Diabetic; Adult

History
- Past medical history
- Medications
- Recent blood glucose check
- Last meal

Signs and Symptoms
- Altered mental status
- Combative / irritable
- Diaphoresis
- Seizures
- Abdominal pain
- Nausea / vomiting
- Weakness
- Dehydration
- Deep / rapid breathing

Differential
- Alcohol / drug use
- Toxic ingestion
- Trauma; head injury
- Seizure
- CVA
- Altered baseline mental status

	Blood Glucose Analysis Procedure
B	12 Lead ECG Procedure ***if indicated***
	IV or IO Access Protocol UP 6
P	Cardiac Monitor
	Altered Mental Status Protocol UP 4 ***if indicated***
	Hypotension/ Shock Protocol AM 5 ***if indicated***
	Suspected Stroke Protocol AM 7 ***if indicated***
	Seizure Protocol UP 13 ***if indicated***

A	Blood Glucose ≤ 69 mg / dl and symptomatic No venous access **Glucagon 1 – 2 mg IM** Repeat in 15 minutes if needed

Blood Sugar ≤ 69 mg / dl

	Consider Oral Glucose Solution *if available*
	Consider Oral Solution (Juices / Food)
A	<u>If no improvement</u> **D10 125 mL – 250 mL IV / IO** **D5 250 – 500 mL IV / IO** Or **D50 12.5 - 25 gm IV / IO** May repeat until Blood Glucose ≥ 80 mg/dL

Blood Sugar 70 – 249 mg / dl

	Blood Glucose Analysis Procedure ***if condition changes***

Exit to Appropriate Protocol(s)

Blood Sugar ≥ 250 mg / dl

A	**Normal Saline Bolus** **500 mL IV / IO** May repeat as needed **Then infuse 150 mL / hr**

	Monitor and Reassess Every 5 minutes Until Blood Glucose ≥ 80 mg / dl

Notify Destination or Contact Medical Control

Adult Medical Protocol Section

Diabetic; Adult

Adult Medical Protocol Section

Hypoglycemia:
- Suspect hypoglycemia in any patient with altered mental status and perform finger stick glucose procedure.
- **D10 is preferred even in adults, however if volume overload is suspected give D50 if available.**
- Dextrose 50% will raise blood sugar but rebound hypoglycemia is common.

Feeding:
- Feeding the awake patient who is able to swallow is good strategy.
- Follow the 15 – 15 Rule, 15 g of carbohydrates and recheck blood glucose in 15 minutes, and repeat as needed.
- Regular soda, fruit just, honey, sugary candy.
- Once hypoglycemia corrected, then feed protein or fatty food.

Hyperglycemia:
Diabetic ketoacidosis (DKA) is a complication of diabetes and cannot be diagnosed in the field.
DKA is a condition where the body cannot properly utilize insulin to effect glucose metabolism. The body compensates by breaking down fats and proteins leading to a metabolic acidosis. The body also begins to dump excess glucose by excessive urination. Patients typically appear dehydrated, ill and usually have tachypnea. Patients can have marked hyperglycemia without being in DKA. DKA can occur at any level of hyperglycemia typically above 250 mg/dl. Often precipitated by illness or injury.

Glucagon:
IV / IO access obtained after glucagon administration and patient remains symptomatic, give D50 as per appropriate treatment arm.

Insulin Pump:
If patient is hypoglycemic turn off the patient's insulin pump. Elicit help from the patient, when able, and / or the family who typically are well versed in it's operation.

Oral Diabetic and Long Acting Insulin Agents/ Patient Refusal:
- If patient refuses transport, attempt contact with patient's PCP to arrange quick follow up that day or the next.
- Instruct patient to remain with a responsible person for the next 36 hours in order for help to be summoned if patient becomes incapacitated. Contact medical control for advice concerning oral agents if needed.
- **Glucophage / Metformin: Patients who ONLY take this medication (orally is only route) do not fit into the category of oral diabetic agents. This medication does not induce hypoglycemia.**

Pearls

- **Recommended exam: Mental Status, Skin, Respirations and effort, Neuro.**
- **Patients with prolonged hypoglycemia or those who are malnourished may not respond to glucagon.**
- **Do not administer oral glucose to patients who are not able to swallow or protect their airway.**
- **Quality control checks should be maintained per manufacturers recommendation for all glucometers.**
- **Patient's refusing transport to medical facility after treatment of hypoglycemia:**
  Blood sugar must be **≥ 80**, patient has ability to eat and availability of food with responders on scene.
  Patient must have known history of diabetes and not taking any oral diabetic agents.
  Patient returns to normal mental status and has a normal neurological exam with no new neurological deficits.
  Must demonstrate capacity to make informed health care decisions. See Universal Patient Care Protocol UP-1.
  Otherwise contact medical control.
- **Hypoglycemia with Oral Agents:**
  Patient's taking oral diabetic medications should be encouraged to allow transportation to a medical facility.
  They are at risk of recurrent hypoglycemia that can be delayed for hours and require close monitoring even after normal blood glucose is established.
  Not all oral agents have prolonged action so Contact Medical Control or NC Poison Control Center for advice.
  Patient's who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal.
- **Hypoglycemia with Insulin Agents:**
  Many forms of insulin now exist. Longer acting insulin places the patient at risk of recurrent hypoglycemia even after a normal blood glucose is established.
  Not all insulins have prolonged action so Contact Medical Control for advice.
  Patient's who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal.
- **Congestive Heart Failure patients who have Blood Glucose > 250:**
  Limit fluid boluses unless patient has signs of volume depletion such as, dehydration, poor perfusion, hypotension, and/ or shock.
- In extreme circumstances with no IV / IO access and no response to glucagon, D50 can be administered rectally, Contact Medical Control for advice.