Providence HEALTH CARE	Department: **Respiratory Services**	Date Originated: June 2009 Date Reviewed/Revised: **August 2010**
PROCEDURE	Topic: Neonatal – Neonatal Intubation: Assisting (Respiratory Therapy) Number: B-00-12-12090	Related Links:

APPLICABLE SITES:

St. Paul's Hospital

GENERAL INFORMATION:

The oral route of intubation is the preferred route of intubation for a neonate in an emergency situation. Pre-medication is not typically used prior to intubation of the newborn.

Intubation will be performed by either the pediatrician responsible for NICU, or the anesthetist.

INDICATIONS FOR ENDOTRACHEAL INTUBATION OF THE NEONATE:

1. Impending respiratory failure or fatigue
2. Inability to maintain a patent airway
3. Facilitate the provision of mechanical ventilation
4. Provide a route of administration for medication delivery (i.e. surfactant)

EQUIPMENT:

- Face mask
  - Pre-term or term
- Flow-inflating resuscitator with pressure manometer and oxygen source
- NEOpuff
- Laryngoscope handle
- Laryngoscope blade
  - Miller 00, 0, 1
- Endotracheal tube
  - 2.5, 3.0, 3.5, 4.0
- Stylet
- 8 Fr suction catheter with functioning suction setup
- Pedicap CO_2 detector
- Water soluble lubricant
- Neobar
- Stethoscope
- Tape

PROCEDURE:

1. Assemble related equipment.

2. Attach the appropriately sized laryngoscope blade to the handle and ensure that the light is functioning and adequate. Refer to the following guide for determining the blade:

BLADE SIZE	WEIGHT (grams)	GESTATIONAL AGE (weeks)
Miller 00	< 1000 g	< 28
Miller 0	1000 – 3000 g	28 - 38
Miller 1	> 3000 g	> 38

3. Prepare the appropriately sized endotracheal tube. Refer to the following guide for determining the endotracheal tube:

ETT SIZE	WEIGHT (grams)	GESTATIONAL AGE (weeks)
2.5	< 1000 g	< 28
3.0	1000 – 2000 g	28 – 34
3.5	2000 – 3000 g	34 – 38
3.5/4.0	> 3000 g	> 38

4. Insert the stylet into the endotracheal tube.

   NOTE: Ensure the stylet does not extend beyond the distal end of the endotracheal tube, and that it is secured in a manner that prevents inadvertent advancement of the stylet through the tube.

5. Lubricate the distal end of the endotracheal tube with water-soluble lubricant.

6. Attach the suction catheter to the suction source, and occlude the suction port of the catheter with tape. Ensure the suction is set to an occluded pressure of 60 – 80 mmHg.

7. Attach the appropriately sized mask to the NEOpuff infant resuscitator as per B-00-12-12097. Provide manual ventilation until the physician is ready to attempt intubation.

   NOTE: The appropriate sized mask will cover the mouth, nose, and tip of chin only.

   NOTE: A flow-inflating resuscitator should also be available and set up for use.

   CONSIDERATIONS:

   a) The physician or RN should drain the stomach prior to intubation if the newborn has undergone prolonged manual ventilation and the stomach appears distended.

   b) It may be helpful to place a roll under the infant's shoulder to maintain a slight extension of the neck – be careful not to over distend.

   c) The intubation attempt should last no longer than 20 seconds, and be aborted if the infant displays profound desaturations or bradycardia. Manual ventilation by mask should be provided until physiological stability is restored, and a subsequent

intubation attempt can be made.

8. Hand the prepared endotracheal tube to the physician upon their request.

9. Once the endotracheal tube is in place, remove the stylet and attach the Pedicap CO_2 detector between the endotracheal tube and the flow-inflating resuscitator. Provide manual breaths while assessing the Pedicap for the colour to change from purple to yellow.

   NOTE: Yellow indicates the presence of CO_2.

   NOTE: In certain circumstances a CO_2 detector may fail to cycle despite proper placement of the endotracheal tube in the trachea. This may include:

   - Poor cardiac output
   - Airway obstruction
   - Very low compliance
   - Endotracheal tube advanced too far
   - Extreme reduction in pulmonary blood flow
   - Wet or contaminated detector (will not cycle when wet)

   When a CO_2 detector fails to confirm endotracheal placement of an ETT:

   a) Physician is to visually confirm via direct laryngoscopy that the ETT is through the vocal cords and at the correct insertion depth.

   b) Attempt manual ventilation with higher pressure for 30 seconds.

   c) Summon additional help from the NICU staff.

   d) Initiate chest compressions if HR is less than 60 bpm.

   e) Re-insert the ETT if no improvement after 30 seconds.

10. Auscultate bilaterally for breath sounds.

11. Note the position of the endotracheal tube position at the lip and secure as per B-00-12-12088.

12. Confirm tube position with chest radiograph and adjust endotracheal tube as indicated.

13. Initiate mechanical ventilation via the Babylog ventilator as per Procedure RTD5303.

14. Document procedure and outcome on the Respiratory Flowsheet.