Standards of Care for Diabetes Management in the School Setting & Licensed Child Care Facilities – Colorado 2018

These are general standards of care for students with Type 1 Diabetes which are integrated and to be used with Colorado Provider Orders (a.k.a Diabetes Medical Management Plan (DMMP)) & Individualized Health Plans (IHP). The student’s diabetes health care provider may individualize and indicate exceptions to these standards on the student’s individual orders/DMMP.

Terms used in document:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>School Nurse/Child care health consultant</td>
<td>When school nurse is referenced in Standards, will also indicate</td>
</tr>
<tr>
<td>&gt;</td>
<td>Greater than the number to the right of the symbol</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less than the number to the right of the symbol</td>
</tr>
<tr>
<td>~</td>
<td>“Approximately.”</td>
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</table>

Introduction: Under federal and state laws, schools and child care facilities which receive federal funding and other facilities such as many private schools, child care facilities, and camp and recreation programs are prohibited from discriminating against students with diabetes. Schools/Child care facilities have an obligation under federal and state laws to provide care so that students with diabetes can safely and fully access the setting (including before and after-hours school-sponsored events). The school nurse/child care health consultant leads the “team” to ensure that appropriate and timely care is provided to students enabling the school/child care facility to meet its obligations under federal and state laws.

1. Communication: To facilitate appropriate execution of the Diabetes Health Care Provider’s orders/DMMP and to ensure safety of the student, the School Nurse/Child Care Health 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). Authorization for this coordination of care is per parent signed diabetes health care provider orders/DMMP and IHP, which aligns with both Health Insurance Portability and Accountability Act (HIPAA) and Family Educational Rights and Privacy Act (FERPA) regulations.
   a. The student’s IHP developed by the school nurse/child care health consultant must be consistent with the DMMP and developed in collaboration with the parent/guardian(s) and health care provider prior to the start of school/entering childcare when possible.
   b. Section 504 Plan: Section 504 of the Rehabilitation Act of 1973: Prohibits discrimination in any program or activity (academic, nonacademic, extracurricular) that receives federal funding. Applies to all public schools and to private schools including religious schools that receive federal money. The identification for Section 504 services must be based upon evaluations and conducted by a team of individuals knowledgeable about the student, including the parents, school nurse, administration, teachers, etc. It should be consistent with and incorporate the provider orders/DMMP for reference (please communicate with providers if discrepancies occur).
   c. Communication of blood glucose readings and coordination of care between student, school nurse/child care health 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. School districts are encouraged to provide guest internet access if available.

2. Diabetes Health Care Provider Orders/DMMP: The orders/DMMP should be obtained annually for the start of each school year and ongoing basis as needed or annually/ongoing based on enrollment into the childcare facility for coordination of care. 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/DMMP 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/DMMP.

   **Standard Target Ranges Before Meals:** The student’s target ranges are indicated by the diabetes health care provider on the orders/DMMP. 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/DMMP)

   *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 day participation. On average, a student would have routine glucose monitoring one to three times during the school day unless otherwise indicated on orders/DMMP.

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 (responsible person to be determined in collaboration with the parent, student and school nurse/child care health consultant).

   • The amount of carbohydrates used in treatment of mild-moderate hypoglycemia (with or without pump) is based on student’s sensitivity to carbohydrates and may be individualized by the parents/guardians and/or specified in the provider’s orders/DMMP.

   • 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: consider following with a 15g complex carb (protein & carbohydrate) or protein snack or lunch/meal per parent and/or provider. 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

      o **Administer Glucagon and Call 911**

         • Glucagon dose is indicated on the Provider orders/DMMP. 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.

   • **Notify Parents after student has been treated for hypoglycemia to avoid delaying treatment. However, in the case of mild hypoglycemia, the parent may indicate they want to be contacted prior to treatment and this should be indicated on the student’s IHP.**

Note:

• Do not give insulin for carbohydrates (do not enter in pump) given to treat low blood glucose. The School Nurse/Child care health consultant should discuss with the parent whether the student is given an insulin bolus for snacks immediately following hypoglycemia (School nurse/child care health 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/DMMP. For Pumps: 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/DMMP.

- **For Pumps with Suspend Before Low or Predictive Low Glucose Suspend**: Students who have been suspended may only need to be treated with 5-10gms of quick sugar (since they have been without insulin for the suspended time period.

- **For all students (no pump or pump)**, the school nurse/child care health consultant should encourage the parent to contact the health care provider for insulin dose adjustments if hypoglycemia occurs frequently (when there are 3-4 days there are 2 or more blood glucose readings below target range at the same time of day).

5. **Hyperglycemia**

   **No pump:**
   - Provide blood glucose correction as indicated in the orders/DMMP. Consult with parent if possible and recheck in approximately 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/DMMP. If urine ketones are moderate-large or blood ketones ≥1.0, provide water, consult if available/notify parents and school nurse/child care health consultant. (*Child should be treated outside of school and parent should contact provider for assistance*). See Exercise and School Attendance Table below re: ketone levels
   - If student’s blood glucose level is ≥300 mg/dl once and student is symptomatic (illness, nausea, vomiting) and the school is unable to test for ketones, then the student must be treated/monitored by parent/guardian. If the parent/guardian is unable to be reached, then the school nurse/child care health consultant should monitor and call the health care provider for assistance. If student has moderate – large ketones or blood ketones ≥ 1.0 and the student has labored breathing, change in mental status and/or may be dehydrated – call 911.
   - When hyperglycemia occurs other than at lunchtime and it has been greater than 3 hours since the last dose of insulin, the student may be given insulin via injection using the indicated correction factor on the orders/DMMP if approved by the school nurse/child care health consultant and parent is consulted if available/notify parents.
   - The school nurse/child care health 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/DMMP.
   - 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 health 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/DMMP.
   - 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) and child should be treated outside of school (parent/guardian should contact provider for assistance). If the parent/guardian is unable to be reached, then the school nurse/child care health consultant should monitor and call the health care provider for assistance.
     - **If student has moderate – large ketones or blood ketones ≥ 1.0 and the student has labored breathing, change in mental status and/or may be dehydrated – call 911.**
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 who may want to come and do set change and give the correction dose (correction dose/set change may also be done by the independent student). If unable to reach the parent/guardian or the parent is not able to come and do set change/correction dose, then the school nurse should contact the health care provider for a one-time order and administer correction dose via injection or have delegated staff administer the correction dose by injection (while in direct communication with school nurse).

- **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 health 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) then the student should be treated/monitored outside of school per school’s illness policy (particularly if blood glucose level is ≥300 mg/dl)
  - If student has moderate – large ketones or blood ketones ≥ 1.0 and the student has labored breathing, change in mental status or may be dehydrated – call 911. If the parent/guardian is unable to be reached, then the school nurse/child care health consultant should monitor and call the health care provider for assistance.

- **Note:** For all students (no pump or pump), the school nurse/child care health should encourage the parent to contact the health care provider for insulin dose adjustments if hyperglycemia occurs frequently (when there are 5-6 days there are 3 or more blood glucose readings above target range at same time of day).

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

<table>
<thead>
<tr>
<th>IF Student Symptoms &amp; BG level are…</th>
<th>and Ketone Level is … then</th>
<th>Exercise</th>
<th>Stay in School</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥300mg/dl first time, no symptoms</td>
<td>Not required</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>≥300mg/dl - 2 consecutive times (over 2 hours apart), no symptoms</td>
<td>Negative to small</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>≥300mg/dl no symptoms but has ketones</td>
<td>Trace-Small</td>
<td>Yes**</td>
<td>Yes</td>
</tr>
<tr>
<td>≥300mg/dl with symptoms*</td>
<td>Negative or greater</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>≥300mg/dl, with or without symptoms and urine ketones are moderate-large or blood ketones ≥1.0</td>
<td>Urine: Moderate-Large or Blood ketones ≥1.0</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>≥300, 2 consecutive times, no symptoms</td>
<td>Unable to check ketones</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>≥300, with symptoms</td>
<td>Unable to check ketones</td>
<td>No</td>
<td>No</td>
</tr>
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</table>

*Moderate to severe symptoms include stomachache, nausea, vomiting, labored breathing, slurred speech, change in mental status, dehydration.

**School Nurse/Child care health 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 on provider orders/DMMP
- The parent and/or Unlicensed Assistive Personal (UAP) should notify the school nurse/child care health consultant for changes in insulin dosing so the IHP can be updated per orders/DMMP and any further delegation can occur.
- In the school setting, fast-acting insulin is generally given approximately 5-15 minutes prior to lunchtime, unless otherwise indicated on provider orders/DMMP. 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.
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/DMMP.
- 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.
- Due to the infrequency of changing sites and the school staff/school nurse/child care health consultant’s ability to maintain expertise in insertion of pump/CGM sets, insulin will be given by injection if pump site fails and the BG meter will be used if the CGM fails. In the event of site malfunctions, the school staff should contact the school nurse/child care health consultant for further instructions regarding insulin by injection or new infusion set/CGM site by parent or independent student and the school nurse/child care health consultant will coordinate with parents/guardians.

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** (requires calibration 2x/day) CGM & **G6** CGM (does not need calibration) which means that 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 2018, [www.coloradokidswithdiabetes.org](http://www.coloradokidswithdiabetes.org).
- The **benefits of a CGM** in the school/child care setting includes real-time, dynamic glucose information, which enhances the safety of the student and their diabetes control. The school nurse/child care health consultant should support the use of CGMS and establish parameters so that there is little disruption to the student’s school activities, thereby, enhancing their education. The use of the CGM in the school setting includes using alarms sparingly and setting alarms for blood glucose levels that require an immediate action/response. This will help the student avoid alarm fatigue, and enhance learning by avoiding unnecessary disruption to their learning in the classroom. Alarms should be set for low BG and high BG when treatment/action is needed (for example: sensor glucose is <80 or >250).
- Remote monitoring of the CGM in the school/childcare setting by school/childcare staff is generally not required as the student is usually adult-supervised by trained staff and alarms are used to identify urgent blood glucose levels requiring action. 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 health consultant along with the Section 504 Team, will do an assessment and
determine the accommodations based on the student’s individual need(s) and the DMMP. When determined appropriate, the school nurse/child care health consultant will indicate these accommodations on a Section 504 plan and the Individualized Health Plan.

- Parents will set the alarms and notify the school nurse/child care health 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. Emerging Pump Technologies in the school setting: (listed below are recently FDA approved)

- Collaboration with parents, students, health care providers and school nurses to individualize use and treatment with this new technology is important. (For example: allowing or assisting the student in checking blood glucose levels to enter back into auto mode with the Medtronic 670G pump)

- **Medtronic MiniMed 530/630G 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 restarting (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. Most exits from auto mode will be corrected by entering a blood glucose level as prompted. All students should be allowed and/or assisted in check blood glucose for re-entry into auto mode. For more information: Contact the Colorado Diabetes Resource Nurse for your area, Medtronic pump representative and/or www.coloradokidswithdiabetes.org.

- **Tandem’s Basal-IQ predictive low glucose suspend (PLGS) system** using Dexcom G6 CGM readings and the t:slim X2 pump, the PLGS algorithm stops basal insulin delivery when low blood sugar is predicted within 30 minutes and resumes insulin delivery once blood sugar levels start to rise. May require less carbohydrates when treating hypoglycemia (collaborate with parent and/or as indicated in the health care provider orders.

11. Self-Care Management:

- Ability level to be determined by the parent and provider and specified on the provider orders/DMMP (which may direct parent and school nurse to set ability level) and then applied to the school setting as specified in the IHP. 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.

- **Mental Health Considerations:** For students that have been have been in Day treatment, hospitalized, or have active mental health concern (e.g. suicide watch) should have a transition plan in place prior to returning to school. The providers, social workers, parents, school staff and school nurse should collaborate to develop the transition plan (e.g. determine safe use of pump, BG monitoring, insulin administrative oversight by school staff).

- **Non-adherence to diabetes care:** For students not adhering to treatment (not checking BG, not taking insulin, not checking ketones), the school nurse, parent and providers should communicate concerns and collaborate on problem solving interventions as possible.

- **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](https://www.colorado.gov/pacific/dora/Nursing_laws)

**REFERENCES:**

ACKNOWLEDGEMENT OF AUTHORS:

Editor: Leah Wyckoff, MS, BSN, RN, NCSN Barbara Davis Center, University of Colorado
G. Todd Alonso, MD Assistant Professor, Barbara Davis Center, University of Colorado
Cari Berget, RN, BSN, CDE Clinical Research Nurse/Artificial Pancreas Research Team Manager, Barbara Davis Center, University of Colorado
Sarah Blumenthal, MSN, RN Assistant Director Health and Wellness Unit, Colorado Department of Education
Pam Brunner Nii BSN, RN, NCSN, AE-C Quality Improvement and Research Fellow, School Health Program, Children’s Hospital Colorado
Theresa Cox, MS, RN, CDE Head Nurse, Barbara Davis Center, University of Colorado
Kelly Driver, BSN, RN,NCSN Diabetes Resource Nurse, Douglas County Schools
Christine Fallabel, MPH Director, State Government Affairs & Advocacy, American Diabetes Association
Emily Fay Mountain Region Director, Camps American Diabetes Association
Greg Forlenza, MD Assistant Professor, Barbara Davis Center, University of Colorado
Andrea L. Houk, RN, CDE, Living with TID, President of Diabetes Care Services, LLC
Cheryl Lebsock Parent of T1D student
Sunil Nayak, MD Pediatric Endocrine Associates, Clinical Associate Professor of Pediatrics, University of Colorado School of Medicine
Susie Owen, RN, CDE Diabetes Nurse Educator, Barbara Davis Center, University of Colorado
Kathleen Patrick, MA, BSN, RN, NCSN, FNASN Diabetes Resource Nurse, Retired - Assistant Director Health and Wellness Unit, Colorado Department of Education
Theresa Rapstine MS, RN Coordinator, Healthy Child Care Colorado, Child Care Health Consultant, Children’s Hospital Colorado
Kathy L Reiner, MPH, BSN, RN School Nurse Consultant/Health Services Leadership Team Aurora Public Schools, NASN Director, Colorado
Bridget Russum Parent of T1D student

David Samson, MBA Area Executive Director, Colorado, Montana, Utah, Wyoming, American Diabetes Association

Mako E. Sather, MSN, CPNP Rocky Mountain Pediatric Endocrinology

Robert H. Slover, MD Professor of Pediatrics, University of Colorado Anschutz Medical Campus, Director of Pediatrics, The Barbara Davis Center for Diabetes, Wagner Family Chair in Childhood Diabetes

David Swaschnig, CPNP-PC, CDE Nurse Practitioner, Barbara Davis Center, University of Colorado

Crystal C. Woodward Director, Safe at School, American Diabetes Association

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