

ED UNINTENTIONAL HYPOTHERMIA MANAGEMENT PEDIATRIC (0 Days to 17 Years of Age Less 1 Day)

Weight (kg)

Bulleted orders are initiated by default, unless crossed out and initialed by the physician / prescriber. Boxed orders () require physician / prescriber check mark () to be initiated.

****This Order Set is to be utilized in conjunction with the treatment algorithms outlined in *Unintentional Hypothermia- Emergency Treatment Clinical Decision Support Tool #ED1724 and Quick Reference #ED1724QR* ****

1. **ALLERGIES:** see #826234 – Allergy and Adverse Reaction Record

2. **ED DIET:**

For Mild Hypothermia

Clear Fluids General Breast

For Moderate to Severe Hypothermia

NPO

3. **HYPOTHERMIA STAGING**

*Physician to select A ****OR**** B ****AND**** Hypothermia Stage from tables below. Selection will determine appropriate Unintentional Hypothermia Emergency Treatment algorithm.*

Temperature management physiology does not develop predictably in early years. If in doubt, manage as a neonate/infant.

For patients with Moderate to Severe Hypothermia, initiate early consultation with BC Children's Hospital and consider rapid transport to a pediatric ECMO enabled facility.

A. **Neonate to Infant**

Stage	Clinical Findings	Temperature °C
<input type="checkbox"/> Mild Hypothermia	Marked peripheral vasoconstriction, limited to no shivering, paradoxical rosy cheeks	36 to 36.4°C
<input type="checkbox"/> Moderate Hypothermia	Agitation, distress, confusion, lethargy, hypoventilation, atrioventricular block, atrial fibrillation, junctional rhythms	32 to 35.9°C
<input type="checkbox"/> Severe Hypothermia	Rigor mortis, skin flushing, absent shivering, absent vital signs	Less than 32°C

****OR****

B. **Toddler to Adolescent**

Stage	Clinical Findings	Temperature °C
<input type="checkbox"/> Mild Hypothermia	Shivering, piloerection, peripheral vasoconstriction, delayed capillary refill, pallor, acrocyanosis	32 to 35°C
<input type="checkbox"/> Moderate Hypothermia	Decreased mentation, slurred speech, clumsy, agitation, distress, confusion, lethargy, shivering ceases, hypotension, bradycardia, hypoventilation, atrioventricular block, atrial fibrillation, junctional rhythms	28 to 32°C
<input type="checkbox"/> Severe Hypothermia	Stupor, unresponsive, coma; fixed and dilated pupils; hypotension and bradycardia progress to pulselessness, ventricular fibrillation, or asystole	Less than 28°C

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4. MONITORING

- Monitoring as per *Unintentional Hypothermia- Emergency Treatment Clinical Decision Support Tool #ED1724 and Quick Reference #ED1724QR*
- Point-of-Care Capillary Blood Glucose **STAT**
If blood glucose less than 4.0 mmol/L for 29 days of age or older OR less than or equal to 3.3 mmol/L for 28 days or under refer to Medications section for hypoglycemia management

5. STAT DIAGNOSTICS **recommended for Moderate to Severe Hypothermia**

- ECG 12 LEAD (under 2 years) ****OR**** ECG 12 LEAD (2 to 16 years)
- CHEST PEDS less than 17 years PORT [RAD]

6. LABORATORY

STAT LABORATORY **recommended for Moderate to Severe Hypothermia**

- CBC, Lytes4, Creatinine incl. GFR, Glucose Random, Urea
- Calcium, CK, lipase
- INR, PTT, fibrinogen
- Acetaminophen, Salicylate, Osmol, Ethanol
- Group and Screen
- Blood Gases – Arterial ****OR**** Blood Gases – Venous ****OR**** Blood Gases – Capillary

TIMED LABORATORY **recommended for Moderate to Severe Hypothermia**

- Blood Gases- Arterial Q1H x 3 after initial
****OR****
- Blood Gases - Venous Q1H x 3 after initial

7. TREATMENTS

- Treatments as per *Unintentional Hypothermia- Emergency Treatment Clinical Decision Support Tool #ED1724 and Quick Reference #ED1724QR*
- Oxygen to keep SPO₂ greater than 92% warmed and humidified to prevent further heat loss

For Moderate to Severe Hypothermia:

- Initiate two peripheral IV lines **STAT**
 - If unable to insert peripheral IV within 5 minutes OR after 2 failed attempts insert intraosseous (IO) as per site policy/process

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8. INTRAVENOUS THERAPY AND HYDRATION

A. IF SIGNS OF SHOCK PRESENT

Administer IV crystalloid boluses 10 to 20 mL/kg to a maximum of 40 to 60 mL/kg in the first hour. Consult BCCH if patient requiring 40 mL/kg or more in the first hour. If signs/symptoms of fluid overload move to vasoactive therapy. Consider reassessing need for further boluses with each 2°C increase in temperature.

IV Fluid Bolus

- Lactated Ringer's Solution** _____ mL (10 to 20 mL/kg) **IV/IO over** _____ **minutes**
(recommended over 5 to 30 minutes) warmed to 40°C to 44°C to prevent further heat loss
****OR****
- Sodium chloride 0.9%** _____ mL (10 to 20 mL/kg) **IV/IO over** _____ **minutes**
(recommended over 5 to 30 minutes) warmed to 40°C to 44°C to prevent further heat loss

B. IF NO SIGNS OF SHOCK PRESENT

Administer maintenance IV fluids if NPO. Do not give IV boluses unless clinical signs of shock arise or if directed by Pediatrician.

Maintenance IV Fluids

0 to 28 Days of Age

- D10NS** _____ mL/H **IV/IO** warmed to 40°C to 44°C to prevent further heat loss

29 Days of Age to 17 Years of Age Less 1 Day

- D5NS** _____ mL/H **IV/IO** warmed to 40°C to 44°C to prevent further heat loss

9. MEDICATIONS

VASOACTIVE THERAPY

- EPINEPHrine IV/IO continuous infusion starting at 0.05 mcg/kg/min – titrate to a max of 1 mcg/kg/min targeting MAP goal of** _____ **mmHg (suggested MAXIMUM MAP 65 mmHg)**

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9. MEDICATIONS (cont'd)

HYPOGLYCEMIA MANAGEMENT

****Select orders based on appropriate age and weight where applicable****

0 to 28 Days of Age

BLOOD GLUCOSE LESS THAN OR EQUAL TO 2.6 mmol/L

****SELECT ONE A OR B****

A. IV/IO Access

D10W _____ mL (2 mL/kg/dose) **rapid IV/IO push STAT**

****OR****

B. NO IV/IO Access

glucagon _____ mcg (30 mcg/kg/dose) **IM x 1 dose**

****THEN****

• **D10NS** _____ mL/H IV/IO

• Reassess blood glucose in 5 minutes post D10W or glucagon administration

• If blood glucose 2.6 mmol/L or less notify MRP STAT

• If blood glucose 2.7 mmol/L or greater follow guidance for blood glucose 2.7 to 3.9 mmol/L

BLOOD GLUCOSE 2.7 to 3.9 mmol/L

• **D10NS** _____ mL/H IV/IO

• Reassess blood glucose Q30 minutes until 4.0 mmol/L or greater then MRP to reassess care plan

****OR****

29 Days of Age to 17 Years of Age Less 1 Day

BLOOD GLUCOSE LESS THAN OR EQUAL TO 2.6 mmol/L

****SELECT ONE A OR B****

A. IV/IO Access

D10W _____ mL (5 mL/kg/dose to a maximum of 250 mL/dose) **rapid IV/IO push STAT**

****OR****

B. NO IV/IO Access (select ONE weight-based dose)

Weight less than 20 kg

glucagon 0.5 mg IM/SC x 1 dose

****OR****

Weight greater than or equal to 20 kg

glucagon 1 mg IM/SC x 1 dose

****THEN****

• **D5NS** _____ mL/H IV/IO

• Reassess blood glucose in 5 minutes post D10W or glucagon administration

• If blood glucose 2.6 mmol/L or less notify MRP STAT

• If blood glucose 2.7 mmol/L or greater follow guidance for blood glucose 2.7 to 3.9 mmol/L

BLOOD GLUCOSE 2.7 to 3.9 mmol/L

• **D5NS** _____ mL/H IV/IO

• Reassess blood glucose Q30 minutes until 4.0 mmol/L or greater then MRP to reassess care plan

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