

**TSICU/BICU Routine Ventilator Management Protocol**

**INITIATE VENTILATOR SET UP:**

- On arrival place patient on APV/SIMV and initiate Pulse Oximetry with the following settings:
- Initial Tidal Volume is 7milliliters per kilogram of Ideal Body Weight (IBW).
- Initial Ventilator Rate 14
- FiO<sub>2</sub> – 100% initially, Weaning FiO<sub>2</sub> to 40% in 10-15 minute increments, while monitoring the Pulse Oximeter. Auto-wean FiO<sub>2</sub> to maintain SPO<sub>2</sub> greater than or equal to 88%.
- PEEP of 5cmH<sub>2</sub>O \*May increase PEEP if the patient cannot be weaned to FiO<sub>2</sub> goal and has a systolic blood pressure that is greater than 80mmHg. Follow the FiO<sub>2</sub>/ PEEP scale\*
- Set initial PS to 10cmH<sub>2</sub>O
- I:E 1:1.0-1:3.0

**ARTERIAL OXYGENATION**

**GOAL: PaO<sub>2</sub> 55 – 80 mm Hg or SpO<sub>2</sub> >88%**

**Low PEEP/HIGH FiO<sub>2</sub> Scale**

FiO <sub>2</sub>	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0
PEEP	5	5	8	8	10	10	10	12	14	14	14	16	18	18-24

**High PEEP/Low FiO<sub>2</sub> Scale**

FiO <sub>2</sub>	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5-0.8	0.8	0.9	1.0	1.0
PEEP	5	8	10	12	14	14	16	16	18	20	22	22	22	24

**ABG will be drawn one hour after mechanical ventilation has been initiated**

**A. Respiratory Acidosis Management:**

If pH 7.15 – 7.30:

Increase set RR until pH greater than 7.30 or PaCO<sub>2</sub> less than 25 (**Maximum** Set RR = 30)

If pH less than 7.15:

Increase set RR (maximum 30).

If set RR has been increased to 30 and pH 7.15; tidal volume may be increased in 1 ml/ kg increments (not to exceed 8ml/kg IBW) until pH greater than 7.15

- B. Respiratory Alkalosis Management: (pH greater than 7.45):  
Decrease set RR (minimum set rate of 6)  
Decrease tidal volume by 1ml/kg IBW (no lower than 5 ml/kg)

**ABG will be drawn 30 minutes after any Minute Ventilation change.**

**\*If the ABG has critical values, notify the ordering physician\***

**1. MINIMUM QShift SBTs will be performed between the hours of 0900-1000 and 2000-2100. For possible liberation from the vent (All of the following conditions must be met)**

- a. FiO<sub>2</sub> less than or equal to 40%
- b. PEEP less than or equal to 5 cmH<sub>2</sub>O
- c. Intact airway reflexes (Cough or gag)
- d. Hemodynamic stability
- e. Adequate level of consciousness

**2. Trial of spontaneous breathing: Reference SAT/SBT chart (see below) to make sure all parameters are met.**

**PERFORM CUFF LEAK TEST PRIOR TO PLACING PATIENT ON A SBT.** If the patient is negative for a cuff leak, notify the ordering physician and document accordingly.

CPAP 5 with PS of 5-10 cmH<sub>2</sub>O for **20-30** minutes

\*If the patient is on ASV, lower the %MV to 40%. If the patient is not triggering spontaneous breaths, lower the %MV to 25% (Do not lower beyond 25% MV. Closely monitor patient). If the patient is spontaneously breathing and the PS that is being delivered via the lowered %MV is less than or equal to 10 cmH<sub>2</sub>O, the patient is considered to be performing an SBT.

**3. Trial will be stopped if ANY of the following conditions are observed:**

- a. RR > 35 breath/minute for greater than **5** minutes
  - b. SaO<sub>2</sub> < 90%
  - c. Sustained increase or decrease in HR by greater than or equal to 20% of baseline.
  - d. Systolic BP > 180 mmHg or < 90 mmHg
  - e. If the patient is performing a SBT on ASV, discontinue if the patient is not meeting the target MV goal with the lowered %MV. This is indicative of apnea or inability to generate large enough VTs to maintain adequate MV.
- If any of the above conditions are observed the trial is considered unsuccessful, place patient on previous ventilator settings. **\*Notify ordering physician and document accordingly.**
  - If any of the above conditions are not observed, the trial is considered successful; obtain weaning parameters. **\*Notify ordering physician and document accordingly.**

#### **Weaning Parameters:**

- NIF better than -20cmH<sub>2</sub>O
- Spontaneous tidal volume > 5mL/kg IBW
- Spontaneous respiratory rate < 25 breaths per minute
- Spontaneous minute volume < 10 L per minute
- Vital capacity >10mL/kg IBW

- RSBI less than or equal to 90 (Respiratory Rate / Tidal Volume)

**4. Physician will be notified after the spontaneous breathing trial and a decision for extubation will be discussed.**

**NOTE:** If the trial is stopped, the patient will be reassessed for weaning tolerance at the next scheduled SBT time. A SBT may be performed at any time in ADDITION to the scheduled trials if the physician deems the patient ready.