HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Pediatric Intensive Care Unit (PICU)		
Document:	Departmental Policy and Procedure		
Title:	Chest Physiotherapy in Pediatric Intensive Care Unit		
Applies To:	All Pediatric Staff		
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1. PURPOSE:

1.1 To mobilize and eliminate secretions.
1.2 To develop more efficient patterns of breathing.
1.3 To improve and promote patient tissue oxygenation and eliminate lung complications.

2. DEFINITIONS:

2.1 **Chest Physiotherapy (CPT)** – usually refers to the use of postural drainage in combination with adjunctive techniques that are thought to enhance the clearance of mucus from the airway. These techniques include manual percussion, vibration and squeezing of the chest; cough; forceful expiration and breathing exercises.

3. POLICY:

3.1 The chest physiotherapy (CPT) is carried out by Competent Staff Nurse or Respiratory Therapist (RT). Chest physiotherapy includes postural drainage, chest percussion, vibration, coughing and deep breathing exercises. Chest Physiotherapy frequency varies from patient's condition and as ordered by the physician.
3.2 Suction machine and oxygen should be available at patient bedside during the procedure of chest physiotherapy.
3.3 Patient vital signs should be obtained before chest physiotherapy to prevent respiratory distress and cardiac deterioration during the procedure.
3.4 Standard precaution is to be observed during the procedure.

4. PROCEDURE:

4.1 Identify patient correctly using two identifiers (4 names for Saudi/ complete name for Non – Saudi and Medical Record Number).
4.2 Assess the patient for the following:
  4.2.1 Medical history: Certain conditions such as increased ICP, spinal cord injuries and abdominal aneurysm resection, contraindicated the positional change and postural drainage. Thoracic trauma and chest surgeries also contraindicated percussion and vibration.
  4.2.2 Last meal taken or frequency of feeding. Chest physiotherapy must be performed before meals and at least an hour after meal because bronchial hygiene is tailored with suctioning and thus risk for aspiration is imminent.
4.3 Perform hand hygiene to prevent transmission of infection.
4.4 Explain the purpose of chest physiotherapy to the patient and/or parents.
4.5 Connect the patient to cardiac and pulse Oximetry throughout the procedure.
4.6 Auscultate patient's lungs to locate the site of diminish breath sounds.
4.7 Administer bronchodilators if ordered before CPT to enhance airway clearance.
4.8 Prepare oxygen and administer when needed.
4.9 Assist patient to fowler's position if not contraindicated during the procedure.

4.10 Performing chest physiotherapy – percussion.

4.10.1 Utilized a palm cup percussor, nipple percussor and infant or Pediatric mask with bag connection occluded with cotton may be used as modified modality in providing percussion and vibration effect to the patient.

4.10.2 Cupped hand/mask tends to trap a cushion of air, which softens the blow while striking, and the air column inside the cupped hand causes effective dislodgement of the secretions in the underlying bronchus.

4.10.2.1 Cupping is never done on bare skin or performed over surgical incisions, below the ribs, or over the spine or breasts because of the danger of tissue damage.

4.10.3 Perform percussion on the affected lobes, don't percuss over the spine or the sternum.

4.10.3.1 In generalized disease, drainage usually begins with lower lobes. Continue with the middle lobes and ends with the upper lobes.

4.10.3.2 In localized disease, drainage begins with the affected lobes and then proceeds to the other lobes.

4.10.3.3 Percussed for 30 – 60 seconds. If the patient has tenacious – secretions the area must be percussed for 3 – 5 minutes several times per day.

4.10.4 Perform vibration on the affected lobes:

4.10.4.1 Place one hand on top of the other or place one hand on each side of the rib cage.

4.10.4.2 Tense the muscles of the hands while applying moderate pressure downward and vibrate arms and hands.

4.10.4.3 Relieve pressure on the thorax as the patient inhales.

4.10.4.4 Encourage the patient to cough, using abdominal muscles, after three or four vibrations.

4.10.5 Repeat the percussion and vibration cycle according to the patient's tolerance and clinical response.

4.10.6 Perform chest physiotherapy on mechanically ventilated patient who are unable to clear secretions effectively require ETT suctioning and may benefit from CPT to mobilized secretions and prevent airway obstruction and repeat as required.

4.10.6.1 Reduce airway resistance, reduce the work of breathing, improve gas exchange, facilitate early weaning from ventilator, prevent and resolved respiratory complication, re – expand collapsed lobes and hasten recovery are main goals of CPT for patient with artificial airway.

4.11 Allow the patient to rest for several times.

4.12 Listen with stethoscope for changes in breath sounds.

4.13 Change the position every 2 hours. Chest physiotherapy as well as appropriate and regular change of position can considerably reduce the rate of pulmonary collapse in Pediatric patients.

4.14 Instruct the patient to perform deep breathing exercises, such as having patient blow soap bubbles, blow through a straw or blow cotton balls or tissues across the table if the patient can able to understand and follow instructions.

4.15 Provide oral hygiene after oral suctioning.

4.16 Notify any abnormality to the Physician.

4.17 Provide health education to family and patient the importance of CPT.

4.18 Document in the Nurses notes characteristics of secretions (colour, amount and odor), nursing care rendered, all treatment given, patient's condition and tolerance to procedure.

5. MATERIAL AND EQUIPMENT:

5.1 Stethoscope

5.2 Pillows

5.3 Adjustable Bed

5.4 Emesis Basin

5.5 Facial Tissues

5.6 Suction Equipment

5.7 Infant or Pediatric Mask with Bag Connector

5.8 Equipment for Oral Care
5.9 Trash Bag
5.10 Supplemental Oxygen

6. RESPONSIBILITIES:

6.1 Physician
6.2 Nurses
6.3 Respiratory Therapist

7. APPENDICES:

N/A

8. REFERENCES:

8.1 Ministry of Health, General Directorate of Nursing, Manual of Nursing Policy and Procedure, 2nd edition, 2011.
8.2 Audrey Berman, Shirlee Snyder, Kozier and Erb's Fundamentals of Nursing Concept, Process and Practice, Pearson Education, 9th edition,2012.
8.3 Chest physiotherapy, Easy Pediatrics, 2015. Retrieved from http://www.easypeds.com/2012/08/chest-physiotherapy-neonates.html.

9. APPROVALS:

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