DR. PABLO O. TORRE MEMORIAL HOSPITAL
B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100

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Document Type:	Standard Operating Procedure
Page Number:	1 of 5
Department/Section:	Neonatal Intensive Care Unit
Document Title:	**ASSISTING IN ADMINISTRATION OF PULMONARY SURFACTANT**

PURPOSE:

To outline the principles of surfactant replacement therapy and the safe administration of surfactant in neonates in the Dr. Pablo O. Torre Memorial Hospital-Newborn Intensive Care Unit (NICU)

SCOPE:

Applies to all Neonatal Intensive Care Unit staff of Dr. Pablo O. Torre Memorial Hospital

PERSON RESPONSIBLE:

Pediatric Consultants, Resident Physicians, Registered Nurses

GENERAL GUIDELINES:

1. Patient should meet either one of the qualities prior to the administration of procedure:
   a. premature infant below 32 weeks;
   b. neonates with Respiratory Distress Syndrome (RDS)

2. An order of pulmonary surfactant should be ordered in the chart.

3. It should be ensured that a written consent must be obtained prior to the procedure.

4. Strict aseptic technique should be observed during the procedure.

5. All babies must have heart rate and/or oxygen saturation monitoring.

6. *Storage and handling*: Surfactant is stored in a refrigerator at +2 to +8° C. Surfactant vial should be slowly warmed to room temperature and gently turned upside down in order to obtain a uniform suspension. Do not shake the vial. Use the appropriate sized vial for the prescribed volume and discard unused portion immediately after use. Unopened, unused vials of surfactant suspension that have warmed to room temperature can be returned to refrigerated storage within 24 hours for future use. Do not warm to room temperature and return to refrigerated storage more than once. Protect from light.

7. Ensure and confirm correct position of the endotracheal tube (ETT) via chest x-ray prior to giving the surfactant. Auscultation of the chest for equal bilateral air entry should be confirmed by a NICU fellow or consultant as an additional method of confirming ETT placement.

8. If the neonate is not intubated, an in-out intubation will be performed to administer the surfactant (INSURE technique – Intubation, Surfactant then Extubation).

9. Check and prepare emergency equipment at bedside. If performing intubation, also prepare intubation drugs, laryngoscope with appropriate blade size, appropriate size ETT, and Pedicap/CO2 detector.

10. Pre-oxygenation: the oxygen concentration should be increased to achieve SpO2 ≥ 95% before administration of pulmonary surfactant.

11. The staff nurse shall suction the ETT, and air entry monitoring is required.

12. Equal chest expansion and bilateral air entry should be noted upon ambu bagging to ensure equal delivery of drug into the pulmonary airways.

13. Baseline vital signs shall be taken prior to the procedure.

PROCEDURE:

1. Physician performs assessment to determine the need for administration of pulmonary surfactant.
   - Respiratory assessment - Respiratory rate, Ventilator pressure, tidal volumes
   - Chest assessment - bilateral air entry, breath sounds, chest expansion, secretions
   - Vital signs - Cardiac rate, oxygen saturation
   - Level of consciousness - awake, sedated
   - Chest X-ray - shall be performed after the procedure to check placement of endotracheal tube
2. The nurse secures an informed consent from the parent or relatives of the neonate.
3. The nurse performs hand washing, and then prepares the equipment and supplies needed for the procedure.
4. Pulmonary surfactant is warmed to room temperature for not more than 30 minutes before use.
5. The nurse positions the neonate flat on bed, securing both arms with clean linen.
6. The physician performs hand washing, and wears sterile gloves.
7. The nurse removes the plastic cap from the surfactant vial, and clean the rubber cap with alcohol swab. Then, using a sterile syringe, then physician fills the syringe with the amount of pulmonary surfactant indicated for the neonate.
8. The physician attaches the syringe to the feeding tube, and delivers the surfactant through the feeding tube into the ETT, with its tip located at the mid trachea level. The pulmonary surfactant can be delivered as bolus, and can be given in a maximum of 2 aliquots.
9. After 5 seconds, the infant's ETT can be disconnected from the ventilator and bagged by the nurse or physician at about 60 inflations per minute with the required pressure to facilitate equal delivery of the surfactant into the neonate's airways.
10. The nurse monitors and documents vital signs, and ventilator settings throughout the procedure for 12 hours.

11. The nurse avoids suctioning the endotracheal tube for 12 hours after surfactant administration unless significant airway obstruction occurs.

REFERENCE:

Surfactant replacement therapy for neonates | Better Safer Care. (n.d.). Victorian Agency for Health Information. Retrieved September 5, 2021, from https://www.bettersafercare.vic.gov.au/clinical-guidance/neonatal/surfactant-replacement-therapy-for-neonates

The Royal Children's Hospital Melbourne. (n.d.). *Clinical Guidelines (Nursing) : Surfactant Administration in the NICU*. Retrieved September 5, 2021, from https://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Surfactant_Administration_in_the_NICU/

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