

Caring for Children with Diabetes in a Community Program

Unified Referral and Intake System (URIS)
5th Edition (revised)
2024

Diabetes

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This document was created with health care professionals in endocrinology and community health. The Unified Referral and Intake System (URIS) wishes to acknowledge the contribution of the following individuals.

Dr. Seth Marks, MD MSc FRCPC

Diabetes Education Resource for Children & Adolescents (DER-CA)
Children's Hospital Health Sciences Centre Winnipeg

Claudia Mandock, RN CDE Diabetes Nurse Educator

Diabetes Education Resource for Children & Adolescents (DER-CA)
Children's Hospital Health Sciences Centre Winnipeg

Lindsay Sawatsky, RD CDE Diabetes Dietitian Educator

Diabetes Education Resource for Children & Adolescents (DER-CA)
Children's Hospital Health Sciences Centre Winnipeg

Sandra Dalke, RN BN URIS Provincial Coordinator

Winnipeg Regional Health Authority

INTRODUCTION

The Unified Referral and Intake System (URIS) is a joint initiative of the provincial departments of Health, Families, and Education and Early Childhood Learning. URIS supports community programs in caring for children with specific health care needs. Community programs that are eligible for URIS support include schools, licensed child care facilities, and publicly funded agencies providing respite service.

URIS provides a standard means of classifying health care needs based on their complexity and determining the degree of professional qualification required by people who support children with special health care needs. Health care needs classified as Group B can be delegated to non-health care personnel by a registered nurse.

For children with Group B health care needs, the nurse provides support to community programs including:

- a written health care plan for children with URIS Group B health care needs;
- training for community program personnel responsible for the child; and
- monitoring of community program personnel who receive training.

A child with diabetes is eligible for URIS Group B support when they require insulin administration, including type 1 diabetes, type 2 diabetes, and other rare types of diabetes.

This document includes standards of care for children with diabetes in community program settings.

CLINICAL INFORMATION

Diabetes

Diabetes is a disease resulting from a lack of insulin action. Insulin is a hormone produced in the pancreas that the body needs to convert food into energy.

The body converts food (carbohydrates) into glucose that cells need for energy. Glucose is absorbed by the stomach and intestine and released into the bloodstream. When blood glucose increases, insulin is released by the pancreas and acts as a key to allow glucose into the body's cells. When glucose cannot enter cells, it accumulates in the bloodstream, resulting in high glucose.

Types of diabetes

Type 1 diabetes occurs when the pancreas is unable to produce insulin. A person with type 1 diabetes requires daily administration of insulin. Children and adolescents are most commonly diagnosed with type 1 diabetes. Approximately 10% of people with diabetes have type 1 diabetes.

Type 2 diabetes develops when the pancreas does not produce enough insulin, or the body does not use it effectively. A person with type 2 diabetes may need insulin or oral antihyperglycemics (e.g., Metformin). This medication enhances insulin sensitivity in the liver and tissues and lowers glucose manufactured by the liver so insulin can be produced and used more effectively. Type 2 is the most common form of diabetes and usually develops in adulthood, although increasing numbers of children in high-risk populations are diagnosed with type 2 diabetes.

Managing diabetes in the community program setting

Maintaining a proper balance of food, physical activity, and insulin is essential in managing diabetes. Food increases the amount of glucose in the blood, while insulin decreases it. Physical activity often decreases blood glucose but can also increase it with certain activities and in some individuals.

Food

Food (carbohydrate) intake is balanced with the amount of insulin administered. Some children eat a fixed amount of carbohydrates, while others vary their carbohydrate intake. Eating the same amount of carbohydrates at the same time each day is important in managing diabetes. Eating too many or too few carbohydrates or eating at the wrong time can affect blood glucose. Hyperglycemia can occur as a result of eating unplanned food.

Most children with diabetes can eat at typical break times (e.g., recess, lunchtime). They can also eat food with sugar such as candy. Children with diabetes should not share, trade, or throw out food provided by their parents. Young children may need supervision to ensure they eat planned meals and snacks.

The parent is responsible for providing food and counting carbohydrates.

Recommendations

- The community program informs the parent if the child is not eating their food or accepting food from others.
- The community program informs the parent, in advance, of non-routine activities that include food (e.g., Halloween party).

Physical activity

Physical activity can help the body reduce blood glucose. Therefore, planning for physical activity is important to prevent hypoglycemia (low blood glucose).

Hypoglycemia can occur as a result of non-routine physical activity. A carbohydrate snack is recommended before the child participates in physical activity for more than 30 minutes to prevent hypoglycemia.



Additional information on preventative carbohydrate snacks is included in the Preventing hypoglycemia section on page 14.

The parent is responsible for providing food and counting carbohydrates.

Recommendations

- Preventative carbohydrate snacks are included in the child's health care plan at the parent's discretion.
- The community program informs the parent, in advance, of non-routine activities that include physical activity (e.g., track and field).
- A supply of fast-acting sugars must be available on excursions outside the facility.

Insulin

A person with type 1 diabetes requires insulin injections daily. With type 2 diabetes, they may require insulin to control their blood glucose. Other rare types of diabetes, such as Cystic Fibrosis Related Diabetes (CFRD) or rare types of genetic diabetes may also require insulin injections.

Insulin is injected beneath the skin into the subcutaneous tissue and absorbed by the body. There are three methods to administer insulin.

- A small syringe and fine needle that injects insulin drawn up from a vial.
- An insulin pen contains a cartridge of insulin and a short needle to inject insulin. It resembles a slightly oversized pen.
- An insulin pump or pod delivers insulin continuously.

Most insulin injections are administered at home. Diabetes Education Resource for Children and Adolescents (DER-CA) collaborates with families to facilitate insulin administration at home.

The child and parent are responsible for administering insulin at the community program regardless of the method used.

Recommendations

Community program personnel may assist the child who uses an insulin pen, pump, or pod with reminders to administer insulin or to confirm the child enters the correct number values. This is considered on a case-by-case basis, and the community program must agree to it.

Physical illness

Children with diabetes are no more susceptible to physical illness than other children. However, illness can affect their blood glucose. Vomiting and an inability to retain food and fluids can lead to hypoglycemia.

Responding to physical illness

1. Contact the parent.
 2. Check the glucose using the child's monitor, if it is available.
 3. Implement the response to hypoglycemia if the glucose is less than 4mmol/L or the child shows signs of hypoglycemia.
 4. Call 911 if the child is vomiting and the parents or emergency contact cannot be reached.
-

The child does not remain at the community program when they are physically ill or unable to retain food and fluids. The priority is to contact the parent to arrange for the child to be picked up. They are supervised until the parent or designate picks them up. They are not sent home without an adult or ride the bus.

Recommendations

Ketone testing is performed when the child is physically ill or unable to retain food or fluids and their glucose is 14 mmol/L or higher. It is included in the child's health care plan at the parent's discretion.

Routine practice

Routine practice is followed as outlined in [*Routine Practices: Guide to Creating a Healthy Environment and Preventing Infections within Child Care Facilities and Schools*](#) with insulin administration by parent or child, blood glucose monitoring, administration of Baqsimi, and blood and urine ketone testing.

Glucose monitoring

A person with diabetes monitors their glucose multiple times a day. Glucose monitoring occurs before meals and bedtime to determine the amount of insulin to administer.

Glucose monitoring may be performed before the child participates in physical activity or is unsupervised to determine if a preventative carbohydrate snack is needed.



Additional information on preventative carbohydrate snacks is included in the Preventing hypoglycemia section on page 14.

For children, the optimal pre-meal range for blood glucose is 4-8 mmol/L. The target range could be 6.0-10.0 mmol/L for children and adolescents who have experienced severe hypoglycemia recently or are unaware when they are hypoglycemic. The measure of average blood glucose over several months (A1C) indicates how well a person's diabetes is managed. Most children strive for an A1C of less than 7.5%.

Recommendations

- Routine glucose monitoring is performed before meals if the child uses a blood glucose monitor only. Premeal glucose monitoring is unnecessary when the child uses an interstitial glucose monitor as they record glucose levels continuously.
- Routine glucose monitoring is performed before the child participates in physical activity or is unsupervised for more than 30 minutes.
- Routine monitoring is not necessary in situations other than those mentioned above (e.g., before snack, before 15-minute recess).
- Routine glucose monitoring is included in the child's health care plan at the parent's discretion.
- If a premeal glucose reading is less than 4 mmol/L, the child is given a fast-acting sugar in addition to the planned meal.
- The parent may instruct their child to adjust planned food. However, community program personnel do not make decisions to alter the amount or type of food the child eats based on premeal glucose readings.

Blood glucose monitor

With a blood glucose monitor, the finger is pricked with a lancet (needle) to draw a drop of blood which is applied to a glucose test strip. The monitor analyzes the blood and provides a glucose reading. Most older children and adolescents perform blood glucose monitoring independently. Younger children and children with special needs may need supervision or assistance.

How to perform a blood glucose test

1. Perform hand hygiene* and put on gloves.
 2. Have the child wash their hands or use an alcohol wipe to clean their finger.
 3. Insert a test strip into the test port on the monitor. Most monitors will turn on automatically when the test strip is inserted.
 4. Insert a new lancet (needle) into the lancing device and remove the protective cap by twisting and pulling it straight off.
 5. Adjust the puncture depth on the lancing device.**
 6. Hold the lancing device firmly against the side of the child's finger and press the release button to eject the lancet and puncture the skin.
 7. Squeeze the fingertip around the puncture site to bring a round drop of blood to the skin surface. You may need to "milk" the finger (squeeze the finger and stroke toward the puncture site). to get an adequate drop of blood. The monitor will not provide a reading if the amount of blood is not sufficient.
 8. Touch the end of the test strip to the drop of blood, allowing it to be absorbed.
 9. Discard the used lancet and test strip into a sharps container. Follow appropriate procedures if there is environmental contamination with blood.
 10. Discard any waste, remove gloves, and perform hand hygiene.*
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Recommendations

- Lancets are used once.
- Test area strips are not touched or allowed to touch surfaces.
- Expired or discolored test strips are not used.
- The bottle containing test strips is closed tightly to protect them from humidity.
- Test strips are stored in a cool, dry place. They are not stored in the refrigerator.

* Wash your hands with soap and water or clean them with an alcohol-based hand rub. If they are visibly contaminated, use soap and water.

** The puncture depth setting is determined by the parent and included in the child's health care plan.

Interstitial glucose monitors

An interstitial glucose monitor (IGM) measures glucose in the interstitial fluid underneath the skin. The use of an IGM can reduce the number of finger pokes. However, it should not be the sole method for monitoring glucose and making treatment decisions. The use of IGM for children is increasing, and they often begin using an IGM soon after being diagnosed with diabetes.

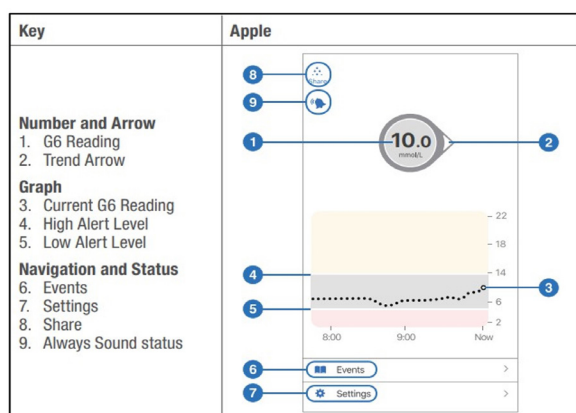
A filament (wire) is inserted into the interstitial fluid and connected to a sensor above the skin surface. A transmitter attached to the sensor sends glucose readings to a receiving device that displays glucose readings, the direction and speed at which the glucose is changing (trend arrows), and glucose over a period of time (graph). IGM readings are most useful when glucose changes quickly to indicate if an action is needed to prevent hypoglycemia or hyperglycemia. They also have alarms that indicate when the glucose is trending high or low.

Interstitial glucose readings are delayed by 5-10 minutes, whereas blood glucose readings are instantaneous. As a result, the glucose reading on an IGM may not show low glucose even when the blood glucose is low. Alternately, it may show a low glucose reading even when the blood glucose has increased.

Two types of interstitial glucose monitors

- Continuous glucose monitors (e.g., DexCom) transmit glucose readings continuously to a stand-alone receiver or smart device.
- Intermittent or flash glucose monitors (e.g., FreeStyle Libre) use a stand-alone receiver or smart device to scan the sensor and obtain a glucose reading. They record glucose readings continuously as long as the sensor is scanned at least every 8 hours.

DexCom



Trend Arrows	Where Your Glucose Is Going	
	Steady	Changing up to: • 0.06 mmol/L each minute • 1.8 mmol/L in 30 minutes
	Slowly rising or falling	Changing: • Between 0.06–0.1 mmol/L each minute • Up to 3.4 mmol/L in 30 minutes
	Rising or falling	Changing: • Between 0.1–0.17 mmol/L each minute • Up to 5 mmol/L in 30 minutes
	Rapidly rising or falling	Changing more than: • 0.17 mmol/L each minute • 5 mmol/L in 30 minutes
	No arrow	Cannot determine trend

Background colors indicate if the glucose reading is low, high, or within the child's target range.



Red = Low



Yellow = High

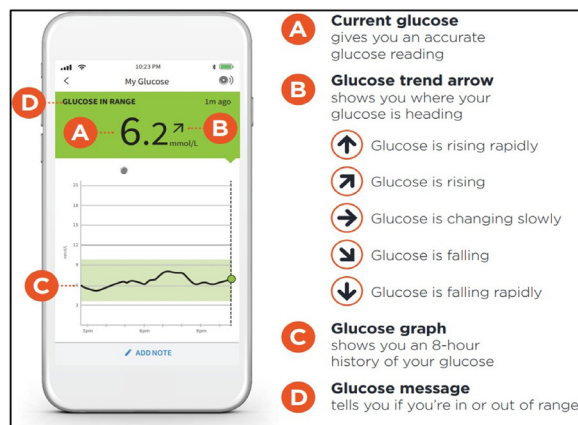


Gray = In Target

A number value is not displayed if the glucose reading is below 2.2 mmol/L or above 22.2 mmol/L.



FreeStyle Libre



- A Current glucose** gives you an accurate glucose reading
- B Glucose trend arrow** shows you where your glucose is heading
 - ↑ Glucose is rising rapidly
 - ↗ Glucose is rising
 - Glucose is changing slowly
 - ↘ Glucose is falling
 - ↓ Glucose is falling rapidly
- C Glucose graph** shows you an 8-hour history of your glucose
- D Glucose message** tells you if you're in or out of range

- ↑ Glucose is rising quickly (more than 0.1 mmol/L per minute)
- ↗ Glucose is rising (between 0.06 and 0.1 mmol/L per minute)
- Glucose is changing slowly (less than 0.06 mmol/L per minute)
- ↘ Glucose is falling (between 0.06 and 0.1 mmol/L per minute)
- ↓ Glucose is falling quickly (more than 0.1 mmol/L per minute)

Comparison of DexCom and FreeStyle Libre

Feature	DexCom	FreeStyle Libre
Displays glucose reading	Continuously every 5 minutes	When the sensor is scanned
Alarms	■ Urgent Low ■ Urgent Low Soon ■ Low Glucose ■ High Glucose ■ Rise Rate ■ Fall Rate ■ No Readings Alert	■ Low Glucose ■ High Glucose ■ No signal
Remote monitoring	If a smart device is used and an internet connection is available	If a smart device is used and an internet connection is available
Sensor placement	Abdomen or upper buttocks	Back of arm
Compatible with insulin pump	Tandem t:slim X2	None
Recommended use	2 years and older	4 years and older
Scanner usage	10 days	14 days
Cost	\$300-400/month	\$200-300/month
Minimum distance from receiver	6 meters	3 meters

Recommendations

- A blood glucose test (finger poke) is performed to confirm the glucose level in the following situations.
 - The IGM reads “low glucose” instead of a number value.
 - The child shows signs of hypoglycemia or hyperglycemia that do not match the IGM reading.
 - The IGM is not working or available and the child is showing signs of hypoglycemia or hyperglycemia.
- Alarms are used for situations requiring immediate action only (e.g., hypoglycemia).
- The low glucose alarm is set at 4 mmol/L or higher.
- The high glucose alarm is not recommended for use at the community program. If used, it is set at a higher level (e.g., 15 mmol/L or higher).
- The vibrate feature is used when the child is independent in responding to alarms.
- The audio feature is used if the child needs assistance with responding to glucose readings. However, the vibrate feature may be used if the child consistently informs community program personnel when it alarms.

Hypoglycemia

Hypoglycemia occurs when blood glucose is less than 4 mmol/L. It can be caused by not eating enough food, missing or delaying a meal, participating in more physical activity than usual, and taking too much insulin. Hypoglycemia can occur minutes after the child appears fine. Most school-age children know when they experience hypoglycemia. Young children may not be aware when they experience signs of hypoglycemia or able to communicate it to community program personnel. Community program personnel should not assume the child will tell an adult when they experience signs of hypoglycemia.

Signs of hypoglycemia

- Cold, clammy, or sweaty skin
- Shakiness, lack of coordination
- Irritable, hostile, poor behavior
- Tired
- Sudden moodiness or behavior change
- Difficulty concentrating, confusion
- Staggering gait
- Child complains of
 - Nervousness
 - Excessive hunger
 - Headache
 - Blurred vision
 - Dizziness
 - Abdominal pain or nausea

Treating hypoglycemia

Fast-acting sugar is the treatment for hypoglycemia. It is a carbohydrate that increases blood glucose quickly. Fifteen grams of carbohydrates is a safe and effective treatment for hypoglycemia, regardless of the child's age and weight. Some children may require less than 15 g of carbohydrates to treat mild to moderate hypoglycemia. Children weighing less than 30 kg may need ten grams of carbohydrates. Children weighing less than 15 kg may need five grams of carbohydrates. The endocrinologist will recommend a safe amount of carbohydrates for the child.

Examples of 15 g of carbohydrates

- 4 dextrose tablets
- ½ cup of juice or regular soft drink
- 3 teaspoons or 3 packets of table sugar dissolved in water
- 1 tablespoon of honey
- 2 rolls of Rockets candy (regular-sized)
- 15 Skittles

The parent is responsible for providing fast-acting sugars that contain the proper amount of carbohydrates for their child.

The child's fast-acting sugars are kept in an accessible location that community program personnel are aware of. They are also brought on excursions and sports events outside the facility.

Recommendations

- The parent packages and labels fast-acting sugars in the number of carbohydrates needed if the child needs assistance.
- The community program keeps a backup supply of fast-acting sugar (15 g of carbohydrates) that is accessible if the child's supply is not available. Fifteen grams of carbohydrates is a safe and appropriate amount regardless of the child's weight.

Responding to hypoglycemia

The response to hypoglycemia is implemented when the child shows signs of hypoglycemia.

Responding to hypoglycemia (blood glucose monitor)

1. Check the glucose using the child's monitor, if it is available.
 2. Give the child a fast-acting sugar if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
 3. In 15 minutes, recheck the glucose.
 4. Give the child a 2nd fast-acting sugar if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
 5. In 15 minutes, recheck the glucose.
 6. Give the child a 3rd fast-acting sugar and contact the parent if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
 7. Call 911 if the parents or emergency contact cannot be reached.
 8. Recheck the glucose every 15 minutes until EMS arrives. Give the child a fast-acting sugar if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
-

Responding to hypoglycemia (interstitial glucose monitor)

These steps are implemented when the low alarm goes off, the IGM reads less than 4 mmol/L or the child shows signs of hypoglycemia.

1. Give the child a fast-acting sugar.
 2. In 15 minutes, recheck the glucose. If it is less than 4 mmol/L, do a finger poke to confirm if the child's monitor is available.
 3. Give the child a 2nd fast-acting sugar if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
 4. In 15 minutes, recheck the glucose. If it is less than 4 mmol/L, do a finger poke to confirm if the child's monitor is available.
 5. Give the child a 3rd fast-acting sugar and contact the parent if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
 6. Call 911 if the parents or emergency contact cannot be reached.
 7. Recheck the glucose every 15 minutes until EMS arrives. Give the child a fast-acting sugar if the glucose is less than 4 mmol/L or they show signs of hypoglycemia.
-

The child is supervised for a minimum of 30 minutes after treating hypoglycemia.

If the child experiences signs of hypoglycemia but is not able or willing to swallow food or fluid, 911 is called and intranasal glucagon (Baqsimi) is administered, if available.

Recommendations

- The child is treated with a fast-acting sugar when the IGM low glucose alarm goes off. A blood glucose test (finger poke) may be performed before giving the child a fast-acting sugar to confirm the glucose is less than 4 mmol/L, at the parent's discretion. If the interstitial glucose reading is 4 mmol/L or higher when rechecking at 15 minutes, a blood glucose test (finger poke) is not necessary. A blood glucose test (finger poke) is performed if the interstitial glucose reading is less than 4 mmol/L to avoid over-treating and is included in the child's health care plan at the parent's discretion. If a blood glucose test is not performed, the statement "If it is less than 4 mmol/L, do a finger poke to confirm" is not included in the child's health care plan.
- The child is given a fast-acting sugar if hypoglycemia is suspected but a glucose reading cannot be obtained. While consuming fast-acting sugars regularly is not recommended, the temporary excess of sugar will not harm the child.
- The amount of time before retesting glucose (i.e., 15 minutes) may be reduced, but not increased.
- The child can resume regular activity when their glucose is 4 mmol/L or higher.
- If the child is treated for hypoglycemia before a meal or snack, food provided by the parent is also eaten.
- After treating hypoglycemia, the child eats a carbohydrate snack if it is more than one hour before the next meal or snack. This is included in the child's health care plan at the parent's discretion. The snack is labeled (e.g., extra carb snack) if the child needs assistance.
- The parent is informed of incidents of hypoglycemia. A regular occurrence of hypoglycemia is undesirable and this information assists the parent in managing their child's diabetes.
- A child with diabetes wears medical identification.

Preventing hypoglycemia

The child may eat a carbohydrate snack to prevent hypoglycemia. Preventative carbohydrate snacks are eaten routinely or based on glucose readings. They can be a fast-acting sugar or another form of carbohydrate.

Recommendations

The following guidelines are used when performing routine glucose monitoring before the child participates in physical activity or is unsupervised. Adjustments can be made within the recommended ranges.

Blood glucose reading	Interstitial glucose reading	Response
Less than 4 mmol/L	Less than 4 mmol/L	Implement response to hypoglycemia The child cannot participate in physical activity. The child remains supervised for 30 minutes.
4-6 mmol/L	4-6 mmol/L (regardless of arrow direction)	Give the child a preventative carbohydrate snack. The child can participate in physical activity or be unsupervised.
n/a	6-10 mmol/L and falling (arrow points down)	Give the child a preventative carbohydrate snack. The child can participate in physical activity or be unsupervised.
6 mmol/L of higher	6 mmol/L of higher and rising (arrow points up) OR stable (arrow points straight)	No preventative carbohydrate snack is given to the child.

- If a preventative carbohydrate snack is needed, the child can participate in physical activity or be unsupervised once the snack is eaten.
- If their glucose is less than 4 mmol/L before physical activity, they are treated for hypoglycemia. They cannot participate in physical activity until their glucose is 4 mmol/L or higher.
- If their glucose is less than 4 mmol/L before being unsupervised, they are treated for hypoglycemia and the parent is contacted to arrange for the child to be picked up. They are supervised until the parent or designate picks them up. They are not sent home without an adult or ride the bus.
- Preventative carbohydrate snacks are labeled by the parent (e.g., carb snack for gym) if the child needs assistance.
- If the child is not able or willing to swallow food/fluid, Baqsimi is administered, and 911 is called.

Severe hypoglycemia

If the child's blood glucose drops severely, they may experience a seizure and loss of consciousness.

Glucagon is a hormone that activates the liver to increase blood glucose and is used to treat severe hypoglycemia. It is administered if the child experiences a seizure or loss of consciousness or is not able or willing to swallow food or fluid.

Glucagon is administered by injection (intramuscular) or nasal spray (intranasal). Community program personnel can administer intranasal glucagon only. The parent may request the community program to store intramuscular glucagon on-site so it is readily available for them or a designate to administer.

Responding to severe hypoglycemia

1. Place the child on the floor in a side-lying position.
 2. Administer Baqsimi, if available.
 3. Call 911.
 4. Notify the parents or emergency contact.
-

The community program's policy on transporting a child to the hospital is followed if EMS response time is delayed.

Food or fluid, including icing gel, is not given to the child when they are unconscious or having a seizure.

Baqsimi

Baqsimi Glucagon Nasal Powder is a dry nasal spray absorbed through the nose. It is approved for use with children four years or older. It contains 3 mg (one dose) of glucagon and is administered into one nostril. It will work even if the child has a cold or is taking cold medication. Common side effects include nausea, vomiting, headache, runny nose, discomfort in the nose, stuffy nose, redness or watering in the eyes, and itchy nose, throat, and eyes.

How to administer Baqsimi

1. Perform hand hygiene* and put on gloves.
 2. Remove the shrink wrap by pulling on the red strip.
 3. Open the lid and remove the device from the tube.
 4. Hold the device with two fingers on the nozzle and thumb on the plunger. Do not push the plunger.
 5. Gently insert the tip into one nostril until your fingers touch the outside of the child's nose.
 6. Push the plunger firmly. The dose is complete when the green line disappears.
 7. Discard any waste, remove gloves, and perform hand hygiene. The device and tube can be given to EMS personnel.
-

Recommendations

- Baqsimi is stored in a shrink-wrapped tube which is not opened until ready to use. If opened, it may be exposed to moisture and not work properly.
- It is kept in temperatures up to 30°C.
- It is replaced when expires. Expired Baqsimi is safe to use but may not be effective.
- It is stored in a secure and accessible location known to community program personnel.

Hyperglycemia

Hyperglycemia occurs when blood glucose is higher than the child's target range. It can be caused by not administering enough insulin, eating too much food, less physical activity, illness, or stress. It is usually not an emergency and does not require immediate attention. Repeated high blood glucose is undesirable and should be brought to the parent's attention. High blood glucose can lead to long-term complications such as heart disease, blindness, kidney disease, impotence, and amputation if left untreated.

Signs of hyperglycemia

- Increased thirst
- Tired
- Urinating more often

* Wash your hands with soap and water or clean them with an alcohol-based hand rub. If they are visibly contaminated, use soap and water.

Responding to hyperglycemia

1. Check the glucose using the child's monitor, if it is available.
 2. Contact the parent if the glucose is higher than indicated in the child's health care plan.
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Recommendations

- If the child uses a blood glucose monitor, the parent is contacted when their glucose is above 14 mmol/L. It is acceptable to adjust this within a range of 12-20 mmol/L.
- If the child uses an interstitial glucose monitor, the high glucose alarm is set at a higher value (e.g., 20 mmol/L) if it is used at the community program. The high glucose alarm is not recommended for use in the community program.
- If the parent receives interstitial glucose readings remotely on their smart device, they may choose not to be contacted by the community program when the child shows signs of hyperglycemia. If so, the response to hyperglycemia is revised to read "No response is needed as the parent receives glucose readings remotely".
- If the parent provides the child with strategies to reduce their glucose (e.g., drink water, engage in physical activity, administer insulin), the child is allowed to implement them. Community program personnel do not determine strategies to reduce the child's glucose.
- A child with diabetes must be allowed to access water and a restroom when needed.

Diabetic ketoacidosis (DKA)

Diabetic ketoacidosis (DKA) involves a combination of hyperglycemia, acidosis, and ketones in the blood. When the body's cells do not receive enough glucose, the body begins to burn fat for energy. Ketones are chemicals produced by the body when fat is broken down. Blood becomes more acidic when ketones accumulate. DKA usually takes hours or days to develop. When the child uses an insulin pump or pod, DKA can happen faster because the child receives rapid-acting insulin only. Ketones are confirmed using a urine or blood test.

How to perform a blood ketone test

A blood ketone monitor operates the same as a blood glucose monitor. Some blood glucose monitors can also test for ketones.

1. Perform hand hygiene* and put on gloves.
2. Have the child wash their hands or use an alcohol wipe to clean their finger.
3. Insert a test strip into the test port on the monitor. Most monitors will turn on automatically when the test strip is inserted.
4. Insert a new lancet (needle) into the lancing device and remove the protective cap by twisting and pulling it straight off.
5. Adjust the puncture depth on the lancing device.*
6. Hold the lancing device firmly against the side of the child's finger and press the release button to eject the lancet and puncture the skin.**
7. Squeeze the fingertip around the puncture site to bring a round drop of blood to the skin surface. You may need to "milk" the finger (squeeze the finger and stroke toward the puncture site) to get an adequate drop of blood. The monitor will not provide a reading if the amount of blood is not sufficient.
8. Touch the end of the test strip to the drop of blood, allowing it to be absorbed.
9. Compare the color on the strip with the color chart on the bottle.
10. Discard the used lancet and test strip into a sharps container.
11. Follow appropriate procedures if there is environmental contamination with blood
12. Discard any waste, remove gloves, and perform hand hygiene.

How to perform a urine ketone test

1. Perform hand hygiene* and put on gloves.
 2. The child performs the urine ketone test.
 3. Compare the color on the strip with the color chart on the bottle.
 4. Discard any waste, remove gloves, and perform hand hygiene.
-

* Wash your hands with soap and water or clean them with an alcohol-based hand rub. If they are visibly contaminated, use soap and water.

** The puncture depth setting is determined by the parent and included in the child's health care plan.

The child is responsible for performing urine ketone tests. Community program personnel may assist the child in interpreting test results.

Responding to ketone test results

1. Contact the parent if the child has small, medium, or high ketones.
 - Blood test result is higher than 0.6 mmol/L.
 - Urine strip is any shade of pink/purple.
 2. Call 911 if the parents or emergency cannot be reached within 2 hours.
 3. Call 911 immediately if the child is vomiting and the parents or emergency contact cannot be reached.
-

The child does not remain at the community program if they have been tested for and have ketones. The priority is to contact the parent to arrange for the child to be picked up. They are supervised until the parent or designate picks them up. The child is not sent home without an adult or ride the bus.

Recommendations

- Ketone testing is performed when the child is ill or the parent suspects DKA and the child's glucose is 14 mmol/L or higher.
- If the child uses an insulin pump or pod, ketone testing is also performed when the glucose is 14 mmol/L or higher before a meal or when the insulin pump or pod is not working.
- Ketone testing is included in the child's health care plan at the parent's discretion.
- Test area strips are not touched or allowed to touch surfaces.
- Expired or discolored test strips are not used.
- The bottle containing test strips is closed tightly to protect them from humidity.
- Test strips are stored in a cool, dry place. They are not stored in the refrigerator.
- With urine test strips, the desiccant (white packet) is not removed from the bottle.

Insulin pumps and pods

An insulin pump has an infusion set with a small, flexible plastic cannula (tube) inserted beneath the skin, usually in the abdomen. The infusion set is attached to a small, battery-powered pump the size of a small cell phone and inserted in a new location every two to three days. The pump can be attached to a belt or waistband or carried in a pouch or pocket.

It can be disconnected from the infusion set for short periods for swimming, bathing, showering, or exercising.

Insulin pumps have a bolus calculator that determines the amount of insulin needed based on data entered (e.g., glucose reading, carbohydrates). Some insulin pumps have a built-in glucose monitor or are compatible with a glucose monitor or smart device to view and share data. The T:slim X2 and Medtronic insulin pumps are available in Canada.

An insulin pod is a pumping mechanism worn directly on the body that contains a reservoir of insulin. A wireless device controls the administration of insulin. A Personal Diabetes Manager (PDM) is a device that remotely administers insulin from the pod.

The OmniPod is available in Canada and is commonly used by children.

Insulin pumps and pods deliver fast-acting insulin continuously (basal) or intermittently (bolus).

- The basal rate is delivered continuously to keep blood glucose in the target range between meals and at night. The insulin pump or pod can be programmed to deliver different rates of basal insulin.
- A bolus dose is a burst of insulin delivered over a short period. A bolus dose is administered with every meal. It may also be administered before a snack or to treat hyperglycemia.

To be prescribed an insulin pump or pod from DER-CA the child must be able to operate it independently. The child and parent are responsible for operating the insulin pump or pod, troubleshooting, and administering insulin by injection if needed.

The child and parent are responsible for the operation of the insulin pump or pod.

The child does not remain at the community program if the insulin pump or pod is not working and the child cannot administer insulin by injection. The priority is to contact the parent to arrange for the child to be picked up. They are supervised until the parent or designate picks them up. They are not sent home without an adult or ride the bus.

Recommendations

- Community program personnel may assist the child with reminders to administer insulin or to confirm the child enters the correct number values. This is considered on a case-by-case basis, and the community program must agree to it.
- An extra infusion set, batteries, and an alternative source of insulin should be available at the community program.

HEALTH CARE PLAN

A written health care plan is developed and maintained by a registered nurse on an annual basis or when change occurs to the management of the child's diabetes at the community program.

The development and implementation of the health care plan reflect the principles of inclusion and independence. A child with diabetes is foremost a child within a family and community program. The environment is changed to support the child, not the child changed to suit the environment. Interventions are as non-intrusive as possible and delivered with respect for the child's dignity and privacy as well as the routines and patterns of the community program. The child and parent have rights and obligations and should participate in decisions affecting their child.

The diabetes health care plan is created in consultation with the parent and community program. For some children, the management of their diabetes at the community program may need to consult with health care professionals involved in managing their diabetes.

The health care plan is stored in a secure and accessible location at the community program. Community program personnel who may be responsible for the child must be aware of its location. It accompanies the child on excursions outside the facility.

The child may attend the community program before a health care plan is provided. In the interim, the community program may contact the nurse for information on the standard of care for emergencies related to diabetes.

Health care plan templates are available by contacting the URIS Provincial Coordinator.

The health care plan for a child with diabetes includes the following information:

Demographic information

- Child name
- Birth date
- Community program name
- Grade, if applicable
- Parent name(s) and phone number(s)
- Emergency contact(s) name and phone number(s)
- Physicians
 - Endocrinologist name and phone number
 - Family physician/pediatrician name and phone number

Medical information

- Medical condition(s)
- Medication(s)
- Known allergies
- Medical numbers (i.e., MHSC, PHIN)
- Availability of medical identification

Diabetes information

- History (e.g., when diagnosed, frequency of hypoglycemia)
- Fast-acting sugars used and their location at the community program
- Baqsimi location and steps on how to administer, if available
- Type of glucose monitor(s) used
- Type of insulin pump or pod used, if applicable

Hypoglycemia

- Signs of hypoglycemia
- Signs of hypoglycemia typically experienced by the child
- How to respond to hypoglycemia

Severe hypoglycemia

- Signs of severe hypoglycemia
- How to respond to severe hypoglycemia

Hyperglycemia

- Signs of hyperglycemia
- Signs of hyperglycemia typically experienced by the child
- How to respond to hyperglycemia

Responding to physical illness (page 4)

1. Contact the parent.
2. Check the glucose using the child's monitor, if it is available.
3. Implement the response to hypoglycemia if the glucose is less than 4 mmol/L or the child shows signs of hypoglycemia.
4. Call 911 if the child is vomiting and the parents or emergency contact cannot be reached.

Non-routine events

- Inform the parent of non-routine events that may include food or physical activity so they can make plans for their child (e.g., provide food alternatives or additional food).
- A supply of fast-acting sugars must be available on excursions outside the facility.

Daily plan at the community program

- Meals and snacks
- Schedule for routine glucose monitoring, if applicable
- Schedule for preventative carbohydrate snacks, if applicable

Documentation template

A template for community program personnel to document interventions implemented (e.g., gave the child a fast-acting sugar, contacted parent, called 911, administered Baqsimi).

Signatures

- Nurse signature & date
- Parent signature & date
- Community program administrator signature and date

When the child needs assistance

Additional information is included in the child's health care plan if they need assistance with any of the following interventions. This information is not included in the health care plan if the child is independent.

Blood glucose monitoring (BGM)

- Name and location of BGM
- Description of assistance needed (e.g., perform blood glucose monitoring, interpret test results)
- Puncture depth
- Steps in performing a blood glucose test, if the child needs assistance with this task
- Schedule for routine glucose monitoring and how to respond to test results, if applicable

Interstitial glucose monitoring (IGM)

- Name of IGM
- Features of the IGM (screenshot on page 8 or 9)
- Description of assistance needed (e.g., perform scan, interpret test results)
- Schedule for routine glucose monitoring and how to respond to test results, if applicable

Ketone testing

- Test method (e.g., blood, urine)
- Location of supplies
- Puncture depth (blood ketone test only)
- Description of assistance needed (e.g., perform blood ketone test)
- Steps in performing a blood ketone test, if the child needs assistance with this task
- When ketone testing is performed and how to respond to test results

Supervision for insulin administration (insulin pen or pump only)

- Description of supervision needed
- Recommendations for insulin pumps and pods (page 20)

TRAINING

Training is provided by a registered nurse on an annual basis or as needed. All community program personnel who may be responding to acute situations, such as hypoglycemia, receive training. On-site training is recommended.

If the child needs assistance with managing their diabetes, designated community program personnel receive additional training. It is recommended that 2-3 community program personnel are designated to ensure there is trained staff available throughout the child's attendance at the community program. On-site training is recommended. On-site is necessary if community program personnel are performing a task (e.g., blood glucose monitoring, blood ketone testing). The child may attend the community program before personnel receive training. In the interim, the community program may contact the nurse for information on the standard of care for emergencies related to diabetes.

Principles of adult learning are incorporated into the training session. The existing knowledge and learning needs of community program personnel are identified and integrated into the training session. Information relevant to their responsibilities is included with a focus on what is most useful to them. Information is provided in an organized manner with clearly defined elements to assist participants in attaining learning goals.

Training is provided at a time when all community program personnel can attend (e.g., staff meeting). The nurse determines the amount of time needed and is based on factors such as the complexity of the child's needs, existing knowledge of community program personnel, the number of people attending the training session, and the format and training resources used. The community program is responsible for ensuring staff attend the training session. It is recommended to keep a written record of attendance.

Training resources are available by contacting the URIS Provincial Coordinator.

Training for community program personnel

The training session for community program personnel who may be responding to acute situations includes the following information.

Diabetes information

- Definition
- Types
- Daily management
 - Food
 - Physical activity
 - Insulin
 - Illness
- Glucose monitoring
- Signs of hypoglycemia and how to respond
- Signs of severe hypoglycemia and how to respond
- Demonstration of administering Baqsimi
- Signs of hyperglycemia and how to respond

Child-specific information

- Signs of hypoglycemia and hyperglycemia typically experienced by the child
- Type and location of fast-acting sugars
- Daily plan at the community program
 - Meals and snacks
 - Preventative carbohydrate snacks, if applicable
 - Routine glucose monitoring, if applicable

Training for designated community program personnel

Additional training is provided to designated community program personnel when the child needs assistance with any of the following tasks.

Blood glucose monitoring

- Location of equipment and supplies
- Description of assistance needed
- Schedule for routine glucose monitoring and how to respond to test results, if applicable
- Observation of community program personnel performing a blood glucose test, if the child needs assistance with this task



Additional information is included in the **Demonstration of blood glucose and blood ketone tests** section below.

Interstitial glucose monitoring

- Features of the interstitial glucose monitor (e.g., trend arrows, alarms)
- Schedule for routine glucose monitoring and how to respond to test results, if applicable

Ketone testing

- Testing method (e.g., blood, urine)
- Description of assistance needed (e.g., perform blood ketone test, interpret test results)
- When ketone testing is performed and how to respond to test results
- Observation of community program personnel performing blood ketone test, if the child needs assistance with this task



Additional information is included in the **Demonstration of blood glucose and blood ketone tests** section below.

Supervision with administration of insulin (insulin pen or pump only)

- Review of supervision needed
- Recommendations for insulin pumps and pods in community program settings

Demonstration of blood glucose and blood ketone tests

When the child needs assistance with performing blood glucose or ketone testing, the nurse observes designated community program personnel performing the task.

When demonstrating blood glucose and ketone tests, routine practice is implemented as outlined in the [*Routine Practices: Guide to Creating a Healthy Environment and Preventing Infections within Child Care Facilities and Schools*](#).

Recommendations

- Disposable lancets are used.
- The monitor assigned to the nurse is used when demonstrating a blood glucose or ketone test. If the test is performed on community program personnel, the monitor is cleaned and disinfected after each use, as indicated in the manufacturer's instructions. It is not used on community program personnel if the manufacturer does not specify how to clean and disinfect it.
- If blood or ketone testing is performed on the child, their lancing device and blood glucose monitor are used.

MONITORING

Monitoring is provided by a registered nurse to ensure trained community program personnel retain the knowledge and skills necessary to care for a child with diabetes.

Monitoring is provided on an annual basis or as needed. The frequency of monitoring is at the nurse's discretion and based on factors such as the complexity of the child's needs, existing knowledge of community program personnel, the number of persons attending the training session, and the format used for training.

Examples of monitoring strategies

- Evaluation form completed by community program personnel after the training session is complete.
- Asking community program personnel questions during the training session.
- Repeat observation of community program personnel performing a task (e.g., blood glucose monitoring).

Monitoring resources are available by contacting the URIS Provincial Coordinator.

RESOURCES

[Diabetes Canada](#)

[American Diabetes Association](#)

[Children with Diabetes Inc.](#)

[International Diabetes Federation](#)

[Juvenile Diabetes Research Foundation](#)

[Diabetes@School](#)

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