-stick blood glucose (BG) values. Please refer to the *Collaborative Guidelines for Dexcom G5 Non-Adjunctive Dosing in the School Setting January 2017, www.coloradokidswithdiabetes.org*.
- For all other CGMs, per the FDA always confirm a CGM reading (pediatric patients) with a finger stick glucose reading. Always check finger stick blood glucose level regardless of CGM reading. (Do not enter sensor reading into pump for insulin calculation).
- Remote monitoring of the CGM in the school setting is generally not required as the student is usually adult-supervised by trained school staff and frequent routine BG monitoring is scheduled as indicated. It is not the responsibility of school personnel to monitor the CGM readings. However, in certain unique cases (e.g. preschool age, non-verbal, impaired cognition, severe hypoglycemia unawareness) monitoring/remote monitoring may be appropriate and the school nurse/child care nurse consultant along with the Section 504 Team, will determine this need based on the student's individual unique need(s). When determined appropriate, the school nurse/child care nurse consultant will indicate these accommodations on a Section 504 plan and the Individualized Health Plan.
- Reasonable use of the CGM in the school setting will foster the student's ability to recognize when they have symptoms of hypo/hyperglycemia versus relying on the CGM, avoiding overuse of alarms leading to alarm fatigue, and enhance learning by avoiding disruption to their learning in the classroom.
- Parents will set the alarms and notify the school nurse/child care nurse consultant of the parameters. Alarms should be used sparingly and for safety to avoid unnecessary disruption of the student's school activities. Recommend: set alarms for blood glucose levels that require an immediate action/response.

10. **Advancing Pump Technologies in the school setting:** ***These are recently FDA approved***
    - **Medtronic MiniMed 530/630 G Pump with:** Threshold Suspend/Suspend on Low *is a feature on Medtronic pump and CGM systems which automatically suspends* insulin delivery if the sensor detects low or impending low glucose. When triggered the pump sounds a siren alarm and requires the user to choose between leaving the basal insulin off or restarting it. If no choice is made, the pump continues to alarm and remains off for up to 2 hours or until the user chooses to resume insulin delivery. During this automatic suspension time, no bolus insulin can be given. For more information: Contact the Colorado Diabetes Resource Nurse for your area, Medtronic pump representative and/or www.coloradokidswithdiabetes.org
    - **Medtronic MiniMed 670G pump with Smartguard HCL Technology: Has four levels of operation: including 1) basal/bolus insulin delivery, 2) Suspend on Low, 3) Suspend Before Low** mode which automatically stops insulin 30 minutes before reaching the student's pre-selected low limits, then automatically restarts (without alerts) insulin when levels recover and 4) **Auto Mode** which is a considered a hybrid closed loop system. It automatically adjusts basal insulin delivery every 5 minutes based on blood sugar levels to keep student in target range round the clock. For more information: Contact the Colorado Diabetes Resource Nurse for your area, Medtronic pump representative and/or www.coloradokidswithdiabetes.org.
    - See *Standards* Pump Definitions Addendum.

11. **Self-Care Management:**
    - Ability level to be determined by school nurse/child care nurse consultant & parent unless Provider indicates otherwise.
    - All students regardless of age or expertise require a plan (e.g. Emergency Action plan, and/or hypo/hyperglycemia flow sheet) and may need assistance with hypoglycemia and illness

12. **Student with private duty nurses:** The *Standards of Care* may be individualized or exempt at the discretion of the parents and/or health care provider and per any agreement with the school district.

NOTE: School and Child Care nurses should determine their individual scope of practice regarding new diabetes treatment therapies and/or diabetes care practices. https://www.colorado.gov/pacific/dora/Nursing_laws.

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