



Kids deserve the best.

Children's Wisconsin

Diabetes Medical Management Protocols for Schools

School will be Responsible to Obtain Parent Contact Information

Healthcare Provider Contact Information:

Children's Wisconsin Diabetes Clinic – Main Campus

Non-urgent contact phone number: 414-266-3380
 Urgent management issues: 414-266-2860 and the Nurse/Doctor on call will be paged.
 Fax Number: 414-266-3964
 Website: www.childrenswi.org, navigate to the Diabetes Specialty Page
 Email: diabetesclinic@chw.org

Children's Wisconsin Diabetes Clinic – Fox Valley/De Pere

Non-urgent contact phone number: 920-969-7970
 Urgent management issues: 414-266-2860 and the Nurse/Doctor on call will be paged.
 Fax Number: 414-337-7203
 Website: www.childrenswi.org, navigate to the Diabetes Specialty Page
 Email: FVdiabetesclinic@chw.org

CHW Healthcare Providers:

Our care team is comprised of Pediatric Endocrinologists, Nurse Practitioners, Diabetes Educators, Dietitians, Social Worker, and Psychologists. Contact the parents or the diabetes clinic to identify the direct care providers for this particular student.

Notify parents/guardians or additional contacts in the following situations:



An emergency action plan should be discussed and completed at the beginning of every school year with the family

1. Loss of consciousness, seizure, or if glucagon is given
2. If blood sugars remain 350 mg/dL or higher for 4 hours or longer
3. Moderate to large ketones
4. Nausea/vomiting, altered breathing or altered level of consciousness
5. Correction dose of insulin is given other than a meal or snack time

6. If the student is unconscious, having difficulty breathing and/or lethargy call the Diabetes Clinic Emergency phone line 414-266-2860 or call 911 for Emergency Assistance.
7. Any other situations identified in the student specific medical order

Treating Low Blood Sugar/Hypoglycemia

Symptoms of Hypoglycemia

Mild to... 	Moderate to... 	Severe Symptoms
Hungry	Mood/behavior change	Confused/unable to follow commands
Shaky/weak/clammy	Inattentive/spacey	Unable to swallow
Blurred vision/glassy eyes	Slurred speech	Unable to awaken (Unconscious)
Dizzy/headache	Anxious/irritable	Seizure
Sweaty/flushed/hot	Numbness or tingling around lips	Convulsion
Tired/drowsy	Poor coordination	
Fast heartbeat	Unable to concentrate	
Pale skin	Personality change	
May have no symptoms		

Treatment of Low Blood Sugar – Basic Protocol

- Treat blood sugar if under 70 mg/dL unless otherwise notified on student’s medical orders. This can be individualized per student and health care provider to provide safe care in the school based on sensitivity and age of the student. Please follow the student specific medical order or our standard protocol below.
- If using a CGM, if the sensor reads “LO” without a glucose number, check blood sugar on a meter.
- Give 10 to 15 grams of fast-acting carbohydrates:
Examples include:

3-4 oz of juice or sugar soda	3 -4 glucose tablets
Smarties (2 rolls)	Skittles (11-15)
- Recheck blood sugar in 15 minutes
- If blood sugar is still under 80 mg/dL, give another 15 grams of fast-acting carbohydrate.
- When using a CGM
 - If an upward or stable trend is not seen, use a meter to check blood sugar prior to repeating the treatment.
 - Students using a continuous glucose monitor may need to use a finger stick on a meter to confirm a low blood sugar prior to treatment, especially if symptoms don’t match the CGM reading.

Treatment of a Severe Low Blood Sugar with Glucagon:

- Administer Glucagon if student is confused/unable to follow commands, unable to swallow, unable to awaken (unconscious), or having a seizure or convulsion.
- After administering glucagon call 911 and keep the student on the side as both injected and nasal glucagon may cause vomiting.
- There are three forms of Glucagon:
 - **BASQSIMI:** Glucagon Nasal Spray for children 4 years and above
 - **GVOKE:** Premixed sub-cutaneous injection for children 2 years and above
 - **Injectable glucagon:** IM injection of glucagon for all age groups that requires reconstituting with saline (provided in the prescription kit).
- If student uses an insulin pump and exhibits symptoms of severe low blood sugar, in addition to giving glucagon either suspend the insulin pump or disconnect the tubing.

Guidelines for Glucagon Nasal Spray:

Refer to this link for instructions: <http://pi.lilly.com/us/baqsimi-us-ifu.pdf>

- It is dispensed as a fixed dose of 3 mg. It is prepackaged for single use and will need to be discarded after use.

Guidelines for GVOKE:

Refer to this link for instructions: <https://www.gvokeglucagon.com/how-to-use-gvoke>

- 0.5 mg for patients under 45 kg or 100 lbs
- 1.0 mg for patients over 45 kg or 100 lbs
- Injection can be given into any of the sites used for insulin administration

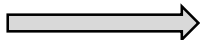
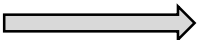
Guidelines for Intramuscular Injectible Glucagon:

Refer to this link for instructions: <https://www.glucagenhypokit.com/instructions.html>

- 0.5 mg under 25 kg or 55 lbs (Under 6 years if weight is unknown)
- 1.0 mg over 25 kg or 55 lbs (Over 6 years if weight is unknown)
- Injection can be given into the muscle in the thigh or the arm.

Treating High Blood Sugar/Hyperglycemia

Symptoms of Hyperglycemia

Mild to... 	Moderate to... 	Severe Symptoms
Frequent urination/bedwetting	Mild symptoms, and:	Mild and Moderate symptoms, and:
Extreme Thirst/ dry mouth	Nausea/vomiting	Labored breathing
Negative to Small Urine ketones	Stomach pain/cramps	Weakness
Tiredness/fatigue	Dry/itchy skin	Confusion
Increased hunger	Unusual weight loss	Unconsciousness
Blurred Vision	Small, Moderate or Large urine ketones	Large urine ketones
Flushed Skin		Sweet, fruity breath
Lack of concentration		

Treatment of High Blood Sugar:

- Per the medical orders, provide correction dose/supplemental dose of insulin when applicable. See Insulin and insulin pump orders.
- If using an insulin pump check the pump set site, connection and the insulin reservoir
- With an insulin pump: if the blood sugar remains out of range at the next check, then the correction insulin dose must be given with syringe or pen.
- If blood sugar is high as defined by the medical order and if the student is sick, check urine ketones if applicable.
- If blood sugar is high without urine ketones, then recheck in 2 hours unless otherwise specified in the medical order.
- If blood sugar reads "HI" use 450 mg/dl for correction calculation and recheck in two hours.
- When using a CGM
 - If sensor glucose is over 450 and rapidly rising, a blood glucose should be confirmed with a check on a meter before treatment.
- If blood sugar is high with urine ketones, follow the directions below.

Trace/small urine ketones	Moderate to large urine ketones
Allow free bathroom access	Follow all items for trace, small ketones, and
Encourage water and/or other sugar-free fluids	Call parents/guardians
Re-check blood sugar in 2 hours	Arrange for student to be taken home if student is ill and unable to function in the school environment. May need to consult with parent or health care provider.

Follow all additional medical orders for this specific student for treatment of high blood sugars.	Follow all additional medical orders for this specific student for treatment of high blood sugars.
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Sick Day

If a student comes to school sick or becomes sick at school do the following:

• Check blood sugar level	• Offer sugar-free fluids	• Arrange for student to be excused from school
• Check urine ketones	• Call parents & guardians	

Blood/Sensor Glucose Monitoring

The parent and student need to show you the blood sugar meter and CGM (if using) and how it functions prior to school starting. It is important for all school nurses to know how to access the memory in the meter, procedure for testing, and if calibration is needed. All students with diabetes will need a meter at school for testing blood sugars. This applies to both students with Type 1 and Type 2 diabetes. Each student will have a schedule for monitoring blood sugars at school. Follow the outlined procedure in the medical order for each student. Whenever possible, sugar monitoring should occur in the classroom to limit any time missed for this student.

Possible times that students may test/monitor include the following times:

- Reasonable number of blood sugar checks is typically 2 to 4 times in a school day. If student is testing other than at meal time it is recommended that the student be allowed to test in the classroom
- Before eating all meals
- Before eating snacks that require a student to give insulin
- Before and after physical activity depending when gym is scheduled and how sensitive the student is to exercise
- Before boarding a bus for transportation home from school or dismissal if walking home from school
- Anytime the student feels symptoms of a low or high blood sugar level
- When the student is sick

Continuous Glucose monitors (CGM)

- Most common continuous glucose monitors include:
 - Dexcom sensors (www.dexcom.com)
 - Medtronic sensors (www.minimed.com)
 - Freestyle Libre sensors (www.freestylelibre.us)
- Continuous Glucose Monitors consist of 3 parts:
 - A sensor that is inserted under the skin and remains in place for 6 to 14 days.
 - A transmitter that is attached to the sensor that records and transmits glucose data continuously.
 - A receiver/reader provides visual display of the student's real time glucose data. With Dexcom or Libre Flash, the student's cell phone may be the receiver.
- A student may have either the manufacturer provided receiver/reader, a smart device or data displayed directly on the screen on some insulin pumps. Some of the supported devices include both android and apple compatible products. If they do not have a data plan the student may need access to the school's Wi-Fi network. The student and parents will inform you on which this student uses. Some sensors must be calibrated at least 2 times per day to remain accurate. See the reference chart to determine if a sensor needs calibration.
- CGM alerts are set for both high and low blood sugars on the Libre 2, Dexcom and Medtronic sensors. Students can turn off the alerts in various circumstances. Please identify the specific alerts that the student has set and how it will be used in the school setting. It is recommended that the minimum number of alarms be enabled in a school to keep the student safe and be engaged in the academic schedule.
- Data sharing may occur at school with designated school personnel and outlined in the student's IHP. It would be recommended that the school nurse clarify the following with the student and family:
 - Access to the CGM receiver
 - Access to the wireless network
 - Data sharing with school staff: While this is a possibility, our program recommends the primary role for the school personnel is responding to the high and low sensor alarms. In some circumstances the use of directional arrows can be outlined to assist with treatment around higher activity levels. Constant monitoring of the CGM data on a remote device in a school setting is not considered a reasonable accommodation for most students with a CGM device.
 - Data sharing with parents or off-site caregivers
- Students wearing a CGM: We recommend checking the sensor glucose and/or a blood sugar in the following situations:
 - Any high or low blood sugar alert
 - Any symptoms of a high or low blood sugar.

- Before giving insulin to lower a blood sugar. The Dexcom G5 (when calibrated), Dexcom G6 and Freestyle Libre CGM are FDA approved to use the sensor glucose to dose insulin. If the blood sugar is moving quickly indicated by 2 arrows up or down a blood glucose is recommended prior to dosing insulin. You will need to negotiate the specific student routine with the parent.
- Anytime the CGM is not functional, the student will require a blood sugar test.
- Students may have scheduled times to check the CGM within a school day. Most commonly this is before meals, snacks and physical activity such as gym or recess. Negotiate student's specific management with student and the parent.
- Students may be using the sensor reading to dose at school, so they may not be testing blood sugars as often. Since a student may need to do a blood sugar test in some situations we recommend all students have a blood sugar meter accessible to them at school for using when necessary for management decisions.
- If you are requested by a parent to integrate directional arrows into a treatment plan, consider the following recommendations:
 - May be used around gym or recess to determine if a snack, blood sugar test or insulin for a snack is needed.
 - May be used at the end of a school day to determine management when boarding a bus
 - A student could use a CGM to determine range or management around taking a test or exam
 - These specific guidelines will need to be negotiated by the school nurse and the student/parents.

Here is a reference chart to interpret directional arrows on Home CGM Device



- **Treatment for Low Blood Sugars at Non-Meal Times Using a CGM with Downward Arrow(s)**
 - An impending low blood sugar treatment may be indicated for the student before they are below their target range when a CGM reading indicates arrow(s) is in the downward direction.
 - Discuss with families regarding sensor sugar ranges and carbohydrate treatment amounts in the event that this occurs at school.

- **Refer to the “Continuous Glucose Monitor Resources” section of the “CHW Diabetes Resources for Schools” webpage for additional resources and guidelines for managing insulin doses with students using CGMs.**
 - Families must indicate that they want these guidelines used in school in order to apply the recommendations to the individual student’s insulin dosing.
 - Reasonable accommodations must be considered when managing CGM data in school. In general, this means no greater than two corrections outside of a meal-time per school day.
 - CGMs provide a wealth of data. The focus should be on helping the student balance academic success and classroom inclusion with optimal glucose management.

HOME CONTINUOUS GLUCOSE MONITORING DEVICES

CGM DEVICE	RANGE FOR THE SENSOR	WARM UP TIME	CALIBRATION REQUIREMENTS	SENSOR DURATION	DOSING INSULIN WITH SENSOR GLUCOSE	TREATING LOW SENSOR GLUCOSE AT SCHOOL
DEXCOM G6	The sensor must be within 20 feet of the receiver (Approved android product or Apple Product running the Dexcom APP)	It is ready after 2 hours of inserting the sensor.	No calibration required	10 Days	<p>This device is FDA approved to use for insulin dosing with a few exceptions.</p> <p>School recommendation:</p> <ul style="list-style-type: none"> • Sensor Glucose can be used for dosing at scheduled times for dosing. This included scheduled snacks, breakfast and Lunch meals. • High alerts may occur after eating so you may not dose insulin to correct all high alerts. Insulin doses need to be at least 2 hours apart to maintain student safety. • If you have 2 arrows up, then it is recommended to test the blood sugar prior to dosing. 	<p>School Recommendations:</p> <ul style="list-style-type: none"> • Sensor glucose can be used for treatment after the 2-hour warm up. • When in doubt get the meter out and test a blood sugar. • If student’s symptoms do not match the sensor reading, test the blood sugar. • If you have no arrow, no number, signal loss – use the meter for a blood sugar. • If sensor is not functional, use the meter. • If symptoms are more advanced check a blood sugar. • If you have 2 arrows up, it is recommended to test the blood sugar prior to dosing. • Refer to CGM guidelines on Children’s Hospital Diabetes webpage for school resources
FREESTYLE LIBRE FLASH	The handheld reader or phone with app must be within 1.5 inches of the sensor to scan it.	1 to 12 hours depending on the model.	No calibration required	10-14 days	<p>This device is FDA approved to use for insulin dosing with a few exceptions.</p> <p>School recommendation:</p> <ul style="list-style-type: none"> • Sensor Glucose can be used for dosing at scheduled times for dosing. This included scheduled snacks, breakfast and Lunch meals. • High alerts may occur after eating so you may not dose insulin to correct all high alerts. Insulin doses need to be at least 2 hours apart to maintain student safety. • If you have 2 arrows up, then it is recommended to test the blood sugar prior to dosing. 	<p>School Recommendations:</p> <ul style="list-style-type: none"> • Sensor glucose can be used for treatment. • When in doubt get the meter out and test a blood sugar. • If student’s symptoms do not match the sensor reading, test the blood sugar. • If you have no arrow, no number, signal loss – use the meter for a blood sugar. • If sensor is not functional, use the meter. • If symptoms are more advanced check a blood sugar. • If you have 2 arrows up, then it is recommended to test the blood sugar prior to dosing.

CGM DEVICE	RANGE FOR THE SENSOR	WARM UP TIME	CALIBRATION REQUIREMENTS	SENSOR DURATION	DOSING INSULIN WITH SENSOR GLUCOSE	TREATING LOW SENSOR GLUCOSE AT SCHOOL
						<ul style="list-style-type: none"> Refer to CGM guidelines on Children’s Hospital Diabetes webpage for school resources
FREESTYLE LIBRE 2	The handheld reader must be within 1.5 inches of the sensor to scan it.	1 Hour	No calibration required	14 days	<p>This device is FDA approved to use for insulin dosing with a few exceptions.</p> <p>School recommendation:</p> <ul style="list-style-type: none"> Sensor Glucose can be used for dosing at scheduled times for dosing. This included scheduled snacks, breakfast and Lunch meals. High alerts may occur after eating so you may not dose insulin to correct all high alerts. Insulin doses need to be at least 2 hours apart to maintain student safety. <p>If you have 2 arrows up, then it is recommended to test the blood sugar prior to dosing.</p>	<p>School Recommendations:</p> <p>This model allows student to set high and low alarms with the reader.</p> <ul style="list-style-type: none"> Sensor glucose can be used for treatment When in doubt get the meter out and test a blood sugar. If student’s symptoms do not match the sensor reading, test the blood sugar. If you have no arrow, no number, signal loss – use the meter for a blood sugar. If sensor is not functional, use the meter. If symptoms are more advanced check a blood sugar. If you have 2 arrows up, then it is recommended to test the blood sugar prior to dosing. Refer to CGM guidelines on Children’s Hospital Diabetes webpage for school resources
ENLITE Medtronic (Used with the 530G & 630G Medtronic pumps)	The sensor and the transmitter must be within 6 feet of the pump.	2 hours after insertion of the sensor	Calibrate every 12 hours. Blood glucose must be within 40 to 400 mg/dL to calibrate	6 days	This device is not FDA approved for dosing insulin from the sensor glucose.	Needs a blood glucose prior to treatment of a low sensor level.
GUARDIAN 3 Medtronic (Used with the 670G Hybrid Closed Loop Insulin Pump)	The sensor and the transmitter must be within 6 feet of the pump.	2 hours after insertion of the sensor	Calibrate every 12 hours. Blood glucose must be within 40 to 400 mg/dL to calibrate	7 days	This device is not FDA approved for dosing insulin from the sensor glucose.	Needs a blood glucose prior to treatment of a low sensor level.

Insulin Pumps at School

An insulin pump is a device that is attached to the student and delivers continuous subcutaneous insulin. All pumps have a type of pump set or permanent device that is attached to the child. These are rotated to different locations on the body every 2 to 3 days. The pump delivers 2 types of insulin doses:

- **Basal rate:** These are preprogrammed hourly rates that will run automatically, creating a background low level of insulin administered 24 hours per day.
- **Bolus dose and correction doses:** the settings for the calculations are pre-set for programming the food bolus dose and correction dose into the pump. The trained school personnel or student will need to enter into the pump how many grams of carbohydrate are being eaten, what the blood sugar is (some pumps have a linking meter that sends the blood sugar to the pump automatically), and then will need to confirm and deliver the dose of insulin prior to eating all food.

Most common types of insulin pumps and resource phone numbers are:




- Medtronic insulin pumps (www.minimed.com)
- Omnipod insulin pumps (www.myomnipod.com)
- Tandem insulin pumps (www.tandemdiabetes.com)

Students in elementary school need close supervision with all the insulin delivery with a pump. Students in middle school may be able to be independent in dosing the insulin with a pump but will need some supervision. Many high school students can be independent, but they may need supervision depending on the level of diabetes control and timing of diagnosis. Students may be able to know how to do parts of the button pushing on a pump. This but needs to be documented by the school.

- Skills that the school will need to document for the student include:
 - Independently monitors own blood sugar
 - Independently counts carbohydrates
 - Administers insulin using the pump independently
 - Needs assistance with pump management
 - Inserts a new infusion set
 - Self-treats mild hypoglycemia
 - Trouble shoots all pump alarms
- All students at school need to have a backup delivery system in the event of an insulin pump failure. This can be either insulin syringes or insulin pen device.
- Insulin Pump Malfunction:
 - When a pump fails to work, then the student is at higher risk to go into life threatening Diabetic Ketoacidosis. The pump set will need to be changed and/or insulin will need to be given using an alternate method – either with an insulin syringe or pen device. Once a pump fails to function the student will not have any insulin in the body after 2 to 3 hours from the point of failure.

- The family is responsible for providing the school with current pump settings, glucometer and insulin supplies for injections in the event of pump failure.
- Pump set supplies may be kept at school if the student is independent in changing the pump set and they are not showing any significant signs of illness. Most students are not capable of doing this skill independently until over 12 years of age. Parents need to be notified for all pump set failures at school. Younger students will need to have a parent or trained caretaker come to the school and either pick up the student if not able to remain at school or change the set. School nurses or staff are not required to change pump sets unless fully trained and feel competent. If a set is not replaced, it is safe to give insulin injections through the remainder of the school day.
- A high blood sugar of concern when using a pump is typically when it is over 250 mg/dL. If a student corrects with the pump outside of a meal once and the blood sugar does not improve to under 200 mg/dL in 2 hours then it is likely the pump or pump set is not appropriately working. The rule with pump management is correct once and if not improving then correct with a syringe or insulin pen. Refer to the student specific orders for individual management orders.

INSULIN PUMPS

COMPANY/ PRODUCT	SIZE AND WEIGHT	BATTERY	RESERVOIR	INFUSION SET	BASAL RANGE	BOLUS RANGE	DETAILS
INSULET CORP. Omnipod 	POD: 1.53 x 2.05 x 0.57 in. 0.88 oz. with empty reservoir PERSONAL DIABETES MANAGER (PDM): 2.4 x 4.4 x 0.98 in. 4.4 oz. with batteries	POD: Battery Integrated PDM: 2 AAA	200-unit reservoir built into pod	Does not use tubing. Pod comes with a built-in cannula that inserts with a button press on the PDM.	From 0.05 to 30 units per hour in 0.05-unit increments	From 0.05 to 30 units. Increments of 0.05, 0.1, 0.5, or 1 unit. Insulin-to-carb ratio in whole units only.	Does not use tubing. The system includes a pod that is worn for up to 72 hours and a remote personal diabetes manager (PDM) that controls the pod's functions and has a built-in blood glucose meter. Pod must be within 5 feet of the PDM to deliver bolus doses. The pod delivers basal insulin regardless of how close it is to the PDM. The PDM contains more than 1,000 common foods (with nutrition information) and stores up to 36 preset carb values. Pod is waterproof for up to 25 feet deep for 60 minutes, so there's no need to disconnect while swimming or bathing. The PDM is not waterproof. Works with Glooko, Tidepool, and Diasend data-management systems. Approved for use by adults and children.
INSULET CORP. Omnipod Dash 	POD: 1.53 x 2.05 x 0.57 in. 1.06 oz. with empty reservoir PERSONAL DIABETES MANAGER (PDM): 2.48 x 5.1 x 0.39 in. 6.2 oz. with battery	POD: Battery Integrated PDM: Rechargeable lithium ion battery	200-unit reservoir built into pod	Does not use tubing. Pod comes with a built-in cannula that inserts with a button press on the PDM.	From 0 to 30 units per hour in 0.05-unit increments	From 0.05 to 30 units. Increments of 0.05, 0.1, 0.5, or 1 unit. Insulin-to-carb ratio in whole units only.	Does not use tubing. The system includes a pod that is worn for up to 72 hours and a personal diabetes manager (PDM) with color touch screen that controls the pod's functions. The PDM connects to the Contour Next One blood glucose meter so users can see blood glucose readings in the PDM's bolus calculator. Omnipod Display app allows users to view PDM data on their smartphones, and the View app shares data with up to 12 friends or family members. Pod must be within 5 feet of the PDM to deliver bolus doses. The pod delivers basal insulin regardless of how close it is to the PDM. The PDM features CalorieKing, with 80,000 foods and drinks (English only), and stores up to 50 preset carb values. Pod is waterproof for up to 25 feet deep for 60 minutes, so there's no need to disconnect while swimming or bathing. The PDM is not waterproof. Works with Glooko, Tidepool, and Diasend data-management systems. Approved for use by adults and children 2 and over.
MEDTRONIC DIABETES MiniMed 630G System 	2.1 x 3.78 x 0.96 in. 3.7 oz. without battery and with empty reservoir	1AA	300-unit reservoir	Compatible with Medtronic Infusion sets only	From 0.025 to 35 units per hour in 0.025-unit increments for up to 0.975 units. Increments of 0.05 units for between 1 and 9.95 units. Increments of 0.1 units for 10 units or more.	From 0.025 to 25 units. Increments of 0.025 units. Insulin-to-carb ratio allows for fractions of grams.	The MiniMed 630G combo pump-CGM uses SmartGuard technology to stop insulin delivery for up to 2 hours if the glucose level reaches a preset low limit and the user doesn't react to a low-glucose alarm. (For more on its CGM functions, flip to p. 72.) Pump is waterproof for 12 feet deep for up to 24 hours, has remote bolus functionality via the Contour Next Link 2.4 meter, and features a full-color screen. Works with CareLink Personal software (compatible with Windows and Mac operating systems) to upload and manage pump and CGM data. Pump only and pump with Guardian Sensor 3 are approved for use by adults and children 14 and over. Pump with Enlite sensor is approved for adults and children 16 and over.

REFERENCE:

Diabetes Forecast, March/April 2019

<p>MEDTRONIC DIABETES MiniMed 670G System</p> 	<p>2.1 x 3.78 x 0.96 in. 3.7 oz. without battery and with empty reservoir</p>	<p>1 AA</p>	<p>300-unit reservoir</p>	<p>Compatible with Medtronic Infusion sets only</p>	<p>From 0.025 to 35 units per hour in 0.025-unit increments for up to 0.975 units. Increments of 0.05 units for between 1 and 9.95 units. Increments of 0.1 units for 10 units or more.</p>	<p>From 0.025 to 25 units. Increments of 0.025, 0.05, and 0.1 units. Insulin-to-carb ratio allows for fractions of grams.</p>	<p>The MiniMed 670G, a hybrid closed-loop pump, uses SmartGuard technology to allow users to choose from increasing levels of automation that best fit their diabetes management needs. (For more on its CGM functions, flip to p. 72.) The Auto Mode feature automatically adjusts basal insulin delivery based on the user's CGM sensor glucose readings and recent insulin delivery, though it still requires users to, among other things, enter carb grams and confirm mealtime and correction bolus recommendations. Pump uses SmartGuard technology to stop insulin delivery for up to 2 hours if the glucose level reaches a preset low limit and the user doesn't react to a low-glucose alarm. Pump is waterproof for 12 feet deep for up to 24 hours and features a full-color screen. Works with the Contour Next Link 2.4 meter to transfer blood glucose readings and bolus remotely. Works with CareLink Personal software (compatible with Windows and Mac operating systems) to upload and manage pump and CGM data. Approved for use by adults and children 7 and over with type 1 diabetes.</p>
<p>TANDEM DIABETES CARE T:slim X2 Pump</p> 	<p>3.13 x 2 x 0.6 in. 3.95 oz. with battery and full reservoir</p>	<p>Rechargeable lithium polymer battery</p>	<p>300-unit cartridge</p>	<p>Compatible with Tandem Infusion sets only</p>	<p>From 0.1 to 15 units per hour in 0.001-unit increments</p>	<p>From 0.05 to 25 units in 0.01-unit increments with an option for up to an additional 25 units. Insulin-to-carb ratio allows for fractions of grams.</p>	<p>The T:slim X2 works as a combo pump-CGM, without the need for finger sticks, when used with an integrated Dexcom G6 CGM. (For more on its CGM functions, flip to p. 72.) Basal-IQ technology predicts glucose levels and stops insulin delivery if glucose is expected to drop below 80 mg/dl. Insulin delivery resumes once glucose begins to rise. The pump has a color touch screen. In-warranty pumps can be updated remotely via computer, without requiring purchase of a new device. Pump is watertight for 3 feet deep for up to 30 minutes. The device can upload pump and CGM data to Tandem's web-based T:connect Diabetes Management Application; also compatible with Tidepool, Diasend, and Glooko data-management systems. Approved for use by adults and children 6 and over.</p>

REFERENCE:

Diabetes Forecast, March/April 2019

Diabetes supplies that may be kept at school

- Parents/guardians are responsible for supplying the school with all diabetes supplies.
- If a student forgets to bring supplies to the school then:
 - Notify the parent
 - If parent is not available call the Diabetes clinic urgent phone line to page a nurse for consultation.
 - Insulin being actively used may be stored at room temperature for 28 days before replacing. Unused insulin must be stored in the refrigerator but never frozen.

Blood Sugar Monitor, blood sugar test strips, extra batteries	Insulin pen, pen needles and insulin cartridges
Continuous glucose monitor	Fast-acting source of glucose
Lancet device, lancets, gloves	Carbohydrate containing snacks
Insulin vials and syringes	Glucagon emergency kit
Insulin pump supplies	Urine/blood ketone testing supplies

Disaster Planning

It will be the school's responsibility to determine a plan for all types of disasters that may occur in the school, including a lockdown situation. We recommend the plan be set up specific for each school district's policies and procedures. A parent can supply an extra box, or you may find more efficient to have a master disaster box for the entire school to address these needs of a student. Some things to consider in a school emergency are the following points:

- For a lockdown, a fast-acting glucose source should always be available to student. A policy to consider if you have students with diabetes in your school building is to provide fast acting glucose source to all classrooms, and office locations. An example would be to have smarties available in each room which a student with diabetes may be held in the event of a lockdown.
- For evacuation fast acting glucose, insulin source, administration supplies, glucose meter with testing supplies, alcohol pads to clean a meter between use, individual safety lancets, a glucagon kit and paper & pen for documentation. This may be set up in an emergency toolbox for the school and may contain other supplies such as asthma inhalers, Epi pens etc.
- Please review the disaster plan with all parents as they can provide the school with some supplies and will be comforted to know the school is considering all situations for their child to maintain safety.

Meals & Snacks at School

- Students may need assistance in counting carbohydrates depending on level of independence. All students will need carbohydrate resources to determine the correct carb contents for food offered in a schools setting.
- All students with Type 1 diabetes are typically allowed to eat a flexible amount of carbohydrate at meals and some snacks.
- Students with Type 2 diabetes are often on a fixed meal plan to control portions of food eaten.
- Some students may also have restrictions due to other medical diagnosis, intolerances or allergies.
- Establish a meal and snack schedule based on the student's classmates and parent/guardian's direction. If clarification is needed, then consult with the CHW diabetes health care team. A typical plan will consist of a Breakfast, AM Snack, Lunch, and PM snack. An additional snack may be required for extra exercise. In children over the age of 12 years the snacks are less common.
- Refer to the student's specific orders for details related to the meal plan and specific restrictions. Not all students will have restrictions.

Insulin Dosing in between meals or snacks:

- Students may need an extra dose of insulin at a non-meal/snack time. Insulin doses should be at least 2 or more hours apart to maintain the student's safety.
- If a student needs a correction dose for a high blood/sensor sugar and it is less than 2 hours before a regularly scheduled meal dose then the student may give the correction and then at the upcoming meal test and dose for the carb eaten only, and not repeat the correction.
 - For example, if the student tests at 11 AM and blood/sensor sugar is 385 mg/dL, the student can give a correction dose, but then lunch is scheduled at 1145 AM. So at 1145 the student can inject the insulin only for his food coverage without an additional correction. The student then can check 2 hours after lunch and if still having a high blood/sensor sugar, can give an additional dose if needed. You will need to refer to the student's medical orders if extra dosing is allowed at school. Refer to CGM guidelines on Children's Hospital Diabetes webpage

Physical Activity & Sports

- Always have fast-acting carbohydrates available at times of physical activity and sports.
- Students should not participate in physical activity if urine or blood ketones are moderate to large.
- In general, if blood sugar is under 70 mg/dL the student should not engage in physical activity until the blood sugar is corrected.
- Refer to the student specific orders for any special guidelines for participation in physical activity or sports.

Supervision of Students at School

All students have varied levels of independence with their diabetes management. This is based on knowledge of own self-care, developmental maturity with decision making and responsibility, length of time managing diabetes, and level of diabetes control. The level of supervision must be agreed upon by the parent, student, and school staff in agreement with the school district policies & procedures.

Supervision Guidelines by Grade Level

- **Kindergarten- 6th grade:** students need guidance and supervision to be successful with diabetes self-care skills
- **7th grade and 8th grade:** students require a minimum of one lunch-time check in with trained staff
- **9th-12th grade:** students can generally care for diabetes independently during the school day
 - Supervision in high school **is** recommended at the beginning of 9th grade, at the time of diagnosis and for students who are poorly controlled.

See reference for guidance for safe and appropriate ages to master self-care skills for diabetes.

Reference: “Age Related Guidelines for Diabetes: What to look for in children with diabetes”, Children’s of Alabama, www.childrensal.org.

All School Sponsored Activities

- Notify parent/guardians 1 to 2 weeks in advance of all specialized activities/field trips or parties so accommodations can be arranged for the student with diabetes.
- The following diabetes supplies should be available to the student during school sponsored activities and events:

A copy of the student’s Diabetes Management Plan (DMMP), Section 504 Plan, and Emergency Action Plan.	Insulin injection/insulin pump supplies and appropriate storage of insulin to prevent spoilage. Insulin should never be frozen or overheated. It can be at room temperature.
Blood sugar monitor and strips	
CGM sensor and reader when applicable	Glucagon Emergency Kit
Fast acting carbohydrate sources, Juice, glucose gel or glucose tablets	Cell Phone or access to communication device if needed.
Bag lunch and/or snacks	

Simplified Emergency Instructions for All Staff Members

- All staff members should (at minimum):
 - Have access to the Emergency Action Plan
 - Know symptoms and protocol for treating a low blood sugar

- Know where glucagon is stored
- Have awareness of alarms and who to contact in the event that it sounds

Insulin Dosing Rounding Rule

ROUNDING RULE FOR ½ UNITS:

0.1-0.3 round down to whole unit

0.4-0.7 round to the ½ unit

0.8-0.9 round up to whole unit

ROUNDING RULE FOR WHOLE UNITS:

0.1-0.4 round down to whole unit

0.5-0.9 round up to whole unit

Insulin dose Calculation Resources:

Children’s Hospital of Wisconsin will be discontinuing the use of dosing charts except in specific special circumstances. We will be encouraging students and schools to utilize approved Insulin Dose calculator APPs as noted below. These function like a calculator that is inside an insulin pump and can recommend the correct dose to give at a meal, snack or correction for a high blood sugar.

- My Care Connect dosing calculator – Student will need to have an account created to utilize the information (www.mycareconnect.com). This account allows the student to both calculate and document cares at home and school. It is coordinated with an APP called “Blue Loop”. This APP also has the ability to integrate the directional arrows on a CGM to adjust insulin dosing, if requested by the parent. These adjustments use the Pediatric Endocrine Society Guidelines to make the adjustments.



- Discuss with the family if the calculations are done with a formula or using an identified APP.

These are protocols that we use with all children with diabetes managed with insulin injections, insulin pump and/or oral medication at school. Refer to the specific medical orders for this student for individual details regarding the students care and management in the school setting.

CHW Diabetes Treatment Team