1) Equipment will be found in the CSA equipment room.
   a) Blanketrol III (BIII) cooling unit
   b) Maxi-Therm Hyper-hypothermia blanket Pediatric size 25”x33”
   c) One set of two connecting hoses
   d) Disposable esophageal temp probe-Steri probe
   e) Black interconnect cable for temp probe- (attached to side of unit)
   f) Distilled water

2) Cooling set-up
   a) Check water level in the water fill opening. Water should be up to the strainer. Add water as needed to reach the strainer.
   b) Connect the black hoses to the blanketrol unit, and to the cooling blanket
      i) The metal couplings attach to the metal outlets on the side of the blanketrol. You may use any of the three circuits. Big to small, small to big.
      ii) The black and white plastic couplings attach to the black and white tubes on the cooling blanket. It does not matter black to white or white to white.
   c) Plug in BIII and turn on power switch (Rocker switch in front)
   d) If time allows, pre-cool the blanket by operating in the manual control mode.
      i) Press the TEMP SET (Middle of panel)
      ii) Press the up arrow or down arrows to change the patient set point display to 33.5°C.
      iii) Press the MANUAL CONTROL button.
   e) Make sure water is circulating into the blanket. Check wheel on side of unit. If it is spinning the unit is circulating the water.

3) Insertion of Esophageal Temperature Probe
   a) Oral placement is preferred, if the patient is intubated. The probe should be placed in the lower third of the esophagus. Measure the distance from the nares to the ear to the xyphoid process and subtract 2 cm.
   b) Secure the probe by taping as for an OG tube.
   c) Probe position must be confirmed by x-ray. Body cooling may be initiated prior to x-ray confirmation.
   d) Mark the temp probe at the mouth with an indelible pen after its position has been confirmed by x-ray. Use this mark to assure that the probe remains in proper position through out the cooling and rewarming process.

4) Cooling Phase
   a) Lay patient on blanket. Ensure esophageal probe is plugged into the black interconnect cable. Plug the black interconnect cable into side of the Blanketrol III.
   b) Set the patient’s goal temperature:
      i) Press TEMP SET (Middle of panel)
ii) Using the up and down arrows set the goal temperature for 33.5 degrees C

c) Set the GRADIENT VARIABLE at 20 degrees C
i) Press GRADIENT VARIABLE (Right side of panel)
ii) Press and hold the up or down arrows to set 20 degrees C
iii) Press the GRADIENT VARIABLE button again. The water will begin to flow into the blanket. This initiates cooling.

The cooling blanket will operate at a temperature no more than 20 degrees C less than the patient’s esophageal temp. As the patient’s temp decreases, so will the cooling blanket’s temp, until the patient’s esophageal temp reaches 33.5, at which time you move into the maintenance phase. If the patient’s esophageal temp does not reach 33.5 degrees C within one hour, notify NNP / Fellow / Neo.

5) Maintenance Phase
a) Press TEMP SET (this will stop the flow of water.)
b) Press GRADIENT 10C (this will restart the flow of water.)
c) The maintenance phase lasts for 72 hours.

The cooling blanket will operate at a temperature no more than 10 degrees C more or less than the patient’s esophageal temp, to keep the patient’s temp at 33.5.

6) Rewarming Phase

The goal for rewarming is for the patient’s esophageal temp to increase by 0.5 degrees C every hour. Rewarming to 36.5 degrees C should take approximately 6 hours.

a) Start the rewarming phase 72 hours after the patient’s esophageal temp first reached 33.5 degrees C.
   i) Press TEMP SET
   ii) Using the up and down arrows, increase the patient set point by 0.5 degrees C.
   iii) Press GRADIENT 10C to restart water
   iv) Repeat steps i-iii hourly until patient’s esophageal temp reaches 36.3-36.4 degrees C.

b) When the patient’s esophageal temp reaches 36.3-36.4 degrees C,
   i) Press MONITOR ONLY (lower right side of panel)
   ii) Place skin temp probe.
   iii) Turn over-bed warmer or omni bed ‘on,’
   iv) Maintain normothermia using warmer in servo control mode.
   v) Assess and record axillary and esophageal temps Q1hr.
   vi) When axillary temps have been 36.5-37.2 for 2 hours, the esophageal probe may be removed, and the Blanketrol may be turned off and removed from beside.
   vii) Continue to monitor axillary temps Q1hour x2 more hours, or until stable and normothermic, per orders.

c) If the baby’s temp does not increase by 0.5 degrees C in an hour, or goes up by more than 0.5 degrees C in an hour, suspend rewarming process, and notify NNP, fellow or neonatologist.

d) If the baby’s temp exceeds 37.5 degrees C, notify NNP, fellow or neonatologist.
7) Cleaning after use
   a) When re-warming is complete, allow the blanket and hoses to remain connected to the unit for about 10 minutes. Water will drain back into the reservoir.
   b) Discard the single-use esophageal probe. Wipe the black interconnect cable with a non-alcohol solution (Sani-cloth) and store in the unit’s front storage panel.
   c) Disconnect the power cord before removing the hoses. Attach the cord to the back of the unit.
   d) Clamp the blanket tubes. Disconnect the blanket from the hoses and discard. Loosely coil the hose and strap to the unit’s back panel.
   e) The unit and tubing should be wiped down using only NON-ALCOHOL solutions (Sani-cloth).
   f) Water in the reservoir does not need to be drained. Biomed will drain and clean the water reservoir every three months.
   g) The Blanketrol IIIs are NOT TO LEAVE the NICU. Biomed has agreed to drain and clean the Blanketrols in our unit every three months.

Part numbers for cooling blanket

- Maxi-Therm Lite hypo-hyperthermia blanket-pediatric size 23”x33” #874 (Cincinnati Sub Zero)
- Interconnect cable 4900B-Blanketrol
- Disposable esophageal probe- Steri-probe 491B (Cincinnati Sub Zero)
- Distilled water CHC # 12119, on par cart in NICU