Ventilator Team Based Learning
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ABSTRACT:

Audience: This modified team-based learning (TBL) is appropriate for senior medical students, interns, junior and senior emergency medicine residents.

Introduction: Ventilator management can be very complex and difficult to understand, much less master. Often, emergency medicine residents and physicians rely on the respiratory therapist to help guide ventilator settings; however, it is important for physicians to understand ventilator settings and management for acute lung protective and obstructive care.

Objectives: At completion of this TBL the learner should be able to: 1) choose appropriate ventilator settings and adjustments for a patient with lung injury or obstructive lung pattern, 2) troubleshoot an alarming ventilator, 3) set up the most common ventilator in their ED, 4) set up the equipment needed for transtracheal jet ventilation.

Methods: This is a combination of a modified TBL with small group hands-on ventilator and transtracheal jet ventilation set up and instruction.

Topics: Pulmonary, critical care, ventilator, airway, respiratory.
Linked objectives and methods:
The learner responsible content articles provide in-depth discussion on ventilator management for lung injury and obstructive lung disease. The article discusses not only which ventilator settings to use for each but also how to trouble shoot the ventilator. The mTBL consists of an iRAT and gRAT which cover the basics of ventilator settings. The associated group application exercise dives deeper with the goal of having learners work through ventilator settings and trouble shooting how to adjust the ventilator. By implementing the iRAT, gRAT and GAE you can ensure learner understanding and ensure that objectives are met.

The associated ventilator check list small group activity provides an outline for important knowledge physicians should have about their departments ventilators and the transtracheal jet ventilation small group discusses setting up a transtracheal jet ventilator from common ED supplies and is intended for hands on application.

The mTBL can be completed in approximately 45 minutes, allowing 45 minutes for hands on ventilator and transtracheal jet ventilation teaching which can be facilitated by an attending physician or a respiratory therapist.

Recommended pre-reading for instructor:
The instructor should read:

Additionally, the instructor could watch the EMCrit podcasts on Ventilator Management by Scott D Weingart, MD

Learner responsible content (LRC):
The learner should read:

Alternatively, the learner could watch the EMCrit podcasts on Ventilator Management by Scott D Weingart, MD
During the TBL the Learner should have access to:


Results and tips for successful implementation:
This is a combination modified TBL and small group activity.

Prior to the session learners should be given access to the LRC, either the “Managing Initial Mechanical Ventilation in the Emergency Department” by Scott Weingart or the podcasts “Dominating the Vent Part 1 and 2” available on EMCrit.org, as well as the handout “Spinning Dials How to Dominate the Ventilator” by Scott Weingart.

The instructor should review the LRC, and prior to the session print 1 iRAT per person and 1 gRAT and 1 GAE per group.

Prepare the gRATs by making it an immediate feedback/assessment technique (IF/AT) form, see attached gRAT photographs. You can purchase scratch off label stickers at www.amazon.com. This will allow the learners to receive immediate feedback as to whether they got the answers correct.

We recommend separating your learners in to groups of 3-5. Each group will complete the iRAT, gRAT, GAE at their own pace (this takes approximately 45 minutes), additionally each group will rotate through the hands-on Ventilator and Transtracheal Jet Ventilation activities (approximately 20 minutes per station or 40 minutes total).

For the hands on portion we recommend allowing 20 minutes per group, and having a Respiratory Therapist (RT) available to help facilitate the session. Our RT brought a ventilator (our common ED ventilator) to the session. We collaborated with our RT to develop a checklist of important ventilator skills the residents needed to master (see Ventilator Hands-On Session Checklist). Our RT also facilitated the transtracheal jet ventilation station. We recommend having materials available so that residents can practice assembling the transtracheal jet ventilation materials—if available we recommend having a SIM man or similar cricothyrotomy simulator so that residents can practice inserting a transtracheal jet ventilator as well.

Content:
- iRAT
- gRAT
- GAE
- Hands-On Checklist
- Percutaneous Transtracheal Jet Ventilation Handout

References/suggestions for further reading:
Ventilator TBL
Individual Readiness Assessment Test (iRAT)
Based on Weingart, Scott D “Managing Initial Mechanical Ventilation in the Emergency Department” and Ventilator Handout

1. Which study is one of the few ventilator trials to demonstrate mortality benefit?

2. Based on this study, any patient who does not have an obstructive disease should be ventilated with which strategy?
   a) Lung protective
   b) High I:E ratio
   c) Obstructive strategy
   d) Volume overload strategy

3. According to the article, which mode is considered preferable for critically ill ED patients?
   a) Synchronized Intermittent-Mandatory Ventilation (SIMV)
   b) Pressure-Controlled Ventilation
   c) Volume-Assist Control
   d) Pressure Support Ventilation

4. What is the recommended initial tidal volume for patients in the ED without obstructive lung disease?
   a) 6mL/kg
   b) 8mL/kg
   c) 10mL/kg
   d) 12mL/kg

5. What is the minimum acceptable tidal volume?
   a) 2mL/kg
   b) 4mL/kg
   c) 6mL/kg
   d) 8mL/kg
6. What is the appropriate initial setting for an inspiratory flow rate?
   a) 20L/minute
   b) 40L/minute
   c) 60L/minute
   d) 80L/minute

7. What setting should be used for titrating ventilation?
   a) Tidal Volume
   b) Inspiratory Flow Rate
   c) PEEP
   d) Respiratory Rate

8. Respiratory rate can be started at __________breaths/min, and titrated up to __________breaths/min in order to achieve the goal __________

9. What is the goal SpO2 in a patient requiring protective strategy for ventilation?
   a) 80-85%
   b) 82-87%
   c) 88-95%
   d) 95-100%

10. What is the recommended starting point for FiO2 and PEEP in a patient without obstructive lung disease?
    a) FiO2 30-40%; PEEP 0
    b) FiO2 30-40%; PEEP 5
    c) FiO2 50-60%; PEEP 0
    d) FiO2 50-60%; PEEP 5

11. If a patient is hypoxic, despite an FiO2 > 50%, the continued hypoxia is due to:
    a) Excess pressure
    b) Hyperoxia
    c) Inadequate ventilation
    d) Physiologic shunt
12. How do you measure the plateau pressure?

________________________________________________________

13. What is the goal plateau pressure?
   a) <10 cm H₂O
   b) <20 cm H₂O
   c) <30 cm H₂O
   d) <40 cm H₂O

14. If plateau pressures are too high, you should decrease the ____________ by ____________ until the goal plateau pressure is achieved.

15. Why are patients with COPD and asthma different than most other patients?
   a) They require high tidal volumes to ensure appropriate ventilation
   b) They are difficult to oxygenate due to physiologic shunting
   c) They are at high risk for severe acute lung injury
   d) They experience air trapping and barotrauma because they cannot fully exhale

16. The best ventilation strategy in obstructive patients is:
   a) Titrating FiO₂ and PEEP
   b) Avoiding intubation all together
   c) Titrating to higher respiratory rates
   d) Utilizing low inspiratory flow rates

17. What is the starting respiratory rate for intubated patients with an obstructive lung disease?
   a) 8-10 breaths/min
   b) 10-12 breaths/min
   c) 12-14 breaths/min
   d) 14-16 breaths/min
18. What is the recommended starting point for PEEP in a patient with obstructive lung disease?
   a) PEEP 0
   b) PEEP 2
   c) PEEP 5
   d) PEEP 8

19. What is the goal I:E ratio in a patient with obstructive lung disease?
   a) 1:2
   b) 1:3
   c) 1:4
   d) 1:5

20. If the plateau pressure is >30 cm H₂O in a patient with obstructive lung disease, the appropriate change is:
   a) Increased RR and decreased inspiratory time
   b) Decreased RR and decreased inspiratory time
   c) Increased RR and increased inspiratory time
   d) Decreased RR and increased inspiratory time
The subsequent gRAT is intended to be an IF/AT. Ideally, you will purchase “scratch-off label stickers” (available at amazon.com) and place the stickers over the index letters as shown below. If you do not want to create an IF/AT form, you can print the iRAT instead for your gRAT.

Ventilator TBL

Group Readiness Assessment Test (gRAT)

Based on Weingart, Scott D “Managing Initial Mechanical Ventilation in the Emergency Department” and Ventilator Handout

1. Which study is one of the few ventilator trials to demonstrate mortality benefit?
   _____ ARDSNet ARMA study_____

2. Based on this study, any patient who does not have an obstructive disease should be ventilated with which strategy?
   ★ Lung protective
   b) High I:E ratio
   c) Obstructive strategy
   d) Volume overload strategy

3. According to the article, which mode is considered preferable for critically ill ED patients?
   a) Synchronized Intermittent-Mandatory Ventilation (SIMV)
   b) Pressure-Controlled Ventilation
   ★ Volume-Assist Control
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4. What is the recommended initial tidal volume for patients in the ED without obstructive lung disease?
   a) 6mL/kg
   ★ 8mL/kg
   c) 10mL/kg
   d) 12mL/kg

5. What is the minimum acceptable tidal volume?
   a) 2mL/kg
   ★ 4mL/kg
   c) 6mL/kg
   d) 8mL/kg
6. What is the appropriate initial setting for an inspiratory flow rate?
   a) 20L/minute
   b) 40L/minute
   ★ 60L/minute
   d) 80L/minute

7. What setting should be used for titrating ventilation?
   a) Tidal Volume
   b) Inspiratory Flow Rate
   c) PEEP
   ★ Respiratory Rate

8. Respiratory rate can be started at ______15-16______breaths/min, and titrated up to ______30-40_______breaths/min in order to achieve the goal ___PaCO2________

9. What is the goal SpO2 in a patient requiring protective strategy for ventilation?
   a) 80-85%
   b) 82-87%
   ★ 88-95%
   d) 95-100%

10. What is the recommended starting point for FiO2 and PEEP in a patient without obstructive lung disease?
    a) FiO2 30-40%; PEEP 0
    ★ FiO2 30-40%; PEEP 5
    c) FiO2 50-60%; PEEP 0
    d) FiO2 50-60%; PEEP 5

11. If a patient is hypoxic, despite an FiO2 > 50%, the continued hypoxia is due to:
    a) Excess pressure
    b) Hyperoxia
    c) Inadequate ventilation
    ★ Physiologic shunt
12. How do you measure the plateau pressure?

_____ Pressing the inspiratory hold button at the end of the breath _____

13. What is the goal plateau pressure?
   a) <10 cm H₂O
   b) <20 cm H₂O
   ★ <30 cm H₂O
   d) <40 cm H₂O

14. If plateau pressures are too high, you should decrease the __**tidal volume**__ by __**1mL/kg**__ until the goal plateau pressure is achieved.

15. Why are patients with COPD and asthma different than most other patients?
   a) They require high tidal volumes to ensure appropriate ventilation
   b) They are difficult to oxygenate due to physiologic shunting
   c) They are at high risk for severe acute lung injury
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   a) Titrating FiO2 and PEEP
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   d) Utilizing low inspiratory flow rates

17. What is the starting respiratory rate for intubated patients with an obstructive lung disease?
   ★ 8-10 breaths/min
   b) 10-12 breaths/min
   c) 12-14 breaths/min
   d) 14-16 breaths/min
18. What is the recommended starting point for PEEP in a patient with obstructive lung disease?
   - ★ PEEP 0
   - b) PEEP 2
   - c) PEEP 5
   - d) PEEP 8

19. What is the goal I:E ratio in a patient with obstructive lung disease?
   - a) 1:2
   - b) 1:3
   - ★ 1:4
   - ★ 1:5

20. If the plateau pressure is >30 cm H₂O in a patient with obstructive lung disease, the appropriate change is:
   - a) Increased RR and decreased inspiratory time
   - ★ Decreased RR and decreased inspiratory time
   - c) Increased RR and increased inspiratory time
   - d) Decreased RR and increased inspiratory time
1. A 70 kg F is intubated for worsening respiratory status in the setting of severe sepsis. Her chest radiograph shows diffuse opacities and is consistent with ARDS. Her preintubation respiratory rate is 26, SpO2 80%. After intubation you tell the respiratory therapist to adjust the PEEP and FiO2 per ARDSnet protocol. The RT asks you for an initial Tidal Volume, Respiratory Rate and goal SpO2, what do you choose?

2. A 70 kg F with severe sepsis is intubated for respiratory distress, her chest radiograph is consistent with ARDS. Initially she required high PEEP and high FiO2, however her SpO2 has been consistently 99 to 100% for the last several hours. Your intern suggests decreasing the PEEP from 14 to 8 and the FiO2 from 0.7 to 0.6. You disagree because:

3. A 80kg M with a history of COPD is intubated for AMS secondary to COPD exacerbation. The intern suggests the following vent settings:

   Volume Assist Control
   Tidal Volume 640
   Respiratory Rate 16
   Inspiratory Flow Rate of 100 L/min
   PEEP of 5
   FiO2 40%
You tell the intern they are close, but would adjust the vent by:

4. As you are walking through the ICU you hear the ventilator beeping, upon further inspection you note that the ventilator keeps reading “Plateau Pressure HIGH”. In order to decrease the plateau pressure on a patient with lung protective strategy ventilation you adjust the vent by:

5. As you are walking through the ICU you hear the ventilator beeping, upon further inspection you note that the ventilator keeps reading “Plateau Pressure HIGH”. In order to decrease the plateau pressure on a patient with obstructive strategy ventilation you adjust the vent by:

6. What ventilator settings would you choose for a 50 kg M with asthma.

<table>
<thead>
<tr>
<th>Setting</th>
<th>____________________</th>
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<tbody>
<tr>
<td>Tidal volume</td>
<td>____________________</td>
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<td>Inspiratory flow rate</td>
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<td>Respiratory rate of</td>
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<td>FiO2</td>
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<tr>
<td>Goal SPO2 of</td>
<td>____________________</td>
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Ventilator Small Groups
Hands-On Session Checklist

**Ventilator**
1) How to turn the machine on
2) Pressure control vs Assist control- indications and adjustments
3) Machine parameters
   a) Respiratory rate
   b) Oxygen saturation
   c) Volume
4) Trouble shooting
   a) Peak pressure management
   b) Hypoxia management
5) Connection to O2 tank or wall O2

**Percutaneous Jet ventilation**

- Indications
- Equipment
  - 14 gauge angiocath
  - 6.5 endotracheal tube
  - 3mL syringe

Equipment assembly (see Percutaneous Transtracheal Jet Ventilation Handout)
LEARNER MATERIALS

Percutaneous Transtracheal Jet Ventilation Handout

INTRODUCTION:
- Used in “can’t intubate, can’t oxygenate” situations
- Allows for trans-tracheal oxygenation (but poor ventilation)
- Rescue procedure!
  - Allows for “ok” oxygenation, but poor ventilation.
- Surgical airway of choice for pediatric patients who are 10-years-old and under.
  - Small trachea and small cricothyroid membrane are too small to insert a tracheostomy tube and doing so is likely to injure surrounding structures
- NOT a definitive airway
  - There is no cuff, so it does not protect the airway

INDICATIONS:
- Failed upper airway / contraindications to intubation
- No definitive airway and inadequate oxygenation
- Surgical Airway for pediatric patients <10 years old

CONTRAINDICATIONS:
There really aren’t any. But you might want to think about:
- Distorted anatomy due to trauma, masses, obesity, etc.
- Infection overlying the neck
- Coagulopathy
- Awake, uncooperative patient (it will be hard to keep the airway in)

COMPLICATIONS:
- Bleeding, Infection
- Can cause a pneumothorax
- Not a definitive airway → aspiration
- Subcutaneous emphysema
- Catheter is small in diameter, can get obstructed or kinked or displaced
- Posterior tracheal wall perforation
- Injury to the superior laryngeal nerve and thyroid artery and vein

ANATOMY:
Compliments of: Wikipedia Commons

EQUIPMENT:

- Sterile PPE—Gown-Up, Glove-Up!
- 14 gauge angio cath
- 3 cc plastic syringe, luer lock tip
- 7.5 ETT adapter
- BVM
- Oxygen Tubing
- 6.5 ETT cut just below the BVM connector
- 3 way stopcock

STEPS:

1. Patient Supine
2. Attach a 3mL syringe to the 14 gauge angiocath, fill with 1 cc of water
3. Stabilize the larynx with the non-dominant hand between the thumb and middle finger, use the pointer finger to located the cricothyroid membrane
4. Using the dominant hand, insert the needle through the skin and cricothyroid membrane into the larynx while aspirating the syringe, you will get a release and aspirate air when you are in the trachea
5. Advance the cannula into the larynx and trachea, remove the needle
6. Secure the cannula by sutures or tape/tie
7. Connect to Oxygen Source

8. Method 1
   a. Connect a 3ml syringe to the angiocath
   b. Insert a 6.5, 7 or 7.5 ETT connector in to the 3ml syringe
   c. Connect to BVM

9. Method 2
   a. Connect a 3-way stopcock to the angiocath, leave open to all ports
   b. Cut a 6.5 ETT and connect cut tubing of ETT directly to stopcock
   c. Connect to BVM to ETT connector

10. Method 3
    a. Connect a 3-way stopcock to the angiocath, leave open to all ports
    b. Connect oxygen tubing to one other port
    c. The last port will be covered with a finger to oxygenate the patient

OXYGENATE THE PATIENT

11. Using 100% oxygen, <50 psi for adults, <30 psi for children
12. Alternatively, you can use 1L/min per year of age, and titrate up 1L/min depending on chest wall movement
13. Inspiratory phase should be 1 second, followed by 3 seconds for exhalation
14. If age <5 use a BVM for lower tidal volumes to avoid barotrauma

TROUBLE SHOOTING:

- Patient awake/choking \(\rightarrow\) inject 2-3 ml of lidocaine into the larynx
- Kinking of catheter? \(\rightarrow\) knick the skin before inserting angiocath
- Hit a blood vessel? \(\rightarrow\) back out, one small puncture to an artery is unlikely to cause harm
INSTRUCTOR MATERIALS

Answer keys to all exercises with explanations, are on the following pages.

Learners: please do not proceed.
1. Which study is one of the few ventilator trials to demonstrate mortality benefit?

_____ ARDSNet ARMA study_____

2. Based on this study, any patient who does not have an obstructive disease should be ventilated with which strategy?
   a) Lung protective
   b) High I:E ratio
   e) Obstructive strategy
   f) Volume overload strategy

3. According to the article, which mode is considered preferable for critically ill ED patients?
   c) Synchronized Intermittent-Mandatory Ventilation (SIMV)
   e) Volume-Assist Control
   d) Pressure Support Ventilation

4. What is the recommended initial tidal volume for patients in the ED without obstructive lung disease?
   b) 6mL/kg
   c) 8mL/kg
   c) 10mL/kg
   d) 12mL/kg

5. What is the minimum acceptable tidal volume?
   b) 2mL/kg
   c) 4mL/kg
   c) 6mL/kg
   d) 8mL/kg
6. What is the appropriate initial setting for an inspiratory flow rate?
   c) 20L/minute
d) 40L/minute
e) 60L/minute
d) 80L/minute

7. What setting should be used for titrating ventilation?
   d) Tidal Volume
e) Inspiratory Flow Rate
f) PEEP
g) Respiratory Rate

8. Respiratory rate can be started at _______15-16______ breaths/min, and titrated up to
   ______30-40_______ breaths/min in order to achieve the goal ___PaCO2________

9. What is the goal SpO2 in a patient requiring protective strategy for ventilation?
   c) 80-85%
d) 82-87%
e) 88-95%
d) 95-100%

10. What is the recommended starting point for FiO2 and PEEP in a patient without
    obstructive lung disease?
    b) FiO2 30-40%; PEEP 0
c) **FiO2 30-40%; PEEP 5**
c) FiO2 50-60%; PEEP 0
d) FiO2 50-60%; PEEP 5

11. If a patient is hypoxic, despite an FiO2 > 50%, the continued hypoxia is due to:
    d) Excess pressure
e) Hyperoxia
f) Inadequate ventilation
g) Physiologic shunt
12. How do you measure the plateau pressure?

____ Pressing the inspiratory hold button at the end of the breath _____

13. What is the goal plateau pressure?
   - c) <10 cm H₂O
   - d) <20 cm H₂O
   - e) <30 cm H₂O
   - d) <40 cm H₂O

14. If plateau pressures are too high, you should decrease the ___tidal volume___ by ___1mL/kg___ until the goal plateau pressure is achieved.

15. Why are patients with COPD and asthma different than most other patients?
   - d) They require high tidal volumes to ensure appropriate ventilation
   - e) They are difficult to oxygenate due to physiologic shunting
   - f) They are at high risk for severe acute lung injury
   - g) They experience air trapping and barotrauma because they cannot fully exhale

16. The best ventilation strategy in obstructive patients is:
   - e) Titrating FiO₂ and PEEP
   - f) Avoiding intubation all together
   - c) Titrating to higher respiratory rates
   - d) Utilizing low inspiratory flow rates

17. What is the starting respiratory rate for intubated patients with an obstructive lung disease?
   - a) 8-10 breaths/min
   - g) 10-12 breaths/min
   - h) 12-14 breaths/min
   - i) 14-16 breaths/min
18. What is the recommended starting point for PEEP in a patient with obstructive lung disease?
   a) PEEP 0
   b) PEEP 2
   c) PEEP 5
   d) PEEP 8

19. What is the goal I:E ratio in a patient with obstructive lung disease?
   e) 1:2
   f) 1:3
   g) 1:4
   h) 1:5

20. If the plateau pressure is >30 cm H₂O in a patient with obstructive lung disease, the appropriate change is:
   b) Increased RR and decreased inspiratory time
   c) Decreased RR and decreased inspiratory time
   d) Increased RR and increased inspiratory time
   e) Decreased RR and increased inspiratory time
Ventilator TBL
Group Application Exercise Answer Key
Based on Weingart, Scott D “Managing Initial Mechanical Ventilation in the Emergency Department” and Ventilator Handout

1. A 70 kg F is intubated for worsening respiratory status in the setting of severe sepsis. Her chest radiograph shows diffuse opacities and is consistent with ARDS. Her preintubation respiratory rate is 26, SpO2 80%. After intubation you tell the respiratory therapist to adjust the PEEP and FiO2 per ARDSnet protocol. The RT asks you for an initial Tidal Volume, Respiratory Rate and goal SpO2, you choose:

Possible answer: Tidal Volume 560, RR 16, SpO2 88-95%

Patients with sepsis should be ventilated for lung protection. This means starting with a tidal volume of 8 mL/kg, a starting respiratory rate of 16, and then adjusting as needed for the patients CO2 goal, and a goal SpO2 of 88 to 95%.

2. A 70 kg F with severe sepsis is intubated for respiratory distress, her chest radiograph is consistent with ARDS. Initially she required high PEEP and high FiO2, however her SpO2 has been consistently 99 to 100% for the last several hours. Your intern suggests decreasing the PEEP from 14 to 8 and the FiO2 from 0.7 to 0.6. You disagree because:

ANSWER: Downward titration should be done at a slower pace to avoid losing alveolar recruitment.
Patients with sepsis should be ventilated for lung protection. PEEP and FiO2 should be adjusted per the ARDSnet protocol as this is the ventilator trials to demonstrate mortality benefit. Decreasing PEEP and FiO2 should be done at a slower pace to avoid losing “hard won” alveolar recruitment. Thus the PEEP should be decreased from 14 to 12 and the physician/RT should consider leaving the FiO2 at 0.7 and monitoring the patients respiratory status before decreasing the PEEP and FiO2 further.

3. A 80kg M with a history of COPD is intubated for AMS secondary to COPD exacerbation. The intern suggests the following vent settings:

Volume Assist Control

INSTRUCTOR MATERIALS

Tidal Volume 640  
Respiratory Rate 16  
Inspiratory Flow Rate of 100 L/min  
PEEP of 5  
FiO2 40%

You tell the intern they are close, but would adjust the vent by:

ANSWER:
Decrease the RR as patients who are obstructive need more time to exhale

Decrease the inspiratory flow rate to 70 L/minute as higher IFR do little to increase exhalation, and only cause increase ventilator machine alarming

The intern could also lower the PEEP to 0 as this is thought to help, however there is little evidence to support a PEEP of <5.

4. As you are walking through the ICU you hear the ventilator beeping, upon further inspection you note that the ventilator keeps reading “Plateau Pressure HIGH”. In order to decrease the plateau pressure on a patient with lung protective strategy ventilation you adjust the vent by:

ANSWER: Decreasing the patients’ tidal volume by 1mL/kg until the plateau pressure is less than 30
The plateau pressure approximates the pressure on and in the alveoli. In order to decrease the plateau pressure for a lung protective strategy ventilation the physician/RT can decrease the tidal volume by 1 mL/kg until the plateau pressure is <30 cm H2O. Tidal volumes can go as low as 4 mL/kg in order to protect the lungs.

5. As you are walking through the ICU you hear the ventilator beeping, upon further inspection you note that the ventilator keeps reading “Plateau Pressure HIGH”. In order to decrease the plateau pressure on a patient with obstructive strategy ventilation you adjust the vent by:
ANSWER: Decrease the respiratory rate to allow for full exhalation

The plateau pressure approximates the pressure on and in the alveoli. In order to decrease the plateau pressure for obstructive strategy ventilation the physician/RT can decrease the respiratory rate to allow for full exhalation, thus decreasing breath stacking and plateau pressure.

6. What ventilator settings would you choose for a 50 kg M with asthma.

ANSWER:
Setting Volume Assist Control
Tidal volume of 8 mL/kg = 400 mL
Inspiratory flow rate of 60-80 L/min
Respiratory rate of 10
PEEP 0
FiO2 0.4
Goal SPO2 of 88%