



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

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| Department: | Pediatric Intensive Care Unit (PICU) | | |
| Document: | Multidisciplinary Policy and Procedure | | |
| Title: | Weaning Patient From Mechanical Ventilator | | |
| Applies To: | All Pediatric Intensive Care Unit Staff and Respiratory Therapists | | |
| Preparation Date: | January 12, 2025 | Index No: | PICU-MPP-011 |
| Approval Date: | January 26, 2025 | Version : | 2 |
| Effective Date: | February 26, 2025 | Replacement No.: | PICU-MPP-011 (1) |
| Review Date: | February 26, 2028 | No. of Pages: | 3 |

1. PURPOSE:

- 1.1 To identify patients who are capable of maintaining respiration without use of mechanical ventilators.
- 1.2 To re – establish normal breathing patterns for patients on mechanical ventilator.
- 1.3 To facilitate successful extubation.
- 1.4 To prevent complication associated with mechanical ventilation.

2. DEFINITIONS:

- 2.1 **Weaning** – it is the process of decreasing the amount of support that the patient receives from the mechanical ventilator, so the patient assumes a greater proportion of the ventilator effort. Weaning may involve either an immediate shift from full ventilator support to a period of breathing without assistance from the ventilator or a gradual reduction in the amount of ventilator support. Weaning from mechanical ventilation begins from the moment ventilation is commenced. When FiO₂ requirement is down to 40%, improvement in secretions and chest X – ray, improving clinical conditions or primary pathology, muscle relaxant drip is stopped and sedation slowly weaned. The patient should be assessed daily for readiness to wean.

3. POLICY:

- 3.1 Weaning of patient from mechanical ventilator will be carried out with doctor's order by the Respiratory Therapist and assisted by nurse with skill and knowledge in assisting the procedure and certified with life support training: BLS and PALS, competent in identifying cardiac compromised and arrhythmias.
- 3.2 The criteria of mechanical ventilation weaning should be achieved before the procedure to ensure the success of weaning. The patient should be hemodynamically stable with acceptable blood gas while on ventilator. Patient must be assessed for physical and psychological stability to ensure readiness for weaning. Standard precaution must be observed throughout the procedure.

4. PROCEDURE:

- 4.1 Perform hand hygiene and use personal protective equipment to prevent spread of microorganism.
- 4.2 Identify the patient correctly by using two patient identifiers (four names for Saudi and complete name for Non – Saudi and the Medical Record Number).
- 4.3 Explain procedure to reduce anxiety and facilitate cooperation to patients and parents.
- 4.4 Anticipate extubation failure in all patients and parents should be made aware earlier by the physician. Reinforce understanding whenever necessary.
- 4.5 Connect the patient to cardiorespiratory monitor.
- 4.6 Assess the patient to ensure that he is capable to maintain spontaneous respirations.
 - 4.6.1 Monitor heart rate, lung expansion, breath sounds and oxygen saturation.
 - 4.6.2 Assess for cough and gag reflex.
 - 4.6.3 Assess for other signs of adequate muscle strength.
- 4.7 Assess for other factors that may cause respiratory insufficiency:
 - 4.7.1 Acid base abnormality

- 4.7.2 Decreased level of consciousness
- 4.7.3 Electrolyte abnormality
- 4.7.4 Abnormal fluid balance
- 4.7.5 Infection
- 4.8 Ask the Physician to review the chest x – ray result.
- 4.9 Check the physician order for the weaning procedure.
 - 4.9.1 Verify order on gradual reduction of ventilator support to intermittent mandatory ventilation (IMV) or synchronized IMV (SIMV) or to pressure support ventilation (PSV)/ continuous positive airway pressure (CPAP).
 - 4.9.2 Make certain specified time on the said ventilator changes is written.
- 4.10 Perform good chest physiotherapy and suctioning every 4 hours and as necessary.
- 4.11 Monitor blood gas analysis as ordered.
- 4.12 Administer corticosteroid as ordered to decrease laryngeal edema.
- 4.13 Keep the patient NPO as ordered to prevent aspiration.
- 4.14 Start intravenous fluid as ordered by the Physician.
- 4.15 Withhold the infusion and PRN sedation as ordered by the Physician.
- 4.16 Ensure ventilator mode and parameters adjusted as ordered by Physician.
- 4.17 Monitor vital signs hourly and assess the patient for any signs of weaning intolerance.
- 4.18 Obtain blood gas sample before extubation as ordered by the Physician.
- 4.19 Obtain order for extubation.
- 4.20 Explain the procedure to the patient/ parents
- 4.21 Prepare necessary equipment
 - 4.21.1 Suction and suction catheter.
 - 4.21.2 Nebulizer face mask.
 - 4.21.3 Nebulization treatment as ordered by the Physician.
 - 4.21.4 Intubation set for possible reintubation.
- 4.22 Place the patient in sitting or Semi – Fowler's position unless contraindicated.
- 4.23 Wear gloves. Loosen the endotracheal tie/ tape.
- 4.24 Suction endotracheal tube, deflate cuff if using a cuffed tube and Oropharyngeal airway.
- 4.25 Decompress the stomach for any gastric residual to prevent aspiration during stimulation.
- 4.26 Assist in extubation of the patient. At peak inspiration, pull out the tube out in the direction of the curve (out and downward). To prevent traumatic tube removal.
- 4.27 Administer nebulization treatment as ordered by the Physician.
- 4.28 Administer oxygen therapy as ordered. Try to wean from oxygen support gradually according to the acceptable oxygen saturation or as ordered by the Physician.
- 4.29 Ask the patient to cough and suction the patient airway to remove secretions.
- 4.30 Evaluate for any signs of airway obstruction, stridor, or difficult breathing. If the patient develops any of the above problems, prepare the patient for possible re – intubation.
- 4.31 Close end of ventilator tubing with sterile gauze. Ventilator must be standby at least 24 hours post extubation.
- 4.32 Repeat blood gas one hour after the extubation or as ordered by the Physician.
- 4.33 Document in the Nurses' notes the time of extubation, all the treatment given, nursing care rendered, and patients' tolerance to procedure.

5. MATERIAL AND EQUIPMENT:

- 5.1 Heated Humidified Oxygen Source with Wide Bore Tubing.
- 5.2 T – Piece Adaptor
- 5.3 Suction Supplies/ Equipment
- 5.4 Arterial Blood Gas Sampling Supplies
- 5.5 Resuscitation Set
- 5.6 Nebulization Set
- 5.7 Ambu Bag and Mask
- 5.8 Oxygen Delivery System

5.9 Gauze

6. RESPONSIBILITIES:

- 6.1 Physician
- 6.2 Nurses
- 6.3 Respiratory Therapist





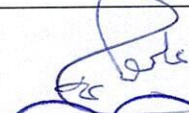



7. APPENDICES:

N/A

8 REFERENCES:

- 8.1 Ministry of Health, Manual of Nursing Policy and Procedure, General Directorate of Nursing, 2nd edition, 2011.
- 8.2 Pediatric Intensive Care – Clinical Practice Guideline, Pediatric Ventilation Guidelines, 2010. MOH-Pediatrics Network – Ventilation Guideline – PICU.
- 8.3 Janice L Hinkle, Kerry Cheever, Brunner and Siddhartha's Textbook of Medical Surgical Nursing, Lippincott Williams and Wilkins, Philadelphia, 13th edition, 2014.

9. APPROVALS:

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