### Cardiovascular

1) Monitor with 3-lead EKG per routine. Expect bradycardia (< 100 bpm) when temperature < 34 °C
2) Vascular access
   - Establish peripheral IV access immediately (avoid scalp IVs)
   - Insert UVC (double lumen) if dependent on clinical scenario (For hypotension, arterial line monitoring is preferred prior to inotropic support being initiated)

### Fluid and Electrolytes

1) Maintenance fluid
   - Total fluid volume of 60 ml/kg/day
   - Use Standard TPN @ 50 ml/kg/d with dextrose containing IV fluid, until custom TPN is available
   - Maintain GIR no less than 4 mg/kg/min at all times
2) After 24 hours of therapeutic hypothermia, if the infant is physiologically stable, the attending may initiate non-nutritive feeding of 10 mL/kg/day with mother’s milk. This should not be advanced until after infant is rewarmed

### Respiratory

1) Ventilator Support – provide any respiratory support as needed
   - Avoid hypocapnia, and hyperoxia
2) Maintain air humidifier in normothermic range (37ºC)

### Infectious Disease

1) Evaluate for Suspected Sepsis – start antibiotics after cultures obtained
   - Antibiotics should consist of Ampicillin and Cefotaxime (Cefepime may be used, if Cefotaxime not available)

### Neurological

1) Request Neurology Consultation, if not already requested
   - Sedation: maintain adequate sedation with Morphine. The following guideline can only be deviated from with attending approval
     - Loading dose 0.05 mg/kg IV (repeat PRN x 1 for shivering; severe irritability tachycardia HR > 120)
     - Start continuous infusion: 0.01 mg/kg/hr IV drip. DO NOT INCREASE THE INFUSION RATE
     - Reduce rate to 0.005 mg/kg/hr after 12 hours
     - Avoid Benzodiazepines for distress
   2) Neuromonitoring:
     - Obtain full channel EEG on admission (to be ordered stat by neurology)
     - Continue full channel EEG for 24 hours or longer if seizures detected
       - If no seizures and EEG recording considered low risk, may switch to aEEG after 24 hours (refer to aEEG CPG for details)
     - Neuromonitoring (either EEG or aEEG) should be continued until 6 hours after rewarmed completed
   3) Seizure control (Refer to Neonatal Seizure CPG for further details)
     - 1st choice agent for treating seizures is Phenobarbital
       - Load: 20 mg/kg IV; repeat if seizures persist 20 minutes after load complete
       - Check serum levels 2-12 hours after load
     - If 2nd agent required: Fosphenytoin 20 mg/kg load
     - If 3rd agent required: Midazolam – load with 0.05 mg/kg IV and then infusion of 0.15 mg/kg/hour for 12 hours, taper over another 12-24 hours
   4) Cranial ultrasound imaging should be ordered STAT (But do not need to wait for HUS to start therapeutic hypothermia)
   5) MR imaging (NICU MRI Guidelines)
     - If considering re-direction of care or early Exit, consider a MRI at 24-48 hours
     - Routine MRI – HIE protocol on DOL #4 (after re-warming)
     - Follow-up MRI on/after DOL #10- #21
   6) Complete and document Neonatal Encephalopathy Neurological Examination at least once daily during hypothermia and re-warming, and at discharge

### Skin

1) Monitor for subcutaneous fat necrosis (erythema, purple color, painful nodules, especially on the back and buttocks). May occur during hypothermia or after re-warming
2) If present monitor for hypercalcemia

### Laboratory/blood work

1) Lab schedule should be determined based on assessment of the infant’s condition and evaluated daily and as needed- below is a suggested lab plan:
   - On admission: Blood gas, lactate, CBC, PT, PTT, INR, Fibrinogen, blood cx
   - 6 hours: BMP, Mg, ALT, AST
   - 24 h: CBC, PT, PTT, INR, Fibrinogen, BMP, Mg, P, ALT, AST
   - Daily BMP
   - Phenobarbital levels (only if patient was loaded for clinical seizures)