SHANDS AT THE UNIVERSITY OF FLORIDA
DEPARTMENT OF NURSING AND PATIENT SERVICES

SUBJECT: **Hypothermia of the Newborn with Hypoxic-Ischemic Encephalopathy (HIE)**

PURPOSE: **To safely manage the care of the infant undergoing induced hypothermia for treatment of Hypoxic-Ischemic Encephalopathy.**

LEVEL OF SKILL: **RN/MD**

POLICY STATEMENTS:

Systemic hypothermia is used to reduce the severity of brain damage in newborns diagnosed with HIE (Hypoxic-Ischemic Encephalopathy).

EQUIPMENT LIST:

1. Servo controlled cooling unit (see Appendix for Quick Start Instructions)
2. Quick Start kit appropriate for cooling unit
   - Blanket
   - Rectal/surface probes

CONTENT STATEMENTS

STEPS	KEY POINTS
A. MD/ARNP completes HIE admission orders.	This is in addition to routine NICU admission orders.
B. Determine type of cooling unit and follow quick start reference (Appendix A and B)	All external heat sources, including infant warmer, should be turned off.
C. Cooling the infant. 1. Place infant directly on the blanket.	Cooling lasts for 72 hours. Document initiation of cooling in nurse's notes. No sharps allowed on or near the blanket. Expose the maximum amount of body surface to the blanket, using the smallest size diaper possible.
E. Monitoring and care during body cooling. 1. Cluster care and minimize stimulation as much as possible. 2. Record vital signs and urine output (if infant has foley) every hour. 3. Assess skin and reposition every 30 minutes. 4. If infant rectal temperature is greater than 33.5 C or less than 32.5 C, adjust unit set point up or down to keep infant within limits. 5. Complete quality monitoring at the end of every shift (Appendix C).	Be alert for seizures, bradycardia, hypotension, hypoglycemia, thrombocytopenia, abnormal electrolytes and coagulopathies. Rolled cloths/ positioning aids may be used but should be placed under the cooling blanket. Infants who become warm are at increased risk of seizures.

F. Rewarming 1. Prior to beginning rewarming, notify MD/ARNP of BMP results and abnormal vital signs. Do not begin rewarming without physician order if results are abnormal or there is any indication of seizure activity. 2. Rewarm infant by adjusting set temperature by 0.2-0.4 C. every hour or initiating controlled rewarm setting. 3. After rewarming is completed, place infant on servo controlled radiant warmer. 4. Document when rewarming is complete. 5. Clean unit with appropriate equipment cleaner and return unit to storage. 6. Return quality monitoring form to clinical leader office.	Electrolyte imbalances may predispose infant to arrhythmias during rewarming. Heart rate should be less than 160 and mean B/P greater than or equal to 35.

References:

Cooper, D.J. Induced Hypothermia for Neonatal Hypoxic-Ischemic Encephalopathy: Pathophysiology, Current Treatment, and Nursing Considerations. Neonatal Network, 2011:30:1, 29-35.

Long, M. & Brandon, D.H. Induced Hypothermia for Neonates with Hypoxic-Ischemic Encephalopathy. JOGNN, 2007: 36:3, 293-298.

Shankaran, S, et al. Whole-Body Hypothermia for Neonates with Hypoxic-Ischemic Encephalopathy. N Engl J Med 2005; 353: 1574-84.

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Appendix C
Quality Monitoring
Complete at the end of every shift while cooled

Label

	Date Time	Date Time	Date Time	Date Time	Date Time	Date Time	Comments
Number of hours rectal temp greater than 33.5 C by rectal probe (use partial ex: 0.25 hours)							
Labs outside normal limits reported to MD (name lab)							
# Episodes of abnormal aEEG tracings							
Episodes of seizure activity							
Neonatal Skin Condition Score							
NPASS score at beginning and end of shift							
Questions/issues? More space on back.							
RN Name							