Standard Number:	12.2.15G
Effective Date:	January 2004

Interprofessional Practice & Clinical Standards

☐ **Policy (P)** ☒ **Guideline (G)** ☐ **Protocol (PRT)** ☐ **Procedure (PR)** ☐ **Plan of Care (POC)**

Professional Responsible/For Use By: **Nurses**

Title: **Adult Hypoglycemia (low blood sugar)**

Indications: Tighter metabolic control in most people with diabetes reduces the incidence of complications and hence their associated social, emotional and economic burdens. If there are physician orders for the management of adult hypoglycemia, the orders supercede these nursing guidelines.

Care Outcomes: Hypoglycemia is recognized promptly and treated appropriately (fastest rise in blood glucose to a safe level) based on the adult persons situation and extent of symptoms (low blood sugar and autonomic and neuroglycopenic symptoms); risk of injury is reduced; over-treatment is avoided.

Definitions:

Mild hypoglycemia = autonomic symptoms (trembling, palpitations, sweating, anxiety, hunger, nausea, tingling) and person has the ability to self-treat.

Moderate hypoglycemia = autonomic and neuroglycopenic symptoms (difficulty concentrating, confusion, weakness, drowsiness, vision changes, difficulty speaking, headache, dizziness, tiredness) and person has the ability to self-treat.

Severe hypoglycemia = person requires the assistance of another person and may be unconscious.

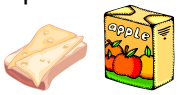
A. Guideline

1. **Mild to moderate (2.8 and 3.9 mmol/L) hypoglycemia**
   - Oral ingestion of **15 g** of carbohydrate, preferably as glucose or sucrose tablets.
     NOTE: If the patient has medical issues (dysphagia, dentition issues) that prevent tolerance of glucose tablets, 1 tube of glucose gel (provides approx. 20 g of carbohydrate) can be administered **and** must be swallowed

   - Wait 15 minutes; retest blood glucose and retreat with another 15 g of carbohydrate if the blood glucose remains less than 4.0 mmoL/L.
   - Repeat above until blood glucose is greater than 4.0 mmoL/L.
   - Once the hypoglycemia has been reversed and to prevent repeated hypoglycemia, the person should have, in addition to the fast-acting treatment above, their usual meal or snack. A snack (including 15 g carbohydrate and a protein source) is recommended if a meal is more than 1 hour away and in the absence of complicating factors.
   - Inform Physician
     NOTE: If patient has had 3 or more incidents of hypoglycemia during their hospitalization, physician must be informed verbally by telephone or in person.
   - Document incident of hypoglycemia

Key Points

- It is estimated that hypoglycemia of any severity occurs annually in 5 to 20% of patients taking antihyperglycemic agents. Although these hypoglycemic episodes are rarely fatal, they can be associated with serious, short-term clinical sequelae.
- Know the location of the glucose tablets, glucose gel, IV glucose and glucagon (if available) in your facility.
- Fruit juice/ drink, 4 ounces = 10 -15 grams carbohydrate, is an alternative, mainly for persons in their own homes.

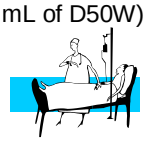


- For persons with dysphagia, individual plans of care (for treatment of hypoglycemia) may be required.

2. **Severe hypoglycemia (less than 2.8 mmol/L) in a conscious person**
   - Oral ingestion of **20 g** of carbohydrate, preferably as glucose tablets.
     NOTE: If the patient has issues (dysphagia, dentition issues) that prevent tolerance of glucose tablets, 1 tube of glucose gel (provides approx. 20 g carbohydrate) can be administered and must be swallowed.

   - Wait 15 minutes; retest blood glucose and retreat with another 20 g of carbohydrate if the blood glucose remains less than 4.0 mmoL/L.
   - Repeat above until blood glucose is greater than 4.0 mmoL/L.
   - Once the hypoglycemia has been reversed and to prevent repeated hypoglycemia, the person should have, in addition to the fast-acting treatment above, their usual meal or snack. A snack (including 15 g carbohydrate and a protein source) is recommended if a meal is more than 1 hour away and in the absence of complicating factors.
   - Physician must be informed verbally (telephone or in person)
   - Document incident of hypoglycemia

3. **Severe (less than 2.8 mmol/L) hypoglycemia in an unconscious person**
   - 25 g. IV glucose, **given as 50 ml of D50W**, over 1 to 3 minutes **or 1 mg** glucagon subcutaneously or intramuscularly (if no IV access).
     NOTE: In emaciated or undernourished patients or those with uremia or hepatic disease, glucagon is not effective. In these patients, IV glucose (50 mL of D50W) should be administered.



   - Wait 10 minutes; retest blood glucose and retreat with either the 25 g of IV glucose given as 50 ml of D50W or 1 mg glucagon if the blood glucose remains less than 4.0 mmoL/L.
   - As soon as possible, physician must be informed verbally (telephone or in person)
   - Document incident of hypoglycemia

****For persons at home, call 911.***

- When glucose levels of 3.1 mmoL/L are reached, autonomic symptoms (trembling, palpitations, sweating, etc.) appear.
  Cognitive dysfunction/neuroglycopenia (difficulty concentrating, confusion, weakness, drowsiness, etc.) occurs at levels of approximately 2.5 mmoL/L.
  These levels vary greatly between individuals and can be affected by the antecedent glucose control in any individual.

- In people with diabetes, the severity of hypoglycemia is defined based on the clinical manifestations of the episodes.
- If the patient has IV access the preferred treatment is D50W.
- **The maximum number of glucagon injections per episode, *is two (2)***

B. Special considerations

Persons who are NPO:	Each person should be assessed on an individual basis. Taking the glucose tablets or the glucose gel even with a small amount of water does not compromise the NPO status. In patients who are NPO and have a Nasogastric tube administer 1 tube of the glucose gel orally. Pre-operative patients who are NPO should be treated either with the glucose tablets (no dysphagia) or the glucose gel (presence of dysphagia).
Physician Notification	Physician must be notified verbally (telephone or in person) for the following: • Incidents of severe hypoglycemia (symptoms and/or Blood Glucose less that 2.8 mmoL) • Patient has had 3 or more incidents of hypoglycemia during a hospital stay

References: 2001 Canadian Diabetes Association Clinical Practice Guidelines for the Prevention and Management of Hypoglycemia in Diabetes - http://www.diabetes.ca/Files/CDAHypoglycemiaGuidelines.pdf