

GOLDEN HOURS IN NICU

INTRODUCTION:

The "Golden Hour," [the first 60 minutes] practice guidelines were used for infants born before the completion of 32 weeks' gestation. This period is the most important of his or her life. Specific attention to respiratory management, temperature regulation, and vascular access, undertaken via a standardized approach may have immeasurable long-term benefits, and make the difference between life and death.

OBJECTIVES:

1. To review the changes that occur during transition to extra-uterine life.
2. To appreciate the role of functional teams in facilitating smooth transition.
3. To review potentially better practices that can be applied during the Golden Hour.
4. To help ensure optimal outcome.
5. To share care maps and measurement tools that can be applied to improve performance.

At delivery (0-20 minutes of age)

A. Thermoregulation:

- Pre warm mode Radiant Warmer on
- Warm Blankets
- Hat
- Polyethylene Wrap
- Thermal Mattress/Embrace bag
- Warm Transport Incubator/Embrace bag
- Increased Delivery Room temperature to 25C

Hypothermia is associated with morbidities such as intraventricular hemorrhage, an increased risk of infection, delayed fatal-to-new-born circulatory adjustment, respiratory distress syndrome and increased mortality.

B. Plastic Bag and Hat:

- Use a plastic bag to keep the infant warm immediately after birth and place under the radiant warmer. Do not dry the infant. Ensure the opening of the bag is at the neck and folded behind shoulders. Place a hat on head.

Cord clamping: Delay cord clamping if necessary.

Cord Blood Gas: Ensure the staff collect umbilical arterial and venous blood for gas analysis.

C. Oximeter:

- Attach the pulse ox meter probe to the right wrist for pre ductal saturation readings.

- Acceptable minimum oxygen saturations in preterm new-born babies: Time from birth in minutes and Acceptable right wrist or hand saturation:

1 min – 60%

2 min – 65%

3 min – 70%

4 min – 75%

5 min – 80%

10 min – 85%

D. Respiratory management in the delivery suite/OT:

1. < 28 wks. Infants are to be intubated and prophylactic surfactant given at birth and remain intubated for the transport to NICU. It is preferable to use auto-breath mode on Dräger resuscitation trolley rather than hand ventilate.
2. 28+1 wks. – 32 wks. Transport the infant on non-invasive CPAP (6-7 cm H₂O) in NICU. Transport from the delivery suite/OT to NICU

(20 minutes –1 hour of age): in NICU

- Measure weight and transfer the infant in the plastic wrap into the incubator (GE Omni bed, Fanem Incubator).
- Measure length and head circumference in the incubator.
- Deduct 25 g from the measured weight to obtain the accurate weight of the infant (Plastic bag and hat weigh 20 g, cord clamp 3 g, ox meter probe 2.5 g, ET tube 3 g, NG tube 3 g) Plastic Bag.
- Keep the plastic bag on until the commencement of central line insertion. Incubator Temperature and Humidification:
 - Set the initial ambient temperature at 36C in air mode until the temperature is stable.
 - Set the humidification at 85% for new-born <29+0 weeks or birth weight <1000 g. Ventilator/CPAP support
 - Connect the new-born to ventilator or CPAP as appropriate. Adjust the ventilator settings or CPAP settings as needed.
 - Allow 10 minutes for the nursing staff to settle the baby in the incubator, attach all leads, ventilator tubing's and gastric tube. While waiting, medical staff to decide on the sizes and lengths of ETT, UVC, and UAC and plan the investigations needed in the first 2 hours (e.g.

Chest and Abdominal X-Ray, FBC, blood culture) and prescribe fluids and medications.

- <27+6 weeks: No need for ECG leads while they are monitored on pulse ox meter and UAC.

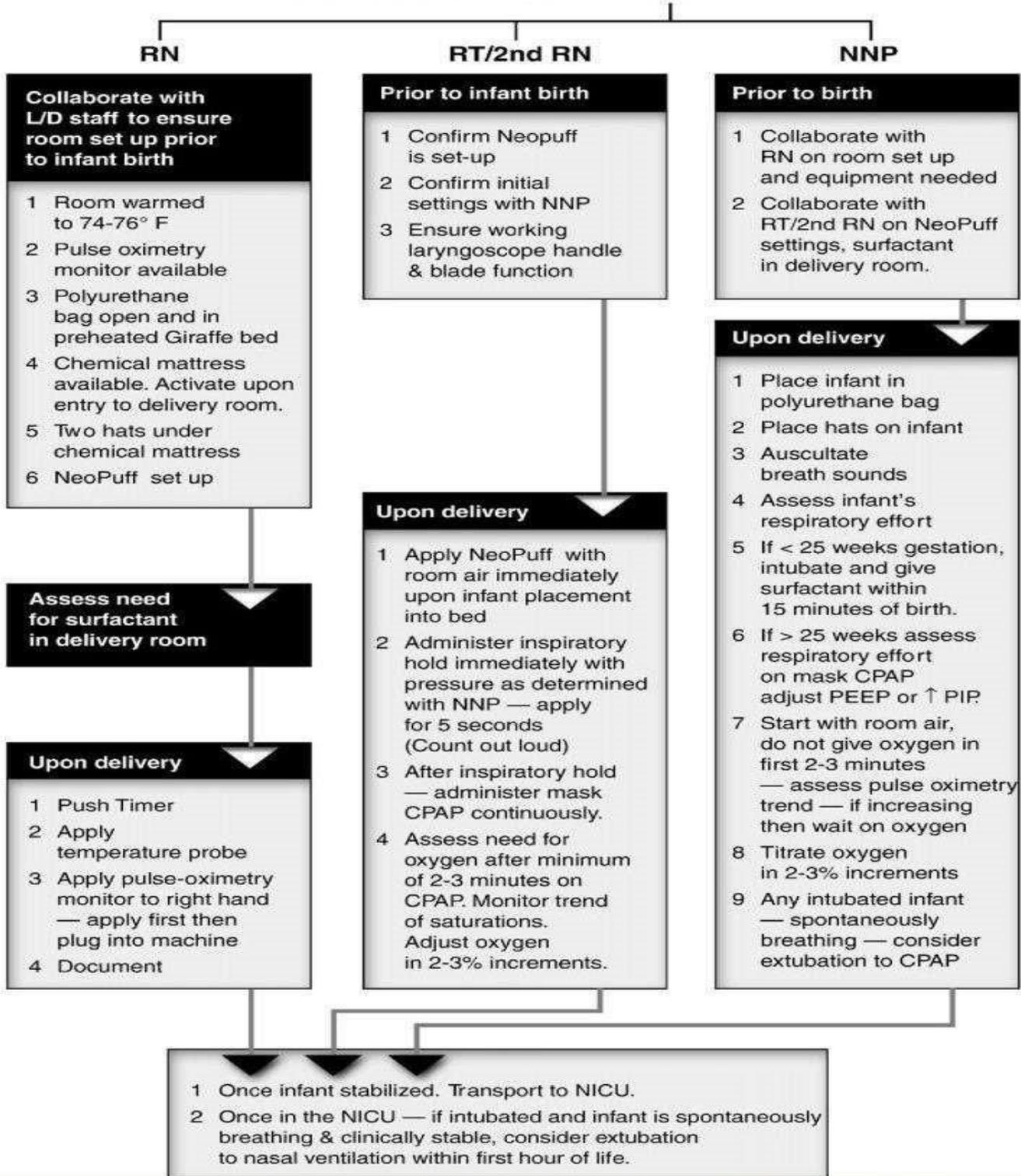
- Preferred vascular access:
- <27+6 weeks or <1000 g - UVC+ UAC within the first 1 hours of birth.
- ≥ 28 weeks – peripheral IV cannula and PICC line or UVC+/-UAC.
- NOTE: <27+6 weeks or <1000 g - If central venous access is getting difficult, please check blood glucose at 45-60 minutes of age. If BGL <46 mg/dl, try peripheral venous access
- Intravenous Fluids: Commence IV fluids at 80 ml/kg/day. Aim to start IV fluids within 45 -60 minutes of birth. Fluids (with the exception of inotropes) can be started through UVC by 45 minutes while waiting for x-ray to confirm the position.

DOCUMENTATION

- Integrated Clinical Notes.
- Neonatal Medication chart.
- Standard Neonatal Observation Chart.

Delivery Room Flowchart

DELIVERY ROOM TEAM



Delivery Room Golden Hour Form

NNP: _____ RN: _____ RT/2nd RN _____

Baby MRN: _____ Gestational age: _____ Birth Time: _____

P R E - B I R T H :

NeoPuff set up prior to delivery yes | no

Laryngoscope/blade checked prior to delivery yes | no

Placed into polyurethane bag yes | no

On chemical mattress yes | no @ _____ a.m./p.m

Two hats applied or plastic barrier & one hat applied at _____ a.m. | p.m.

Inspiratory hold of _____ cm PIP x 5 seconds given yes | no

Started on mask CPAP with _____ cm H2O pressure @ _____ a.m. | p.m.

- Adjusted to _____ cm H2O pressure @ _____ a.m. | p.m.

PPV given yes | no What settings? _____

Oxygen initiated with initial setting of _____ % @ _____ minutes of age

for sats of _____

- Adjusted to _____ % at _____ a.m. | p.m.
- Additional Adjustments to _____ % at _____ a.m. | p.m.
- Percentage of oxygen needed to maintain sats 88-92 _____ %

Intubated at _____ minutes of age with _____ ETT secured @ _____ cm at lip

Surfactant given yes | no @ _____ minutes of age. Dose: _____

Extubated at _____ minutes of age to _____ (resp support needed; ie, CPAP, O2)

Infant's axillary delivery room temperature: _____ °C taken at _____ a.m. | p.m.

T R A N S F E R :

Transferred to the NICU on (PIP/PEEP/O2/mask or ETT) _____

A D M I S S I O N T O N I C U :

Respiratory support settings: _____

Extubated at _____ minutes of age to _____ (resp support needed; ie, CPAP, O2)

Axillary temperature _____ °C taken at _____ a.m. | p.m.

Giraffe bed closed to isolette @ _____ a.m. | p.m.

Polyurethane bag removed at _____ a.m. | p.m. with axillary temp of _____ °C

Axillary Temp 1 hour after polyurethane bag removed _____ °C

Q U E S T I O N S :

What did team do well?

What can the team improve upon?

What follow-up if any is needed?

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