## CPAP Device: Why change?

<table>
<thead>
<tr>
<th>OLD: Oxy-PEEP</th>
<th>New: Flow-Safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not allow Meds via nebulizer</td>
<td>Easier to repeat NTG</td>
</tr>
<tr>
<td>PEEP measurement</td>
<td>Nebulizer can be used</td>
</tr>
<tr>
<td>Shortages/recalls</td>
<td>Actual PEEP measured</td>
</tr>
<tr>
<td>Packaged in lg box</td>
<td>Leaks detected</td>
</tr>
<tr>
<td>Headstrap may be uncomfortable &amp; challenging to use</td>
<td>Smaller package</td>
</tr>
<tr>
<td>3 settings</td>
<td>Comfortable headstrap</td>
</tr>
<tr>
<td>1 setting</td>
<td></td>
</tr>
</tbody>
</table>
Just a reminder...how it works

- CPAP works by “splinting” the lungs with a constant pressure of air
- This reduces work of breathing
- In CHF, forces excess fluid out of alveoli & interstitial space back into the vasculature
- Also decreases venous return to the heart thereby lessening its workload
- Bottom line: Takes patients close to needing intubation & rapidly reverses their condition avoiding complications & death
CPAP

- No Change
  - SOP
  - Indications
  - Contraindications

- Change
  - Device
  - Procedural steps
CPAP

**Indications**
- Heart Failure - acute
- Asthma/COPD - severe
- Drowning - near
- Flail chest (w/o pneumothorax)

**Contraindications**
- Airway
  - Unable to obtain adequate seal
  - Facial anomalies/injury
- Breathing
  - Inadequate resp rate/effect
  - Pneumothorax
  - Penetrating chest trauma
- Circulation
  - SBP <90 mmHg / DBP <60
- Disability - Consciousness
  - Decreased LOC
  - Unable to follow commands
- GI
  - Aspiration risk
  - Gastric distention
  - Vomiting
- Pregnant
THIS IS HOW CPAP FEELS TO THE PATIENT!!
FLOW SAFE ® CPAP

- CPAP Valve
- Pop off Valve
- Forehead adjustment
- Head adjustment straps
- Quick Release Clip
- O2 Tubing
- PEEP Manometer
- Head adjustment straps
OXYGEN FLOW RATE = PEEP

- 15 L = approx 3-4 cm H₂O PEEP
- 20 L = approx 6-7 cm H₂O PEEP
- 25 L = approx 8.5-10 cm H₂O PEEP
<table>
<thead>
<tr>
<th><strong>TITRATE PEEP TO PATIENT’S WORK OF BREATHING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OLD PROCEDURE</strong></td>
</tr>
<tr>
<td>o PEEP started at 10cm H2O</td>
</tr>
<tr>
<td>o Not titrated to work of breathing</td>
</tr>
<tr>
<td><strong>NEW PROCEDURE</strong></td>
</tr>
<tr>
<td>o <strong>START AT 15 L WHICH EQUALS 3-4 cm H2O PEEP</strong></td>
</tr>
<tr>
<td>o Titrate up to patient response (decreased work of breathing)</td>
</tr>
<tr>
<td>o Maximum PEEP 25 L or 8.5 - 10 cm H2O PEEP</td>
</tr>
</tbody>
</table>
Flow-Safe® CPAP --- PEEP

- Pressure manometer between CPAP valve & face mask measures actual PEEP being delivered
- Leak in system (e.g., lack of tight face-mask seal) will affect PEEP
What is the PEEP?
What is the PEEP?
Assess PEEP as patient exhales
EXPLAIN PROCEDURE TO PATIENT

- MAY REQUIRE EXTENSIVE COACHING.....
- If they are anxious, a little Versed may help.
- See appropriate SOP
OPEN PACKAGE

- SECURELY CONNECT MASK TO VALVE/TUBING
OPEN PACKAGE

- Yellow label displays PEEP settings
O2 Flow

- Attach CPAP O2 tubing to regulator/flow-meter
- Begin O2 flow @ 15 L
- If needed, slowly increase O2 to desired O2 sat/PEEP (do not exceed 30 LPM)
UNDO 1 OR 2 OF THE QUICK RELEASE CLIP(S)
Hold, or have pt. hold mask snuggly to face...
Good face-mask seal is critical
Tighten head straps using Velcro tabs
Adjust forehead pad flat on forehead
Adjust forehead pad flat on forehead

WRONG
Squeeze together and raise or lower to adjust

RIGHT
Adjusted
USE QUICK RELEASE TO ADMINISTER NITRO PER SOP

SOP: If systolic is 90 or above, give nitro every 5 minutes unlimited
IF YOU RECEIVE PERMISSION TO USE CPAP WITH SEVERE ASTHMA/COPD & PATIENT IS WHEEZING

The patient will need a neb treatment

CONNECT NEBULIZER BETWEEN CPAP VALVE & MASK
Capnography can be used under CPAP

CPAP with MWLCEMS Neb
Adaptors

- Some nebulizers may require an adaptor (same adapter used for in-line nebs)
- You will need this for Good Shepherd nebulizers
Flow-Safe® CPAP Device

- PEEP depends on
  1. O2 flow rate
  2. Face mask seal (leak)

- Oxygen concentration depends on
  1. O2 flow rate
  2. Respiratory rate
  3. Tidal volume
How long tanks will last at different flow rates

<table>
<thead>
<tr>
<th>Flow/L/Min.</th>
<th>D Cylinder</th>
<th>E Cylinder</th>
<th>M Cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>70</td>
<td>123</td>
<td>703</td>
</tr>
<tr>
<td>6</td>
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<td>102</td>
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<td>12</td>
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</tr>
<tr>
<td>25</td>
<td>14</td>
<td>23</td>
<td>140</td>
</tr>
</tbody>
</table>
CPAP Device Transition

- Attrition (use your old one, replace with a new one)
- Devices already on vehicles will not immediately be replaced
- Transition will occur w/ replacement devices
- When an old device used, it will be replaced w/ new device (as hospital stock allows)
- New devices available after 12-1-11
Document the oxygen flow rate
Document the PEEP reading on the manometer
This can be done in your narrative
Remember to use the manometer reading when patient exhales.
Thanks!

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