HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Respiratory Care Services		
Document:	Multidisciplinary Policy and Procedure		
Title:	Surfactant Replacement		
Applies To:	Respiratory Therapy Staff and Physicians in NICU		
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1. PURPOSE:

1.1 To provide standardized guidelines on the use and administration of surfactant replacement therapy by a respiratory therapist.

2. DEFINITONS:

2.1 **Surfactant Administration** — has also been shown to be useful in conditions in which surfactant functionhas been altered. These conditions include meconium aspiration, neonatal pneumonia, and pulmonary haemorrhage. Administration of surfactant requires intubation. It is essential to ensure the endotracheal tube is properly positioned, approximately 0.5 to 1 cm above the carina, before delivering surfactant.

2.2 **Surfactant Deficiency** — is almost always associated with the formation of hyaline membranes in the immature lung and the onset of respiratory distress syndrome (RDS) — a major cause of morbidity and mortality in premature infants.

2.3 **Without Surfactant —** alveoli may never inflate or may collapse on expiration and require inordinate force to re — expand on inspiration, leading to the development of RDS. Direct tracheal instillation of surfactant has been shown to reduce mortality and morbidity in infants with RDS.

3. POLICY:

3.1 Respiratory therapist will assist physician during surfactant replacement therapy according to physician's order/ protocol

3.2 Surfactant replacement therapy should not be carried out without a written order from the attending physician or protocol.

3.3 Dosing Guidelines:

- 3.3.1 Survanta — 4m1/kg in 4 aliqouts, repeat dose as needed if responsive.
- 3.3.2 Infasurf — 3m1/kg in 2 aliqouts, repeat dose as needed.

3.4 Frequency of administration:

- 3.4.1 Repeat doses of surfactant are contingent upon the continued diagnosis of RDS. The frequency with which surfactant replacement is performed should depend upon the clinical status of the patient and the indication for performing the procedure.
- 3.4.2 Additional doses of surfactant, given at 6 — 24hours intervals, may be indicated in infants who experience increasing ventilator requirements or whose conditions fail to improve after the initial dose.

4. PROCEDURE:

4.1 Verify physician orders refer to the physician's order sheet.

4.2 Assess the need for surfactant therapy administration

4.3 Check patient files for details of the physician's order or protocol.

4.4 Check two patient's identifiers

4.4.1 Four names for Saudi/ complete name for the Non — Saudi.
4.4.2 Medical Record Number

4.5 Wash hands rigidly with germicidal soap or solution.
4.6 Wear PPE.
4.7 Gather and prepare all necessary materials.
4.8 Determine the total dose of surfactant based on the infant's birth weight. Slowly withdraw the entire contents of the vial into a plastic syringe through a needle.
4.9 Attach the premeasured 5 french end-hole catheter to the syringe.
4.10 Before administering surfactant, assure proper placement and patency of the endotracheal tube.
4.11 At the discretion of the therapist, the endotracheal tube may be suctioned before administering surfactant. The infant should be allowed to stabilize before proceeding with dosing.
4.12 Position the infant appropriately and gently inject the first aliquot through the catheter over 2 - 3 seconds
4.13 Check oxygen saturation of the patient upon administration of surfactant therapy.
4.14 After administration, remove the catheter from the endotracheal tube. Manually ventilate with a handbag with sufficient oxygen to prevent cyanosis, at a rate of 60 breaths per minute, and with sufficient positive pressure to provide adequate air exchange and chest wall excursion.
4.15 Do not suction the infant for 1 hour after dosing unless signs of significant airway obstruction occur.
4.16 After completion of the dosing procedure, resume usual ventilator management and clinical care.
4.17 Clean the area and dispose of all of the used materials and do hand hygiene.
4.18 Wash hands.
4.19 Document patient tolerance to treatment in the respiratory progress sheet

5. MATERIALS AND EQUIPMENT:

5.1 Fr feeding tube or catheter or endotracheal tube connector with delivery port
5.2 Sterile gloves
5.3 Sterile blade
5.4 Syringes
5.5 ETT for measuring depth (optional)
5.6 Sterile tray/ kidney basin

6. RESPONSIBILITIES:

6.1 Physicians in NICU
6.2 Respiratory Therapist

7. APPENDICES:

7.1 Delivery Techniques of Surfactant Replacement Therapy
7.2 Flow Chart: Work Flow of Surfactant Replacement Therapy

8. REFERENCES:

8.1 http://rc.rcjournal.cornicontent/respcare/58/2/367.full.pdf
8.2 Egan's Fundamentals of Respiratory Care 10th edition, 2015.
8.3 http://www.survanta.com
8.4 https://www.ncbi.n l m.n ih.gov/pmc/articles/PM C3743150/
8.5 Directorate of Health Affairs in Taif, King Faisal Medical Complex, 2018.

9. APPROVALS:

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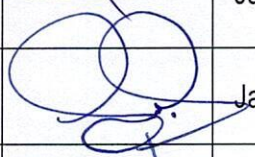
Reviewed by:	Mr. Abdulelah Ayed Al Mutairi	QM&PS Director		January 14, 2025
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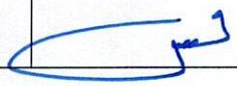
Approved by:	Mr. Fahad Hezam AlShammari	Hospital Director		January 22, 2025

Appendix 7.1 Delivery Techniques of Surfactant Replacement Therapy

TECHNIQUES	DETAILS
Insure (Intubation, Surfactant, Extubation)	This technique features early surfactant replacement therapy with prompt extubation to nasal CPAP. The technique is associated with less need for mechanical ventilation, lower incidence of BPD, and fewer air leak syndromes when compared with later, selective surfactant replacement therapy, mechanical ventilation, and extubation from lower ventilator settings.
Selective surfactant replacement therapy with mechanical ventilation followed by extubation from lower ventilator settings,	This technique is initiated upon clinical evidence of RDS, such as radiological findings, and increased work of breathing.

Appendix 7.2 Flow Chart: Work Flow of Surfactant Replacement Therapy