

Thermoregulation: Guideline for Transitioning Premature Infants from an Incubator to Crib in the NICU

- Maintaining a normal body temperature in premature infants promotes good growth and development.
- When infants are ready, transitioning to an open crib aligns with an infant's developmental needs and aids in improving parental interaction.
- Infants 34 weeks gestation or greater in incubators for reasons other than thermal management (e.g. phototherapy, observation, isolation) can transition to an open crib without following these guidelines.

Eligibility Criteria

- A premature infant's crib readiness involves an evaluation of their environmental and physiological factors.
- Premature infants who meet the following criteria are eligible for the transition process from an incubator to a crib:
 1. Weight \geq 1800 grams
 - In consultation with the care team, small for gestational age infants who meet criteria except weight may be considered eligible to transition to an open crib once weight is $>$ 1500 grams.
 2. Consistent weight gain (average 15-20 grams/kg/day) over previous week
 3. Stabilized apneic and bradycardic events
 4. Medically stable condition
 5. Incubator air temperature 32°C or less over the previous 24 hour period
 6. No invasive mechanical ventilation
 - Infants who require invasive ventilation but otherwise meet eligibility criteria, consultation with the care team is required to determine if infant can be cared for in a crib (i.e. infant will benefit developmentally but is also stable from a respiratory perspective [versus transfer to overbed warmer for infants with a critical airway]).

Transitioning Eligible Preterm Infants from an Incubator to Crib

- During the thermal challenge, the incubator should **NOT** be turned off and the portholes should **NOT** be left open.
- Rationale: 1) no incubator temperature control risking infant thermal stress, and 2) open port holes are a safety issue.

- If at any time during the transition process, infant's temperature is $<$ 36.5°C , the infant is not ready for a crib and the process is stopped.
- A minimum of 5 days is required before re-attempting the crib transfer process if initial trial was unsuccessful (e.g. infant either did not tolerate incubator weaning or required return to incubator from crib).

Step 1: Prepare infant for crib transition process

1. From electronic medical record, determine average incubator temperature in previous 24 hours.
2. Dress infant in a sleeper and hat and cover with a blanket (clothing's insulation effect will increase the infant's temperature).
3. Switch incubator from skin control to manual control.
4. Set the incubator temperature 0.5°C below the identified average.



Step 2: Incubator temperature weaning to determine infant readiness for crib transfer

1. Monitor the infant's temperature every two hours.
2. If infant's temperature is $\geq 36.5^{\circ}\text{C}$ every two hours, reduce incubator temperature by 0.5°C until it reaches 28°C .
3. Once the incubator temperature reaches 28°C , the infant is to remain dressed in the incubator for 24 hours.
4. Infant can be moved to a crib if infant's temperature is maintained at $\geq 36.5^{\circ}\text{C}$ during this 24 hour period.



Step 3: Infant care post crib transfer

1. Check temperature every hour x 4 after crib transfer.
 - If temperature is between 36.2°C and 36.5°C , increase clothing layers if possible and add a pre-warmed blanket.
2. Continue to check temperature hourly until axillary temperature is $\geq 36.5^{\circ}\text{C}$ for 4 consecutive hours.
3. If temperature is $<$ 36.5°C for 3 consecutive hours (3 x hourly checks), return infant to a **pre-warmed incubator**.
4. Additional instructions
 - **BATHING** should be deferred until temperature is maintained $\geq 36.5^{\circ}\text{C}$ for a minimum of 12 hours after transition to crib. Thereafter, normal unit bathing guidelines should be followed (e.g. CLABSI prevention strategies).
 - If infant has a central line (PICC), ensure site remains visible.
 - Infants with poor growth after transition may require return to an incubator due to increased energy expenditure maintaining thermal control.

References

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