**SARASOTA MEMORIAL HOSPITAL**  
**NURSING DEPARTMENT POLICY**

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<td>MECHANICAL VENTILATION WEANING AND EXTUBATION OF THE POST OPEN HEART SURGICAL PATIENT</td>
<td>126.480 (special care) 135.123 (respiratory care)</td>
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**Job Title Reviewer:** Director, OHR

**PURPOSE:** To establish a protocol driven clinical pathway for the weaning and extubation of mechanically ventilated post-operative Open Heart Intensive Care patients.

**POLICY STATEMENT:** In the absence of specific orders, post open heart surgery patients may be weaned by the Respiratory Therapist (in conjunction with the RN) from mechanical ventilatory support and extubated based on the pulmonary, hemodynamic, and neurological criteria described below.

**EXCEPTIONS:** As specified by physician.

**DEFINITIONS:**  
- PET CO₂ - Measurement of partial pressure of exhaled (end-tidal) CO₂.

**PROCEDURE(S):** WEANING FROM MECHANICAL VENTILATION:

1. Upon return of the patient’s spontaneous respirations and normalization of core body temperature, weaning of mechanical ventilatory support may be initiated by the Respiratory Therapist, providing the patient meets the following criteria:
   a. \( \text{PaO}_2 \geq 75 \text{ mmHg} \) on 50% FIO₂ and +5-8 cm PEEP  
b. \( \text{PaCO}_2 \) within patient’s normal limits.  
c. \( \text{pH} > 7.30 \)  
d. Mean arterial pressure (MAP) \( \geq 65 \text{ mmHg} \)  
e. Systolic BP \( \geq 90 \text{ mmHg} \)  
f. Cardiac Index (CI) \( > 1.5-2.0 \)  
g. Minimal chest tube drainage

2. FIO₂ may be weaned in increments if \( \text{SaO}_2 \) via pulse oximetry is \( \geq 92\% \).
3. ABG’s should be obtained upon initial placement of the patient on mechanical ventilation, prior to extubation, and with post extubation, ABG’s may be obtained prn as patient’s condition warrants.

4. Pressure support ventilation (PSV) of 5-10 cm H₂O may be used in order to assist with the weaning process.

5. Patient may be weaned, as tolerated, to IMV 2/min., PEEP +5 cmH₂O, and FIO₂ 40%.

EXTUBATION:

1. Prior to extubation, the RT will confer with the RN in charge of specific patient. A written physician order will be obtained and the patient will meet the following criteria:

   a. Pulmonary Parameters:
      1) Spontaneous tidal volume (VT) > 5 ml/kg
      2) Vital capacity (VC) 10 ml/kg
      3) Negative inspiratory force (NIF) of -25 cmH₂O or greater
      4) Adequate arterial blood gases, including a PaO₂ > 75 mmHg on 50% FIO₂ and 5 cmH₂O PEEP, and pH > 7.30
      5) Spontaneous respiratory rate < 30/minute

   b. Hemodynamic Parameters:
      1) MAP ≥ 65 mmHg
      2) Systolic BP ≥ 90 mmHg
      3) CI > 1.5-2.0
      4) Stable SvO₂ rating (downward trend of no greater than 10% in normothermic patient)

   c. Neurologic Status:
      1) Return of the patient’s reflexes and muscle tone; must be able to swallow, cough, gag.
      2) Exhibit ability to follow simple commands such as: hand squeeze, lift head from pillow, open eyes.

2. In the event that the patient does not meet the above criteria, the physician must be informed and a specific order for weaning and/or extubation must be obtained and documented in the patient’s medical record.

RESPONSIBILITY: It will be responsibility of the Respiratory Care Team Leader, Director and the Respiratory Therapist and RN working with the patient to be aware of, and adhere to, this department policy.


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APPROVALS:

Signatures indicate approval of the new or reviewed/revised department policy. Date

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| Respiratory Management | 12/04 |

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