Periop Emergencies

1. Emergency Assessment for 2014

1.1 Periop Emergencies

1.2 Crisis Resource Management

What?
- A set of common principles to apply to a variety of stressful situations
1.3 Crisis Resource Management

Crisis Resource Management

1. Know the environment - how to locate and operate your equipment, troubleshooting, alternatives
2. Anticipate/Plan - some patients are at greater risk than others
3. Call for help - self-explanatory
4. Designate leadership - someone must step back from procedures to guide others, otherwise you may focus on one aspect while more important steps are missed
5. Role clarity - each person has their job
6. Distribute the work - one person can’t do it all

2. Use cognitive aids (checklists) - improve adherence to guidelines
3. Mobilize resources - initiate other teams as necessary (cath lab, OR, ICU, IR)
4. Allocate attention/use all information - do not fixate on one problem, one diagnosis

1.4 In a critical event, the team leader should:

(Multiple Choice, 10 points, unlimited attempts permitted)

1. In a critical event, the team leader should:

- Run around yelling instructions to everyone in the room in order to focus the team’s attention to the problem at hand
- Be familiar with the operation of the equipment in that location
- Team leader should remain the same person throughout the event
- Personally perform the challenging technical tasks to ensure the task is successful

Correct Choice

Run around yelling instructions to everyone in the room in order to focus the
team's attention to the problem at hand

X Be familiar with the operation of the equipment in that location

Team leader should remain the same person throughout the event

Personally perform the challenging technical tasks to ensure the task is successful

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
Incorrect (Slide Layer)

1. In a critical event, the team leader should:

- Run around yelling instructions to everyone in the room in order to focus the team’s attention to the problem at hand
- Be familiar with the equipment in the room
- Team members present a different event
- Personal task is successful

Incorrect

You did not select the correct response.

Continue

Try Again (Slide Layer)

1. In a critical event, the team leader should:

- Run around yelling instructions to everyone in the room in order to focus the team’s attention to the problem at hand
- Be familiar with the equipment in the room
- Team members present a different event
- Personal task is successful

Incorrect

That is incorrect. Please try again.

Try Again
1.6 What are the steps of the BLS survey? (check all that apply)

(Multiple Response, 10 points, 2 attempts permitted)

2. What are the steps of the BLS survey? (check all that apply)

- a. Check responsiveness ("Are you alright?") - check for absent of abnormal breathing
- b. Activate the emergency response system/get AED
- c. Obtain IV access
- d. Circulation (check the carotid pulse for 5-10 seconds)
- e. Defibrillation (If no pulse, check for shockable rhythm with AED, follow each shock with CPR, starting with compressions)

Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Check responsiveness (&quot;Are you alright?&quot;) - check for absent of abnormal breathing</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>breathing</td>
</tr>
<tr>
<td>X</td>
<td>b. Activate the emergency response system/get AED</td>
</tr>
<tr>
<td></td>
<td>c. Obtain IV access</td>
</tr>
<tr>
<td>X</td>
<td>d. Circulation (check the carotid pulse for 5-10 seconds)</td>
</tr>
<tr>
<td>X</td>
<td>e. Defibrillation (if no pulse, check for shockable rhythm with AED, follow each shock with CPR, starting with compressions)</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**
1.7 Success of any resuscitation attempt is built on:

(Multiple Choice, 10 points, unlimited attempts permitted)
3. Success of any resuscitation attempt is built on:

- a. high quality CPR
- b. defibrillation when required by the patients ECG rhythm
- c. both A and B
- d. none of the above

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. high quality CPR</td>
</tr>
<tr>
<td>b. defibrillation when required by the patients ECG rhythm</td>
</tr>
<tr>
<td>c. both A and B</td>
</tr>
<tr>
<td>d. none of the above</td>
</tr>
</tbody>
</table>

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.
Correct (Slide Layer)

3. Success of any resuscitation attempt is built on:

- a. high quality CPR
- b. defibrillation when required by the patient's ECG rhythm
- c. both
- d. none

That's right! You selected the correct response.

Incorrect (Slide Layer)

3. Success of any resuscitation attempt is built on:

- a. high quality CPR
- b. defibrillation when required by the patient's ECG rhythm
- c. both
- d. none

You did not select the correct response.
1.8 Untitled Slide

1.9 When stopping CPR to take a pulse check, what is the maximum amount of time you should take for a pulse check?

(Multiple Choice, 10 points, unlimited attempts permitted)
4. When stopping CPR to take a pulse check, what is the maximum amount of time you should take for a pulse check?

- a. 2 seconds
- b. 5 seconds
- c. 6 seconds
- d. 10 seconds
- e. 15 seconds

**Correct Choice**

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. 2 seconds</td>
</tr>
<tr>
<td></td>
<td>b. 5 seconds</td>
</tr>
<tr>
<td></td>
<td>c. 6 seconds</td>
</tr>
<tr>
<td>X</td>
<td>d. 10 seconds</td>
</tr>
<tr>
<td></td>
<td>e. 15 seconds</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

4. When stopping CPR to take a pulse check, what is the maximum amount of time you should take for a pulse check?

- a. 2 seconds
- b. 5 seconds
- c. 6 seconds
- d. 10 seconds
- e. 15 seconds

That's right! You selected the correct response.

Incorrect (Slide Layer)

4. When stopping CPR to take a pulse check, what is the maximum amount of time you should take for a pulse check?

- a. 2 seconds
- b. 5 seconds
- c. 6 seconds
- d. 10 seconds
- e. 15 seconds

You did not select the correct response.
1.10 During CPR with no advanced airway in place, the compression-to-ventilation ratio is:

(Multiple Choice, 10 points, unlimited attempts permitted)
Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. 5:1</td>
</tr>
<tr>
<td>X</td>
<td>b. 30:2</td>
</tr>
<tr>
<td></td>
<td>c. 10:1</td>
</tr>
<tr>
<td></td>
<td>d. 20:2</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

5. During CPR with no advanced airway in place, the compression-to-ventilation ratio is:

- a. 5:1
- b. 30:2
- c. 10:1
- d. 20:2

Correct
That's right! You selected the correct response.

Continue
5. During CPR with no advanced airway in place, the compression-to-ventilation ratio is:

- a. 5:1
- b. 30:2
- c. 10:1
- d. 20:2

Incorrect
You did not select the correct response.

Try Again
That is incorrect. Please try again.
1.11 Untitled Slide

1.12 During CPR, after an advance airway is in place, which of the following is true?

(Multiple Choice, 10 points, unlimited attempts permitted)

- a. The breaths should be synchronized with the chest compressions
- b. The goal is 20 or greater breaths per minute
- c. Chest compressions should be stopped while giving breaths
- d. One breath every 6 to 8 seconds should be given
Correct Choice

<table>
<thead>
<tr>
<th></th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>The breaths should be synchronized with the chest compressions</td>
</tr>
<tr>
<td>b</td>
<td>The goal is 20 or greater breaths per minute</td>
</tr>
<tr>
<td>c</td>
<td>Chest compressions should be stopped while giving breaths</td>
</tr>
<tr>
<td>X</td>
<td>One breath every 6 to 8 seconds should be given</td>
</tr>
</tbody>
</table>

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
Incorrect (Slide Layer)

6. During CPR, after an advance airway is in place, which of the following is true?

- a. The breaths should be synchronized with the chest compressions
- b. The rate is 20 or greater breaths per minute
- c. Check heart rate
- d. Other

Incorrect
You did not select the correct response.

Try Again (Slide Layer)

6. During CPR, after an advance airway is in place, which of the following is true?

- a. The breaths should be synchronized with the chest compressions
- b. The rate is 20 or greater breaths per minute
- c. Check heart rate
- d. Other

Incorrect
That is incorrect. Please try again.

Try Again
1.13 Untitled Slide

- The difference between this and the previous graphic is the two pathways for **Shock** or **“No shock advised”**

  - **Shock** for VF/VT
  - **“No shock advised”** is Pulsless Electrical Activity (PEA) or Asystole

- **Drugs**
  - Epinephrine 1 mg IV/IO every 3-5 min and/or Maropitant 40 units IV/IO once increase peripheral vascular resistance to (hopefully) perfuse the head and heart
  - Amiodarone 300 mg IV/IO is main antiarrhythmic for “shock resistant VF/VT”
  - Other drugs may be considered but, are not necessarily part of this algorithm

1.14 True or False: The systematic approach with a person in cardiac arrest should include the BLS survey and the ACLS survey.

(True/False, 10 points, unlimited attempts permitted)
Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>True</td>
</tr>
<tr>
<td></td>
<td>False</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**
1.15 What is a common but sometimes fatal mistake in cardiac arrest management?

(Multiple Choice, 10 points, unlimited attempts permitted)
8. What is a common but sometimes fatal mistake in cardiac arrest management?

- a. Prolonged interruptions in chest compressions
- b. Poor quality rescue breaths
- c. Poor IV access
- d. Medication error
- e. Inadequate power during cardioversion

**Correct Choice**

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Prolonged interruptions in chest compressions</td>
</tr>
<tr>
<td></td>
<td>b. Poor quality rescue breaths</td>
</tr>
<tr>
<td></td>
<td>c. Poor IV access</td>
</tr>
<tr>
<td></td>
<td>d. Medication error</td>
</tr>
<tr>
<td></td>
<td>e. Inadequate power during cardioversion</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

8. What is a common but sometimes fatal mistake in cardiac arrest management?

- a. Prolonged interruptions in chest compressions
- b. Poor deoxygenation
- c. Poor perfusion
- d. Magnetism
- e. Inability to regain consciousness

Correct

That's right! You selected the correct response.

Continue

Incorrect (Slide Layer)

8. What is a common but sometimes fatal mistake in cardiac arrest management?

- a. Prolonged interruptions in chest compressions
- b. Poor deoxygenation
- c. Poor perfusion
- d. Magnetism
- e. Inability to regain consciousness

Incorrect

You did not select the correct response.

Continue
1.16 Key concepts to ACLS

Key Concepts to ACLS

- Call for HELP
- Focus on chest compressions and appropriate early defib
- Emphasize chest compressions (CC) and de-emphasize ventilation
  - Why?
    - Normally, venous blood returns to right heart and is pumped to the lungs where ventilation brings in O₂ and eliminates CO₂.
    - BUT, without cardiac output, there is no pumping blood to the lungs, no pulmonary blood flow, so no CO₂ is brought to the lungs and no O₂ is added to the blood.
    - Therefore, in settings of low or no cardiac output, any ventilation is deadweight (ventilation without pulmonary blood flow/cardiac output) and therefore not useful.
    - Further, ventilation in this setting increases intrathoracic pressure and further reduces venous return.
    - And, screwing around with ventilation and advanced airway devices interferes with CC.
- Resume CC after shock.
- Don’t check rhythm, don’t feel for a pulse. Even if there is a return of organized conduction, the heart is unlikely pumping effectively for the first several minutes.

1.17 When delivering assisted ventilation, it is critical to avoid what type of ventilation? 

(Multiple Choice, 10 points, unlimited attempts permitted)
9. When delivering assisted ventilation, it is critical to avoid what type of ventilation?

a. Positive pressure ventilation
b. Negative pressure ventilation
c. Excessive Ventilation; it can increase intrathoracic pressure, decrease venous return to the heart and decrease flow
d. Volume limited ventilation
e. Pressure support ventilation

**Correct Choice**

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Positive pressure ventilation</td>
</tr>
<tr>
<td>b.</td>
<td>Negative pressure ventilation</td>
</tr>
<tr>
<td>c. X</td>
<td>Excessive Ventilation; it can increase intrathoracic pressure, decrease venous return to the heart and decrease flow</td>
</tr>
<tr>
<td>d.</td>
<td>Volume limited ventilation</td>
</tr>
<tr>
<td>e.</td>
<td>Pressure support ventilation</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.
9. When delivering assisted ventilation, it is critical to avoid what type of ventilation?

- a. Positive pressure ventilation
- b. Negative pressure ventilation
- c. Excessive venous return
- d. Volumetric
- e. Pressure

**Correct (Slide Layer)**

**Incorrect (Slide Layer)**
1.18 Key concepts to ACLS

**Key Concepts to ACLS**

**Big changes in 2010:**
- Monitor end-tidal CO₂ (ET CO₂) whenever CC are ongoing and if ET CO₂ is <10mmHg, improve CC

  **WHY?**
  - Venous blood brings CO₂ back from the body. That venous, CO₂-rich blood is pumped out of the right ventricle to the lungs where it diffuses into the alveoli and then is exhaled.
  - So, if there is no right heart output, there is no pulmonary blood flow, there is no CO₂ in exhaled breath.
  - Incardiac arrest, there is no cardiac output, no pulmonary blood flow, no CO₂ in exhaled breath unless there is good CC. Put another way, CC are creating whatever cardiac output there is. In this setting, if there is little to no ET CO₂, the CC are ineffective.
  - So, ET CO₂ provides a rough estimate of cardiac output
1.19 Key concepts to ACLS

**Key concepts to ACLS**

Big changes in 2010:
- Biphasic (120-200J) or monophasic (360J) shocks - no meaningful difference btw these two devices, use the device specific recommended energy or the maximum energy available on that device
- Drugs for cardiac arrest: epinephrine 1mg IV, vasopressin 40units IV or amiodarone 300mg IV (for shock resistant VF or VT)
- Ventilation is not that important during adult cardiac arrest (at least until cardiac output is restored), therefore intubation or placement of other advanced airways are not stressed

1.20 An AED does not promptly analyze a rhythm, what is your next step?

*(Multiple Choice, 10 points, unlimited attempts permitted)*

**10. An AED does not promptly analyze a rhythm, what is your next step?**

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Initial rescue breathing</td>
</tr>
</tbody>
</table>

Published by Articulate® Storyline | www.articulate.com
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>b. Begin chest compressions</td>
</tr>
<tr>
<td></td>
<td>c. Reboot the machine</td>
</tr>
<tr>
<td></td>
<td>d. Call for help</td>
</tr>
<tr>
<td></td>
<td>e. Check for pulse</td>
</tr>
<tr>
<td></td>
<td>f. Reposition the patient</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

![AED analysis screen with correct feedback message]
1.21 What is the preferred method of access for epinephrine administration during cardiac arrest in most patients?

(Multiple Choice, 10 points, unlimited attempts permitted)
11. What is the preferred method of access for epinephrine administration during cardiac arrest in most patients?

- a. Interosseus
- b. Subclavian IV
- c. Endotracheal
- d. Intranasal
- e. Peripheral IV

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Interosseus</td>
</tr>
<tr>
<td></td>
<td>b. Subclavian IV</td>
</tr>
<tr>
<td></td>
<td>c. Endotracheal</td>
</tr>
<tr>
<td></td>
<td>d. Intranasal</td>
</tr>
<tr>
<td>X</td>
<td>e. Peripheral IV</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
11. What is the preferred method of access for epinephrine administration during cardiac arrest in most patients?

- a. Intersosseus
- b. Subcutaneous
- c. Endotracheal
- d. Intramuscular
- e. Percutaneous

Correct (Slide Layer)

Incorrect (Slide Layer)
11. What is the preferred method of access for epinephrine administration during cardiac arrest in most patients?

   a. Intersosseus
   b. Subcutaneous
   c. Endotracheal
   d. Intravenous
   e. Percutaneous

   Incorrect.
   That is incorrect. Please try again.

1.22 Which action has been shown to increase the chance of successful conversions of ventricular fibrillation?

   (Multiple Choice, 10 points, unlimited attempts permitted)

12. Which action has been shown to increase the chance of successful conversions of ventricular fibrillation?

   a. Initiating cardioversion at the lowest recommended energy
   b. Using biphasic versus monophasic energy
   c. Providing quality compressions immediately before a defibrillation attempt
   d. Adequate oxygenation
<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Initiating cardioversion at the lowest recommended energy</td>
</tr>
<tr>
<td></td>
<td>b. Using biphasic versus monophasic energy</td>
</tr>
<tr>
<td>X</td>
<td>c. Providing quality compressions immediately before a defibrillation attempt</td>
</tr>
<tr>
<td></td>
<td>d. Adequate oxygenation</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**
Incorrect (Slide Layer)

12. Which action has been shown to increase the chance of successful conversions of ventricular fibrillation?

- a. Initiating cardioversion at the lowest recommended energy
- b. Using adequate energy
- c.Providing additional cardioversion attempt
- d. Adequate monitoring

Incorrect.
You did not select the correct response.

Try Again (Slide Layer)

12. Which action has been shown to increase the chance of successful conversions of ventricular fibrillation?

- a. Initiating cardioversion at the lowest recommended energy
- b. Using adequate energy
- c. Providing additional cardioversion attempt
- d. Adequate monitoring

Incorrect.
That is incorrect. Please try again.
1.23 Near-arrest situations

Near-arrest Situations

- Remember, the name of the game is deliver oxygen to vital organs.
  - $O_2$ delivery ~ $O_2$ content in blood x cardiac output
- Inadequate oxygen delivery manifests as shortness of breath, dizziness, mental status changes, increasing lactate, signs of heart failure, etc.

1.24 What is an adverse sign of bradycardia?

(Multiple Choice, 10 points, unlimited attempts permitted)

13. What is an adverse sign of bradycardia?

- a. Congestive heart failure
- b. Hypertension
- c. Chest pain
- d. Impaired speech

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Congestive heart failure</td>
</tr>
</tbody>
</table>

Published by Articulate® Storyline  www.articulate.com
b. Hypertension

c. Chest pain

d. Impaired speech

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)
13. What is an adverse sign of bradycardia?

- a. Congestive heart failure
- b. Hypertension
- c. Check
- d. Impact

Incorrect

You did not select the correct response.

Continue

Try Again

That is incorrect. Please try again.

Try Again
1.25 How is blood pressure related to cardiac output (oxygen delivery)?

**How is blood pressure related to cardiac output (oxygen delivery)?**

- Cardiac Output (CO) = Heart rate (HR) x stroke volume (SV)
- Also, remember Ohm’s law, flow = change in pressure divided by resistance (I=V/R)
- So, whole body blood flow (also known as cardiac output) is approximately (MAF-CVP)/SVR
- So, BP can be high even when CO is low (if SVR is high) and BP can be low when CO is high (if SVR is low)
  - This is why in a failing heart, we strive for afterload reduction, which promotes forward flow and oxygen delivery
  - And, just because the BP is “ok”, that doesn’t mean oxygen delivery is ok

1.26 A rhythm disorder with a heart rate of greater than 100 bpm is __________.

*(Multiple Choice, 10 points, unlimited attempts permitted)*

14. A rhythm disorder with a heart rate of greater than 100 bpm is __________.

- a. Acute Coronary Syndrome
- b. Bradycardia
- c. Ventricular Fibrillation
- d. Tachyarrhythmia
Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Acute Coronary Syndrome</td>
</tr>
<tr>
<td></td>
<td>b. Bradycardia</td>
</tr>
<tr>
<td></td>
<td>c. Ventricular Fibrillation</td>
</tr>
<tr>
<td>X</td>
<td>d. Tachyarrhythmia</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

14. A rhythm disorder with a heart rate of greater than 100 bpm is ________.

- a. Acute Coronary Syndrome
- b. Bradycardia
- c. Ventricular Fibrillation
- d. Tachyarrhythmia

Correct

That's right! You selected the correct response.

Continue
Incorrect (Slide Layer)

14. A rhythm disorder with a heart rate of greater than 100 bpm is __________.

a. Acute Coronary Syndrome
b. Bradycardia
c. Ventricular Fibrillation
d. Tachycardia

Try Again (Slide Layer)

14. A rhythm disorder with a heart rate of greater than 100 bpm is __________.

a. Acute Coronary Syndrome
b. Bradycardia
c. Ventricular Fibrillation
d. Tachycardia
1.27 Back to near-arrest situations

Back to Near-arrest Situations

- What is too high for a HR?
  - Rule of thumb: 220-age is max HR
  - Higher HR than max may compromise diastolic filling
- So, check out the AHA/ACC algorithm for tachycardia

1.28 Untitled Slide

Adult Tachycardia

- Identify and treat underlying cause
  - Malignant (patient alert and able to breathe; deny emergenc
  - Oxygen via nasal cannula
  - Cardiac arrest if death arrhythmia occurs and worsens

- Tender hypotensive
  - Assess if arrhythmia stable
  - Signs of shock
  - Adrenergic crisis documented
  - Assess heart rate

- Tachycardia
  - Consider sedation
  - If refractory tachyarrhythmia, consider antibradycardic

- If life threatening
  - No
  - Yes

- With CPR
  - Stop

- No

- Yes

- Contraindicated
  - 50-80 mg/min with therapy
  - Contraindicated with therapeutic
  - Contraindicated with conduction
  - Contraindicated for arrhythmia
  - Consider antibradycardic
  - Consider expert consultation

- Drug/Dosing
  - Propranolol
  - 50-80 mg/min with therapy
  - Contraindicated for arrhythmia
  - Consider antibradycardic
  - Consider expert consultation

- Contraindicated
  - 50-80 mg/min with therapy
  - Contraindicated for arrhythmia
  - Consider antibradycardic
  - Consider expert consultation

- Drug/Dosing
  - Propranolol
  - 50-80 mg/min with therapy
  - Contraindicated for arrhythmia
  - Consider antibradycardic
  - Consider expert consultation
1.29 **Key points to tachycardia**

**Key Points to Tachycardia**

- O₂ is rarely harmful for adults (so, use it)
- If there is inadequate O₂ delivery, rapidly move to shock
  - Whenever there is a recognizable pattern in the ECG, use synchronized shocks
  - Sync tries to deliver the shock *not* on the T-wave
  - If the shock occurs during the T-wave, you may decompensate (go to V-fib), known as the "R-on-T" phenomenon
- Narrow complex tachycardias come from at or above the AV node
  - Therefore, they require less electricity since there is less atrial muscle mass to depolarize, to put into the refractory phase

1.30 **Key points to tachycardia**

**Key Points to Tachycardia**

- While preparing to cardiovert, you may consider sedation, antiarrhythmics, etc
- What conditions may put a patient at risk for tachydysrhythmia?
  - Low K, low Mg, mostly
  - Sympathetic excess (like pain)
  - Myocardial ischemia
  - Volume overload

1.31 **Which of the following is a standard treatment procedure for patients with STEMI?**

*(Multiple Choice, 10 points, unlimited attempts permitted)*
15. Which of the following is a standard treatment procedure for patients with STEMI?

- a. Reperfusion therapy
- b. Use of a soft catheter
- c. Defibrillation
- d. Administration of morphine

Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Reperfusion therapy</td>
</tr>
<tr>
<td></td>
<td>b. Use of a soft catheter</td>
</tr>
<tr>
<td></td>
<td>c. Defibrillation</td>
</tr>
<tr>
<td></td>
<td>d. Administration of morphine</td>
</tr>
</tbody>
</table>

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.
15. Which of the following is a standard treatment procedure for patients with STEMI?

Correct (Slide Layer)

Incorrect (Slide Layer)
1.32 What causes myocardial ischemia?

Myocardial ischemia either arises from . . . .

- An imbalance between myocardial oxygen supply and demand

    OR

- PLAQUE RUPTURE/CORONARY THROMBOSIS
1.33 What causes myocardial ischemia?

What causes myocardial ischemia?

- Myocardial ischemia arises from an imbalance btw myocardial O₂ delivery vs O₂ consumption
- So, what is myocardial O₂ delivery?
  - Remember O₂ delivery is determined by blood flow and blood oxygen content
  - For the heart specifically, we’re talking about coronary blood flow (CBF)
  - CBF ~ (diastolic BP - left ventricular end-diastolic pressure)/coronary vascular resistance

1.34 What causes myocardial ischemia?

What causes myocardial ischemia?

CBF=(DBP-LVEDP)/CVR

- Why diastolic BP?
  - The pressure inside the ventricle during systole must be greater than the pressure in the aorta to eject blood
  - The pressure in the wall of the ventricle, where the coronary arteries perforate, is about the same as that in the ventricle. So, there is little to no CBF during systole (to the left ventricle, that is)
  - During diastole, the aortic valve closes (as indicated by C in the figure) and the pressure in the aorta stays high (diastolic pressure)
  - Pressure inside the ventricular wall falls (isoeleemic relaxation and diastolic filling)
  - So, most coronary blood flow occurs during diastole and DBP is the pushing pressure

- Why LV end-diastolic pressure (LVEDP)?
  - During diastole, the ventricle relaxes and the pressure falls to less than the pressure in the left atrium and the mitral valve opens (as indicated by D on the figure)
  - So, the pressure in the LV wall is about the same as the pressure in the ventricle and the coronary arteries pass through the wall, so that LVEDP is the back-end pressure the blood is flowing against
1.35 What causes myocardial ischemia?

What causes myocardial ischemia?

- What about coronary vascular resistance?
  - Many organs ‘autoregulate’ their blood flow to maintain constant supply by constricting or dilating blood vessels
  - For the heart, all the things that are by-products of ischemia dilate coronary arteries (lactic acid, H+, adenosine, K+, etc)
  - So, when someone is experiencing myocardial ischemia, there is little we can do to further medically dilate the coronaries.

1.36 What causes myocardial ischemia?

What causes myocardial ischemia?

- In addition to coronary blood flow, there must be O₂ carried by that blood.
- The arterial O₂ content (CaO₂) = how much O₂ hemoglobin is carrying plus the amount of O₂ that is dissolved in blood
  - CaO₂ = 1.34ml O₂/gHgb x Hgb (g/dl of blood) x saturation (SpO₂) + PaO₂ x 0.003 mL O₂/mmHg
- So, give supplemental O₂ and consider transfusion (but, don’t forget about the countless ways transfusion can harm)
1.37 What causes myocardial ischemia?

- So, what about myocardial O₂ demand?
  - The heart is a muscle; like any muscle it consumes O₂ when it does work
  - So, how hard is the heart working? (HR x P x r)/2H
    - HR = Heart rate, the number of times the heart contracts in a minute
    - P = Afterload, the pressure the heart must generate (or weight the muscle must lift)
    - r = radius or the Preload, the distance the heart moves
    - H = wall thickness, the bigger the muscle, the easier it is to lift a weight
  - Unfortunately for wall thickness, the thicker the muscle, potentially the higher the iVSP

1.38 Untitled Slide
1.39 Untitled Slide

1.40 How do we optimize myocardial O2 supply v O2 demand?

How do we optimize myocardial O₂ supply vs O₂ demand?

- Don’t get too vasodilated (too low dBP - decreases O₂ supply)
- Don’t get too volume overloaded (too high preload - increases O₂ demand)
- Don’t get too hypertensive (too high afterload - increases O₂ demand)
- Don’t get too tachycardic (increases O₂ demand)
- Don’t get too hypoxic (decreases O₂ supply)
- Don’t get too anemic (decreases O₂ supply)

- However, most of the time a coronary thrombus (or two) is causing the ischemia
- Optimizing supply and demand won’t fix that
- Antiplatelet (aspirin, clopidogrel, glycoprotein IIb/IIIa inhibitors) and antithrombotic (UH/LMWH) meds are needed and potentially percutaneous coronary intervention

1.41 You are evaluating a 67 year old man with chest pain. The BP is 88/50 and a heart rate of 96/min, non-labored respiratory rate is 14
breaths/min and the pulse oximeter saturation is 97%. What assessment step is most important now?

(Multiple Choice, 10 points, unlimited attempts permitted)

16. You are evaluating a 67 year old man with chest pain. The BP is 88/50 and a heart rate of 96/min, non-labored respiratory rate is 14 breaths/min and the pulse oximeter saturation is 97%. What assessment step is most important now?

- a. Obtain arterial blood gas
- b. Initiate supplemental O2
- c. Send troponin levels
- d. Obtaining a 12 lead ECG
- e. Obtain chest X-ray

Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Obtain arterial blood gas</td>
</tr>
<tr>
<td>b.</td>
<td>Initiate supplemental O2</td>
</tr>
<tr>
<td>c.</td>
<td>Send troponin levels</td>
</tr>
<tr>
<td>d.</td>
<td>Obtaining a 12 lead ECG</td>
</tr>
<tr>
<td>e.</td>
<td>Obtain chest X-ray</td>
</tr>
</tbody>
</table>

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
Correct (Slide Layer)

16. You are evaluating a 67 year old man with chest pain. The BP is 88/50 and a heart rate of 96/min, non-labored respiratory rate is 14 breaths/min and the pulse oximeter saturation is 97%. What assessment step is most important now?

- a. Obtain history
- b. Initiate airway
- c. Send specimen
- d. Obtain
- e. Obtain chest X-ray

Incorrect (Slide Layer)

16. You are evaluating a 67 year old man with chest pain. The BP is 88/50 and a heart rate of 96/min, non-labored respiratory rate is 14 breaths/min and the pulse oximeter saturation is 97%. What assessment step is most important now?

- a. Obtain history
- b. Initiate airway
- c. Send specimen
- d. Obtain
- e. Obtain chest X-ray

[Incorrect message]

That's right! You selected the correct response.

[Correct message]

You did not select the correct response.
1.42 Which of the following is (are) an Acute Coronary Syndrome?

(Multiple Choice, 10 points, unlimited attempts permitted)

17. Which of the following is (are) an Acute Coronary Syndrome?

- a. Plaque rupture
- b. Microemboli
- c. Unstable angina
- d. All of the above

Correct Choice

- a. Plaque rupture
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Microemboli</td>
<td></td>
</tr>
<tr>
<td>c. Unstable angina</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>d. All of the above</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

17. Which of the following is (are) an Acute Coronary Syndrome?

- a. Plaque rupture
- b. Microemboli
- c. Unstable angina
- d. All of the above

![Correct Feedback](image.png)
1.43 Which of the following is not a recommended agent to be administered to patients under evaluation for ACS?

(Multiple Choice, 10 points, unlimited attempts permitted)
18. Which of the following is not a recommended agent to be administered to patients under evaluation for ACS?

- a. Morphine
- b. Epinephrine
- c. Aspirin
- d. Nitroglycerin

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Morphine</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>b. Epinephrine</td>
</tr>
<tr>
<td>c. Aspirin</td>
</tr>
<tr>
<td>d. Nitroglycerin</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

18. Which of the following is not a recommended agent to be administered to patients under evaluation for ACS?

- a. Morphine
- b. Epinephrine
- c. Aspirin
- d. Nitrates

That's right! You selected the correct response.

Incorrect (Slide Layer)

18. Which of the following is not a recommended agent to be administered to patients under evaluation for ACS?

- a. Morphine
- b. Epinephrine
- c. Aspirin
- d. Nitrates

You did not select the correct response.
18. Which of the following is not a recommended agent to be administered to patients under evaluation for ACS?

- a. Morphine
- b. Epinephrine
- c. Aspirin
- d. Nitroglycerin

Incorrect.
That is incorrect. Please try again.

Try Again (Slide Layer)

1.44 Untitled Slide

Thank you for completing the content portion of this module. Next you will need to take a 13 question quiz and obtain an 80% or better to pass.

Please click Next to continue.

1.45 In a case of a patient in respiratory arrest with a pulse, how many breaths do you give per minute?

(Multiple Choice, 10 points, 1 attempt permitted)
1. In a case of a patient in respiratory arrest with a pulse, how many breaths do you give per minute?

<table>
<thead>
<tr>
<th>Correct Choice</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. 1 breath every 5-6 seconds - 10-12 breaths per minute</td>
</tr>
<tr>
<td></td>
<td>b. 2 breaths every 15 seconds - 8 breaths per minute</td>
</tr>
<tr>
<td></td>
<td>c. 4 breaths every 25 seconds - 8-10 breaths per minute</td>
</tr>
<tr>
<td></td>
<td>d. 6 breaths every 35 seconds - 11-12 breaths per minute</td>
</tr>
</tbody>
</table>

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
1.46 According to new 2010 guidelines for CPR, which of the following is in the correct order for the patient with sudden cardiac arrest?

(Multiple Choice, 10 points, 1 attempt permitted)
2. According to new 2010 guidelines for CPR, which of the following is in the correct order for the patient with sudden cardiac arrest?

- a. Open airway, provide ventilations, give 30 chest compressions, attach AED as soon as possible
- b. Give 30 compressions, open airway, provide ventilation, attach AED as soon as possible
- c. Open airway, check breathing, check pulse, attach AED as soon as possible
- d. None of the above

<table>
<thead>
<tr>
<th>Correct Choice</th>
<th>Feedback when correct:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open airway, provide ventilations, give 30 chest compressions, attach AED as soon as possible</td>
<td>That's right! You selected the correct response.</td>
</tr>
<tr>
<td>Give 30 compressions, open airway, provide ventilation, attach AED as soon as possible</td>
<td>Feedback when incorrect:</td>
</tr>
<tr>
<td>Open airway, check breathing, check pulse, attach AED as soon as possible</td>
<td>You did not select the correct response.</td>
</tr>
<tr>
<td>d. None of the above</td>
<td></td>
</tr>
</tbody>
</table>
1.47 While conducting the BLS Survey, you should do all of the following except:

(Multiple Choice, 10 points, 1 attempt permitted)
3. **While conducting the BLS Survey, you should do all of the following except:**

- a. Check patient responsiveness
- b. Active emergency response system
- c. Open the airway
- d. Get an AED

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Check patient responsiveness</td>
</tr>
<tr>
<td>b.</td>
<td>Active emergency response system</td>
</tr>
<tr>
<td>X c.</td>
<td>Open the airway</td>
</tr>
<tr>
<td></td>
<td>d. Get an AED</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
1.48 After providing a shock with an AED you should:

(Multiple Choice, 10 points, 1 attempt permitted)
4. After providing a shock with an AED you should:

- a. Start CPR, beginning with chest compressions
- b. Check a pulse
- c. Give a rescue breath
- d. Let the AED reanalyze the rhythm

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Start CPR, beginning with chest compressions</td>
</tr>
<tr>
<td></td>
<td>b. Check a pulse</td>
</tr>
<tr>
<td></td>
<td>c. Give a rescue breath</td>
</tr>
<tr>
<td></td>
<td>d. Let the AED reanalyze the rhythm</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
1.49 The most important intervention with witnessed sudden cardiac arrest is:

(Multiple Choice, 10 points, unlimited attempts permitted)
5. **The most important intervention with witnessed sudden cardiac arrest is:**

   - a. Early defibrillation
   - b. Effective chest compressions
   - c. Early activation of EMS
   - d. Rapid use of resuscitation drugs

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Early defibrillation</td>
</tr>
<tr>
<td></td>
<td>b. Effective chest compressions</td>
</tr>
<tr>
<td></td>
<td>c. Early activation of EMS</td>
</tr>
<tr>
<td></td>
<td>d. Rapid use of resuscitation drugs</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

5. The most important intervention with witnessed sudden cardiac arrest is:

- a. Early defibrillation
- b. Effective drug therapy
- c. Early defibrillation
- d. Rapid transport

Correct

That's right! You selected the correct response.

Continue

Incorrect (Slide Layer)

5. The most important intervention with witnessed sudden cardiac arrest is:

- a. Early defibrillation
- b. Effective drug therapy
- c. Early defibrillation
- d. Rapid transport

Incorrect

You did not select the correct response.

Continue
1.50 The most important algorithm to know for adult resuscitation is:

(Multiple Choice, 10 points, 1 attempt permitted)

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Bradycardia</td>
</tr>
</tbody>
</table>
b. PEA

c. Tachycardia

X d. Cardiac Arrest

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
Incorrect (Slide Layer)

6. The most important algorithm to know for adult resuscitation is:
   - a. Bradycardia
   - b. PEA
   - c. Tachycardia
   - d. Carotid

Incorrect
You did not select the correct response.
Continue

1.51 Typically, suctioning attempts in ACLS situations should be:

(Multiple Choice, 10 points, 1 attempt permitted)

7. Typically, suctioning attempts in ACLS situations should be:
   - a. 10 seconds or less
   - b. 20 seconds or less
   - c. 5 seconds or less
   - d. No more than 20 seconds
Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. 10 seconds or less</td>
</tr>
<tr>
<td></td>
<td>b. 20 seconds or less</td>
</tr>
<tr>
<td></td>
<td>c. 5 seconds or less</td>
</tr>
<tr>
<td></td>
<td>d. No more than 20 seconds</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

7. Typically, suctioning attempts in ACLS situations should be:

- a. 10 seconds or less
- b. 20 seconds or less
- c. 5 seconds or less
- d. No more than 20 seconds

Correct

That's right! You selected the correct response.

Continue
1.52 You find an unresponsive patient who is not breathing. After activating the emergency response system, you determine there is no pulse. What is your next action?

(Multiple Choice, 10 points, 1 attempt permitted)
<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Call for help</td>
<td></td>
</tr>
<tr>
<td>X b. Start chest compressions of at least 100 per minute</td>
<td></td>
</tr>
<tr>
<td>c. Start chest compressions of at least 80 per minute</td>
<td></td>
</tr>
<tr>
<td>d. Give two breaths and then start chest compressions</td>
<td></td>
</tr>
<tr>
<td>e. Give 1 breath every 5-6 seconds</td>
<td></td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

8. You find an unresponsive patient who is not breathing. After activating the emergency response system, you determine there is no pulse. What is your next action?

- a. Call for help
- b. Start compressions of at least 100 per minute
- c. Start compressions of at least 80 per minute
- d. Give two breaths and then start compressions
- e. Give 1 breath every 5-6 seconds

That's right! You selected the correct response.

Continue
1.53 You have completed 2 minutes of CPR. The ECG monitor displays regular narrow complex QRS complexes, but the patient has no pulse. Your partner resumes chest compressions and an IV is in place. What management step is your next priority?

(Multiple Choice, 10 points, 1 attempt permitted)
<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Administer 1 mg of epinephrine</td>
</tr>
<tr>
<td></td>
<td>b. Administer 20 units of vasopressin</td>
</tr>
<tr>
<td></td>
<td>c. Administer 1 mg of atropine</td>
</tr>
<tr>
<td></td>
<td>d. Administer 2 mg of magnesium</td>
</tr>
<tr>
<td></td>
<td>e. Cardioversion</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

9. You have completed 2 minutes of CPR. The ECG monitor displays regular narrow complex QRS complexes, but the patient has no pulse. Your partner resumes chest compressions and an IV is in place. What management step is your next priority?

- a. Administer 1 mg of epinephrine
- b. Administer 20 units of vasopressin
- c. Administer 1 mg of atropine
- d. Administer 2 mg of magnesium
- e. Cardioversion

Correct

That's right! You selected the correct response.

*Continue*
1.54 During a pause in CPR, you see a narrow complex rhythm on the monitor. The patient has no pulse. What is the next action?

(Multiple Choice, 10 points, 1 attempt permitted)
Correct Choice

| X | a. Resume compressions |
|   | b. Synchronized cardioversion |
|   | c. Defibrillation cardioversion |
|   | d. Rescue breathing |
|   | e. Administer 1 mg epinephrine |

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

10. During a pause in CPR, you see a narrow complex rhythm on the monitor. The patient has no pulse. What is the next action?

- a. Resume compressions
- b. Synchronized cardioversion
- c. Defibrillation cardioversion
- d. Rescue breathing
- e. Administer 1 mg epinephrine

Correct

That's right! You selected the correct response.

Continue
Incorrect (Slide Layer)

10. During a pause in CPR, you see a narrow complex rhythm on the monitor. The patient has no pulse. What is the next action?

   a. Resume compressions
   b. Syncope
   c. Defibrillation
   d. Recheck the pulse
   e. Administer vasopressors

Incorrect
You did not select the correct response.

Continue

1.55 Which of the following is not a symptom of unstable tachycardia?

(Multiple Choice, 10 points, 1 attempt permitted)

11. Which of the following is not a symptom of unstable tachycardia?

   a. Shortness of breath
   b. Blurred vision
   c. Altered mental status
   d. Fatigue

Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Shortness of breath</td>
</tr>
</tbody>
</table>
b. Blurred vision

c. Altered mental status

d. Fatigue

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)
1.56 A rhythm disorder with a heart rate of less than 60 bpm is
__________.

(Multiple Choice, 10 points, unlimited attempts permitted)
<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Acute Coronary Syndrome</td>
</tr>
<tr>
<td>X</td>
<td>b. Bradycardia</td>
</tr>
<tr>
<td></td>
<td>c. Pulseless Electric Activity</td>
</tr>
<tr>
<td></td>
<td>d. Ventricular Fibrillation</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**
1.57 Which of the following is a recommended agent to be administered to patients under evaluation for unstable tachycardia?

(Multiple Choice, 10 points, 1 attempt permitted)
**13. Which of the following is a recommended agent to be administered to patients under evaluation for unstable tachycardia?**

- a. No agents are recommended
- b. Morphine
- c. Oxygen
- d. Aspirin

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. No agents are recommended</td>
</tr>
<tr>
<td></td>
<td>b. Morphine</td>
</tr>
<tr>
<td></td>
<td>c. Oxygen</td>
</tr>
<tr>
<td></td>
<td>d. Aspirin</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

13. Which of the following is a recommended agent to be administered to patients under evaluation for unstable tachycardia?

- a. No agents are recommended
- b. Morphine
- c. OxyContin
- d. Aspirin

That's right! You selected the correct response.

Incorrect (Slide Layer)

13. Which of the following is a recommended agent to be administered to patients under evaluation for unstable tachycardia?

- a. No agents are recommended
- b. Morphine
- c. OxyContin
- d. Aspirin

You did not select the correct response.

1.58 Results Slide

(Results Slide, 0 points, 1 attempt permitted)
### Results for

1. **45** In a case of a patient in respiratory arrest with a pulse, how many breaths do you give per minute?

1. **46** According to new 2010 guidelines for CPR, which of the following is in the correct order for the patient with sudden cardiac arrest?

1. **47** While conducting the BLS Survey, you should do all of the following except:

1. **48** After providing a shock with an AED you should:

1. **49** The most important intervention with witnessed sudden cardiac arrest is:

1. **50** The most important algorithm to know for adult resuscitation is:

1. **51** Typically, suctioning attempts in ACLS situations should be:

1. **52** You find an unresponsive patient who is not breathing. After activating the emergency response system, you determine there is no pulse. What is your next action?
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.53 You have completed 2 minutes of CPR. The ECG monitor displays regular narrow complex QRS complexes, but the patient has no pulse. Your partner resumes chest compressions and an IV is in place. What management step is your next priority?</td>
<td></td>
</tr>
<tr>
<td>1.54 During a pause in CPR, you see a narrow complex rhythm on the monitor. The patient has no pulse. What is the next action?</td>
<td></td>
</tr>
<tr>
<td>1.55 Which of the following is not a symptom of unstable tachycardia?</td>
<td></td>
</tr>
<tr>
<td>1.56 A rhythm disorder with a heart rate of less than 60 bpm is ____________ .</td>
<td></td>
</tr>
<tr>
<td>1.57 Which of the following is a recommended agent to be administered to patients under evaluation for unstable tachycardia?</td>
<td></td>
</tr>
</tbody>
</table>

Result slide properties

Passing Score 80%
Success (Slide Layer)

Results

Your Score: [Your score here]
Passing Score: [Passing score here]

Result:

Congratulations, you passed.

Retry Quiz  Exit Module

Failure (Slide Layer)

Results

Your Score: [Your score here]
Passing Score: [Passing score here]

Result:

You did not pass.

Retry Quiz  Exit Module