

Home Ventilator Titration Clinical Pathway

Evidence Based Outcome Center

EXCLUSION CRITERIA

- Respiratory Distress

Inclusion Criteria
 Ventilator dependent home based patients with at least one of the following:

- Increase in atelectasis
- Increase in trach secretions
- Increase in trach leaking
- Increase in O₂

Manage OFF-PATHWAY
 Call Pulmonology and obtain CBG

• Patient in distress
 • SpO₂ < 85%
 • ETCO₂ > 60

OR

• Non-responsive to ventilator changes?

Process to Optimize Ventilation	
<p>EtCO₂ < 35 mmHg</p> <ol style="list-style-type: none"> Adjust tidal volume or peak pressure to achieve 6-8 ml/ kg on exhaled volume. If patient spontaneously breathing, decrease rate by 5 / min Q30 (do not decrease below 5/min). Decrease Pressure support by 1cmH₂O Q1 until off. If Work of Breathing within normal limits, decrease PEEP by 1cm H₂O Q1 until a PEEP of 4cmH₂O Check CBG and call Pulmonology 	<p>EtCO₂ > 45 mmHg</p> <ol style="list-style-type: none"> Increase set tidal volume to 8kg If patient not spontaneously breathing or "riding the vent" increase respiratory rate setting by 5/min Q30 within normal range Increase pressure support by 1cmHO Q1 until it is equal to peak inspiratory pressure. (PIP) Check CBG and call Pulmonology
Process to Optimize Oxygenation	
<p>SpO₂ < 92%</p> <ol style="list-style-type: none"> Adjust FiO₂ by 10% up to 60% Increase PEEP by 1cmH₂O Q15 until : <ul style="list-style-type: none"> PEEP setting = 10cmH₂O Optimal SpO₂ ETCO₂ rises above 45mmHg PIP exceeds 30cmH₂O Check CBG and contact Pulmonology 	<p>SpO₂ 100%</p> <ol style="list-style-type: none"> Decrease FiO₂ by 10% Q15 until less than 60% Check Pressure volume curve, if indicated (inflection point), decrease PEEP Q1 until PEEP 4
Process to Optimize Patient/Vent Synchrony	
<ol style="list-style-type: none"> Check Airway patency adjust cuff leak to maintain 10-20% leak <ul style="list-style-type: none"> If leak is greater than 20% use T-com instead of ETCO₂ and call pulmonology Adjust flow sensitivity Increase Pressure support (by 1cmH₂O Q30 min up to set peak inspiratory pressure. 	

No changes indicated
 Reassess patient Q2Hours.

RT Order:

- CBG
- VBG **OR** ABG PRN

Current Ventilator settings reaching all optimal parameters? ¹

NO → [Process to Optimize Ventilation/Oxygenation/Synchrony]

YES → Patient off positive pressure ventilation?

Reassess patient Q2Hours.

NO → [Decision: Patient off positive pressure ventilation?]

YES → Call physician for order for capped trach assessment

DISCHARGE CRITERIA

- At least 4 hours of total sleep time
- Vent setting within optimal range for at least 30 minutes during sleep
- Morning ABG / VBG / CBG within normal baseline ranges for the patient

Consult Pulmonology
 Manage OFF-PATHWAY

1 Optimized parameters

- ETCO₂=35-45mmHg
- SpO₂ greater than 93%
- Comfortable work of Breathing
- Cuff leak = at least 10-20% leak if inflated.
- Vt= 6-8ml / kg
- Normal RR =

Infant	30 to 60
Toddler	24 to 40
Preschooler	22 to 34
School-age child	18 to 30
Adolescent	12 to 16

Discharge

ALERT!

Changes must be documented in Ventilator Monitoring Comments section of EMR and include the reason for the change.