Purpose

How to utilize the Hamilton T1 ventilator to provide Continuous Positive Pressure Ventilation.

Absolute contraindications
- Respiratory arrest
- Airway obstruction
- Hemodynamic instability, SBP <90 or MAP<65
- Trauma

Relative contraindications
- Altered mental status
- Acute myocardial infarction
- Persistent nausea/vomiting
- Inability to clear secretions

Procedure

Initial Settings:
PEEP S, FiO2 50%

<table>
<thead>
<tr>
<th>Turn on ventilator</th>
<th>Check battery status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilize adult ventilator tubing, connect tubing and flow sensor to ventilator</td>
<td>Preop checks – Tightness &amp; Flow Sensor</td>
</tr>
<tr>
<td>Connect to high pressure oxygen source</td>
<td>Select CPAP or NIV</td>
</tr>
<tr>
<td>Pinsp set to 0</td>
<td>PEEP set at 5</td>
</tr>
<tr>
<td>FiO2 set at 50%</td>
<td>Flow Trigger at 5.0 l/min</td>
</tr>
<tr>
<td>Click confirm</td>
<td>Choose appropriate size mask</td>
</tr>
<tr>
<td>If mask has clear elbow in place. Replace elbow on mask with blue elbow</td>
<td>Utilize ETCO2 monitoring, place the ETT style sensor between flow sensor and mask</td>
</tr>
<tr>
<td>Verbally prepare the patient</td>
<td>Select “Start Ventilation”</td>
</tr>
</tbody>
</table>
G16. Continuous Positive Airway Pressure

| Hold the mask up to the patient's face – again verbal reassurance is key |
| Secure the mask to the patient's face once the patient feels comfortable |
| Check for leaks around the mask |
| Fix any leaks, consider tightening or readjusting the mask |
| You may need to adjust your alarm setting for tidal volume, as it will likely be high |

Monitoring

Alarms:
- Under “alarms” you can click AUTO and it will automatically set your alarms based off current settings.
- Under the “monitoring” tab you can see many different values.

Abnormal vitals and/or patient uncomfortable:
- Titrating all settings in conjunction with one another is key; consider 2 cmH2O and 10 %
- Titrate PEEP and FiO2 to maintain SpO2 per A6. Initial Patient Protocol
- Consider NPPV or intubation if there are no signs of improvement and PEEP is at 10 cmH2O or higher.

Other considerations

Goals:
- Decrease respiratory distress
- Improve vital signs (>SpO2 and/or <Respiratory Rate)
- Improve patient comfort

Key documentation points:
- Respiratory distress score (1-10) before and after NPPV application
- Vital signs before and after CPAP application (to include SpO2, BP, RR, and EtCO2)
- Initial and ending settings

Order of Devices:
Other

- IPAP on Hamilton T1 is the PInsp + the PEEP (For example: PInsp is 12 + PEEP is 6= settings would be 18/6)
- Neonatal Circuit should be utilized in patients that are less than or equal to 15 kg.
- Adult circuits should be utilized for patients that are greater than 15 kg.
- HEPA Filters are 99.97% effective.

- To complete a nebulizer treatment, connect the nebulize tubing directly to the side of the ventilator (yellow port above where the flow sensor connects) and press this button. This will allow the ventilator to administer the nebulizer treatment only during exhalation – reducing waste.

- By clicking this button, it will take the ventilator to 100% FiO2 for 2 minutes.
- The bottom graph can be changed by touching the graph and choosing another option. It is recommended to monitor the Flow L/MIN which can be found under graphics.