For Back Up Use

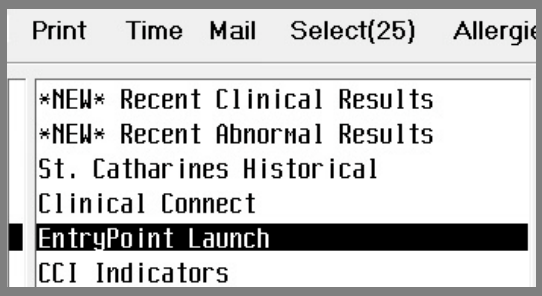
This copy of the Orderset is for Information & BackUp purposes only.

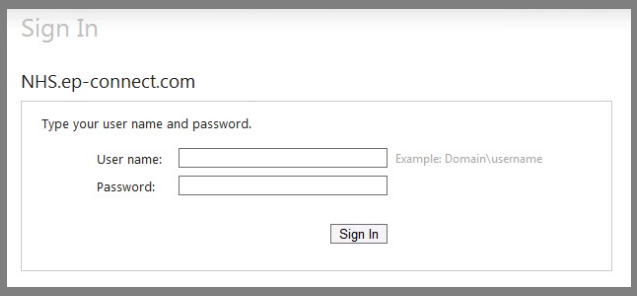
It is intended for use during downtimes.

For daily use, please access the version on EntryPoint

To launch EntryPoint, go to PCI (Patient Care Inquiry) in Meditech. Look for “EntryPoint Launch” and follow the instructions. Log in using your PACS (or Outlook) username and password in lowercase.

Thanks.





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Extraordinary Caring. Every Person. Every Time.

PATIENT INFORMATION

Height _____ cm Weight _____ kg

Allergies _____

Emergency Department (ED) Paediatric Diabetic Ketoacidosis (DKA) Initial Management Order Set

	M	K	O

Orders Processed Date (dd/mm/yyyy) _____
Time (hhmm) _____
By _____
Status _____
Processing Reviewed by _____
Status _____
Faxed by _____

*****Follow-up orders (e.g. Pediatric Suspected Diabetic Ketoacidosis Admission Order Set) must be completed as these orders are for Emergency Department use only*****

☒ Complete Best Possible Medication History Reconciliation and Prescriber Order Form (ORD37)

Consults

☐ _____ Call placed at: _____

Diet

☒ Diet as tolerated, age appropriate

Vitals/Monitoring

☒ Height and Weight to be documented in Meditech ☒ Cardiac Monitoring

☒ HR, RR, BP, SpO_2, Neurovitals (GCS, pupils) q1h x 4 hours;

Notify Physician if change in mental status

Lab Investigations

☒ CBC ☒ Magnesium ☒ Blood Ketones with initial blood work

Lab Investigations to be done STAT THEN 1 hour after IV Bolus Initiated THEN q2h x 2

☒ Na, K, Cl ☒ TCO_2 ☒ Glucose ☒ Creatinine ☒ Urea ☒ Venous Blood Gases ☒ Anion Gap

Additional Lab Investigations

☒ Urine Ketones **STAT and with every void**

☐ Insert indwelling catheter and connect to urometer; Obtain Urine Ketone q4h

☒ Capillary Blood Glucose **STAT** then q1h

☐ Additional Labs: _____

☒ Inform physician immediately if any of the following occur:

- Blood Glucose is less than 5 mmol/L
- Blood Glucose falls greater than 5 mmol/L per hour
- Change in neurological status including headache, irritability, decreased level of consciousness, and/or seizure

Pain and Fever Management

Maximum acetaminophen from all sources 75 mg/kg, up to 4,000 mg, in 24 hours

Maximum ibuprofen from all sources 40 mg/kg, up to 2,400 mg, in 24 hours

☐ acetaminophen _____ mg ☐ PO ☐ PR q _____ h PRN (10 – 15 mg/kg/dose)

☐ ibuprofen _____ mg PO q _____ h PRN (5 – 10 mg/kg/dose, up to 400 mg per dose)

☐ Other: _____

☐ Telephone Order _____ (Ordering Practitioner, Designation) _____ (Signature) _____ (Date/Time (dd/mm/yyyy hhmm))

If Telephone Order _____ (Ordering Physician) _____ (Date (dd/mm/yyyy)) _____ (Time (hhmm)) ☐ Read Back

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IV Fluids

☒ Reassess fluid requirement 12 hours after start of fluid therapy

Initial Bolus

(Recommended for all patients **without** signs of cerebral edema, unless hypoperfused)

☒ sodium chloride 0.9% _____ mL IV bolus over 30 minutes (10 mL/kg)
(If not given in ED or if clinically required)

Subsequent IV fluids after initial therapy

☒ Total IV fluid infusion rate = _____ mL/h. (see tables below) (Note: This rate **includes** volume from insulin infusion)

If NO sign of Cerebral Edema

Weight (kg)	5 – 9.9	10 – 19.9	20 – 39.9	40 or greater
Total IV Fluid Rate (mL/kg/h)	6.5	6	5	4 (Max 250 mL/h)

If ANY sign of Cerebral Edema

Weight (kg)	5 – 9.9	10 – 19.9	20 – 39.9	40 or greater
Total IV Fluid Rate (mL/kg/h)	3.9	3.6	3	2.4 (Max 250 mL/h)

☒ Use the following table to choose the type of fluid being infused

☒ Review and change the type of fluid accordingly once there is urine output, and after every new blood glucose or electrolyte result

Blood Glucose (mmol/L)	**Initial Fluid - before Urine Output present**	**Fluid once there is Urine Output**	
		Serum potassium 5 mmol/L or greater	**Serum potassium less than 5 mmol/L**
15 or greater	sodium chloride 0.9%	sodium chloride 0.9%	sodium chloride 0.9% with 40 mmol KCl per litre
Less than 15 OR dropping by more than 5 per hour	dextrose 10% and sodium chloride 0.9%	dextrose 10% and sodium chloride 0.9%	dextrose 10% and sodium chloride 0.9% with 40 mmol KCl per litre

Continuous IV Insulin Infusion

☒ Do **NOT** give a bolus of IV insulin

☒ Initiate continuous insulin infusion 1 hour after start of fluid therapy (no later than 2 hours)

☒ regular insulin 25 units in 250 mL sodium chloride 0.9% (concentration = 0.1 unit/mL)

☒ regular insulin IV infusion at _____ **units/h** (0.1 units/kg/h)
(Prime any new lines with 50 mL of insulin solution prior to connecting to patient)

☐ Telephone Order _____ (Ordering Practitioner, Designation) _____ (Signature) _____ (Date/Time (dd/mm/yyyy hhmm))

If Telephone Order _____ (Ordering Physician) _____ (Date (dd/mm/yyyy)) _____ (Time (hhmm)) ☐ Read Back

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Management of Suspected Cerebral Edema

☐ If GCS <14, irritability, or Cushing's triad (increased BP, decreased HR, decreased RR) THEN:

- ☐ Raise head of bed to 30°
- ☐ Infuse 20% mannitol _____ mL IV over 20 minutes (0.5 – 1 g/kg)
- ☐ Infuse sodium chloride 3% _____ mL IV over 15 minutes (5 mL/kg, MAX 250 mL)
- ☐ Decrease fluid infusion to 60% of original rate (use table below instead)
- ☐ CT Head STAT

Additional Orders

☐ Telephone Order _____ Ordering Practitioner, Designation _____ Signature _____ Date/Time (dd/mm/yyyy hhmm)

If Telephone Order _____ Ordering Physician _____ Date (dd/mm/yyyy) _____ Time (hhmm) ☐ Read Back

Pediatric Diabetic KetoAcidosis (DKA) Algorithm

Recognition of DKA

DKA can occur in existing or new onset type 1 or type 2 diabetes

Diagnostic criteria: Diabetes (random blood glucose ≥11.1 mmol/L) + Ketonuria + Acidosis

Clinical features: Polyuria, polydipsia, weight loss, dehydration, Kussmaul breathing, headache, decreased level of consciousness, abdominal pain, vomiting

Alert Pediatric Referral Centre

Initial Management

- Assess ABCs, vital signs (including BP) + neurovitals (GCS, pupils)
- Rapid bedside glucose
- O_2 10-15 Lpm non-rebreather mask (if signs of shock)

- IV Access x 2 lines (consider intraosseous if unsuccessful)
- Serum glucose, electrolytes, venous gas, urea, creatinine, serum osmolality
- Urinalysis for glucose, ketones; bladder catheterization if needed

- Consider other investigations:
  - Obtain cultures (e.g. blood, urine, throat) if clinical evidence of infection
  - ECG for baseline assessment of K^+ status (if delay in obtaining serum K^+)

DKA Severity

	Mild	Moderate	Severe
pH	7.2 – 7.29	7.1 – 7.19	<7.1
HCO_3	10 – 14	5 – 9	<5

Hyperosmolar Hyperglycemic State (HHS)

Consider if:
- Glucose ≥33 mmol/L; HCO_3 >15
- Minimal acidosis/ketosis; negative or trace urine ketones
- Osmolality ≥330 mOsm/L

Discuss with Pediatric Referral Centre

CAUTION!

Intubation and ventilation are ***high-risk procedures*** for DKA patients, and should never be undertaken without consultation with your pediatric referral centre or transport team.

Signs of CEREBRAL EDEMA?

- GCS <14 and/or irritability in younger children
- And/or Cushing's triad: ↑BP, ↓HR, ↓RR

YES →

Cerebral Edema Management

- Call Pediatric Referral Centre
- Assess and manage ABCs
- Bed rest, elevate head of bed to 30°
- If hypoperfused (tachycardia, cap refill >2 sec, cool extremities), give 10 mL/kg NS bolus over 30 minutes; reassess after bolus and repeat x 1 if persistent hypoperfusion. Discuss further fluid management with Pediatric Referral Centre.
- Run IV fluids at 60% of rate outlined in Rehydration Table
- 3% NS (5 mL/kg IV over 15 min) OR Mannitol (0.5 – 1 g/kg IV over 20 min)
- Start insulin infusion 0.1 units/kg/hr IV after 1 hour of IV fluids
- Head CT not required prior to transport

NO

Fluid Resuscitation (Based on recent evidence)

Administer 10 mL/kg NS bolus over 30 minutes.

Persistent tachycardia, or other signs of hypoperfusion (cap refill >2 sec or cool extremities)?

NO →

Rehydration Table: Total IV Fluids

Weight	mL/kg/hr
5 - <10 kg	6.5
10 - <20 kg	6
20 - <40 kg	5
≥40 kg	4 (MAX 250 mL/hr)

YES →

Repeat 10 mL/kg NS bolus over 30 min. Reassess after each bolus and repeat if persistent hypoperfusion. Discuss with Pediatric Referral Centre.

Pediatric Referral Centre Discussion

CONSIDERATION OF:
- Difficult vascular access
- Additional treatment of cerebral edema
- Airway management
- Ongoing fluid management

IV Fluids and Insulin

- Rehydrate with IV NS until **glucose <15 mmol/L or decreases by >5 mmol/L/hr once the glucose is <25 mmol/L**. Then change to **D10WNS‡**
- Add 40 mmol/L KCl into IV fluid (if K^+ <5 mmol/L and patient has voided in ED)
- Start **insulin infusion 0.1 units/kg/hr IV after 1 hour of IV fluids**

NEVER use IV insulin bolus
NEVER administer sodium bicarbonate

‡See DKA instructions in Drug Dosing Binder

Ongoing Monitoring Until Transfer

- Q 1 hour: Blood glucose, Fluid ins and outs, Neurovitals (GCS, pupils), HR and BP
- Q 2-4 hours: Electrolytes and venous gas, Monitor ECG for T-wave changes

Dedicate one IV line to use as saline lock for serial bloodwork

PedsPacs
Point-of-Care Tools by TREKK

trekk *Translating Emergency Knowledge for Kids*

A PedsPac resource from TREKK.
*For more tools in the series, call 204-975-7744 or visit **trekk.ca***