

Inclusion Criteria: Patient of any age presenting with potential Diabetic Ketoacidosis (DKA)
 [Consider if history of: weight loss, vomiting, abdominal pain, polyuria, polydipsia, nocturia;
 Consider if exam findings of: tiredness, Kussmaul respirations, dehydration, mental status changes, abdominal pain
 (can be severe and present as acute abdomen)]
Exclusion Criteria: well- appearing, HCO₃ >18 mmol/L

ESTABLISH DIAGNOSIS
 Establish DKA diagnosis
 (defined by pH <7.3, HCO₃ <15 mmol/L, blood sugar >200, moderate to large ketones – blood¹ or urine)
 Note: **Hyperglycemic Hyperosmolar Syndrome (HHS)** is a spectrum with DKA, and may not have acidosis and ketones, but will have severe hyperglycemia and dehydration. Discuss care with PICU/Endocrine.

¹POCT Blood Ketone Interpretation:

- <0.6 mmol/L: Low
- 0.6-1.5 mmol/L: Moderate
- >1.5 mmol/L: Large

INITIAL MANAGEMENT

Labs:

- iSTAT chem 7, venous blood gas
- Repeat Chem 7/VBG after initial NS bolus

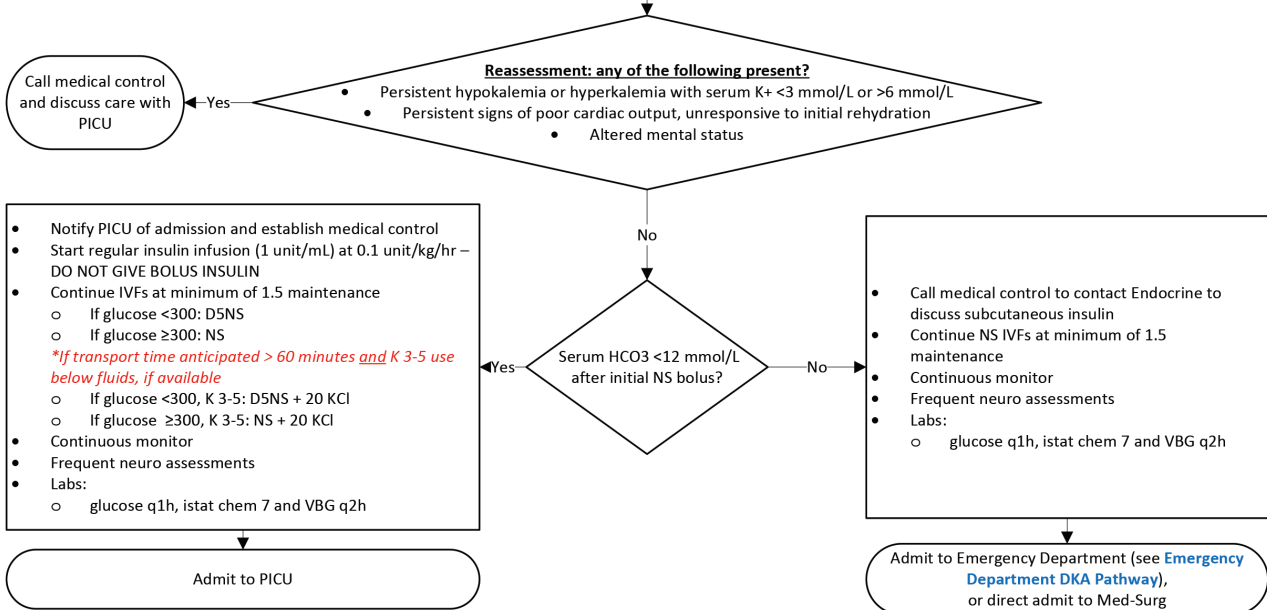
Establish Access:

- PIV x 2

FEN*:

- Make NPO
- Give 0.9% NS bolus 10 mL/kg over 30-60 min
 - Additional fluid bolus only if signs of worsening dehydration or presence of shock (hypotension, tachycardia, delayed cap refill, oliguria)
 - Caution needed when using depressed mental status as marker of shock, as it may represent DKA associated brain injury
 - Large volume fluid resuscitation may be associated with increased risk of DKA associated brain injury
- If long transport expected, consider initiation of special maintenance fluids from referring hospital after discussion with medical control

*If fluids and insulin drip already initiated at referring hospital, transport team to call medical control to determine next steps in management.



Always monitor for DKA Associated Brain Injury and notify the PICU attending if s/s present!

Signs/Symptoms:

- HA, change in neuro status (restlessness, irritability, drowsiness), inappropriate slowing of HR or rise of BP

Treatment: Therapy should always precede imaging!

- (1) **Hypertonic Saline**(3%) 1.25 – 2.5 mEq/kg (2.5 – 5 ml/kg) IV (over 5 min for acute herniation; over 10 min for increased intracranial pressure) **OR**
 - Mannitol** 0.25 g/kg over 30 minutes
- (2) Ensure pt on 0.9% NS containing fluids
- (3) Discuss criteria for intubation (e.g. respiratory depression, poor airway control, worsening neurologic status despite treatment)
- (4) Consider head CT

*** Do not give sedating meds outside the setting of intubation (may lead to rise of PCO₂ and herniation)**