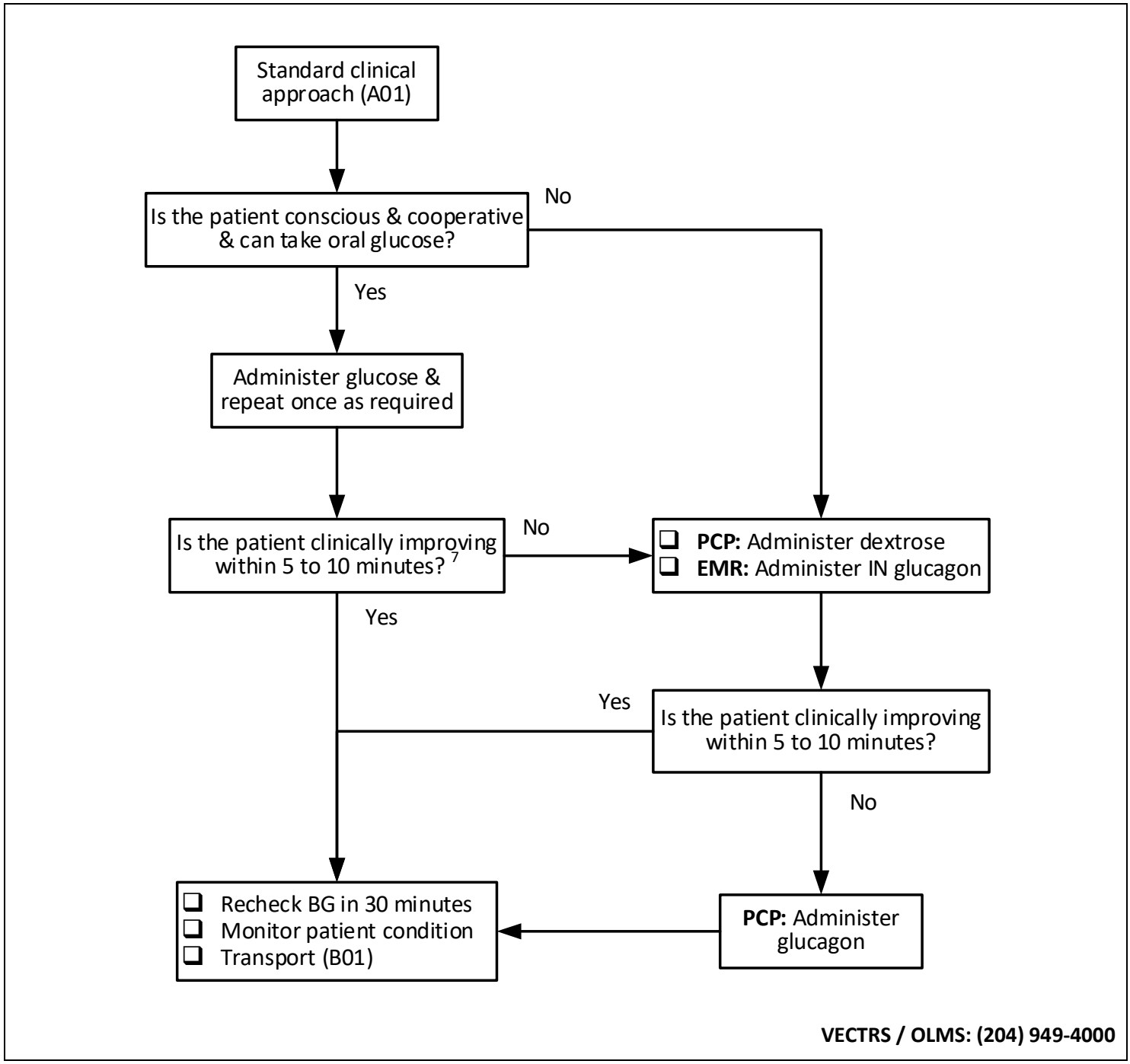
Shared health Soins communs Manitoba	E10 - HYPOGLYCEMIA (6 DAYS & OLDER)	
	Version date: 2025-03-20	Effective date: 2024-04-30 (07:00)

EMR = EMR only | PCP = PCP - ACP | ICP = ICP & ACP | ACP = ACP only | None = EMR - ACP



INDICATIONS

- Confirmed hypoglycemia as indicated by a blood glucose (BG) of:
  - 1 up to 7 years = 4.0 mmol/L or less
  - 72 hours up to 1 year = 3.3 mmol/L or less
- Suspected hypoglycemia when BG measurement is not readily available

WARNINGS

- For treatment if hypoglycemia in the newborn up to 5 days of age refer to D10

NOTES

1. Hypoglycemia most commonly occurs in patients with diabetes who are taking insulin or oral diabetic medications and is often seen after missed meals, with increased physical activity, or with unintentional medication errors.

   Hypoglycemia in a nondiabetic is uncommon but can be seen with alcohol abuse, malnutrition, sepsis, liver or kidney failure, insulin secreting tumors (rare) and intentional overdose.

2. Hypoglycemia initially causes activation of the sympathetic nervous system. *Autonomic symptoms* include weakness, nervousness, irritability, sweating, tremors, tachycardia, palpitations, and hunger. The diabetic will usually recognize these as "warning symptoms" of the immediate need to check and correct their blood sugar.

   Because glucose is the sole energy source for the brain, neurological symptoms will develop if the hypoglycemia is severe and / or prolonged. These *neuroglycopenic symptoms* include confusion, abnormal behavior, visual disturbances, lethargy, decreasing consciousness, and even transient neurological findings which can mimic a stroke. Without correction, seizures, coma, and death may ensue.

   Due to the development of *autonomic neuropathy* with longstanding diabetes, some adult patients may no longer experience the autonomic warning symptoms, and proceed directly to seizures and coma.

3. Symptoms in infants & preverbal children are frequently nonspecific and include irritability, lethargy, poor feeding, cyanosis, and tremors or jitteriness.

   Hypoglycemia in infants and children is uncommon (but should always be excluded) and may be an indication of poor oral intake. Evidence of starvation should raise the suspicion for child neglect or abuse.

4. Hypoglycemia in infants and young children may not response to glucagon (due to insufficient hepatic glycogen stores). Consider proceeding directly to intravenous dextrose.

5. Infants and children can develop severe neurological injury with the rapid shifts in serum osmolality that may occur with concentrated solutions. <u>Do not use 50% dextrose in patients less than 12 years of age</u>.

6. Dextrose or glucose administration with the sulfonylurea oral diabetic agents (e.g. glyburide, gliclazide) may stimulate increased insulin release paradoxically prolonging hypoglycemia. These individuals may require additional medical therapy in hospital with octreotide.

7. After a prolonged period of hypoglycemia, a patient may take some time to return to their baseline cognitive level. However, there should improvement in the level of consciousness (LOC) and cognitive functions within five to ten minutes after treatment. If not, check the BG again
8. Some patients with a brief mild hypoglycemic episode may be candidates to treat and not transport (appendix A).

LINKS
• A01 - Standard Clinical Approach • D10 - Neonatal Hypoglycemia • M06.1 - Glucose • M06.2 - Dextrose • M06.3 - Glucagon • M06.4 - Glucagon Nasal Powder

APPROVED BY	
	
EMS Medical Director	EMS Associate Medical Director

VERSION CHANGES (refer to X05 for change tracking)
• Addition of advanced work scope indicator • Revised notes & flow chart for greater clarity and ease of use • Addition of potential for treat and release

APPENDIX A: TREAT & RELEASE FOR UNCOMPLICATED HYPOGLYCEMIC EPISODE (ACP ONLY)

Consider treat & discharge (the patient does not need to sign a refusal) if all of the following true.

- ❑ The patient responds clinically within 5 to 10 minutes after one or two doses of glucose.
- ❑ The patient is back to their usual level of consciousness & baseline cognition.
- ❑ The BG is normal or above normal (but no higher than their usual range and under 20 mmol/L).
- ❑ There is no evidence of any underlying illness or intentional / accidental overdose.
- ❑ There is no evidence of intoxication with alcohol or drugs.
- ❑ The patient is immediately able to resume oral intake and has access to food.
- ❑ The patient is immediately able to self-monitor their BG (or their caregiver is able to do so).
- ❑ The patient is able to provide informed consent or a parent / custodian is able to provide informed consent for a minor.