Pre-Lecture

I. You Are the EMT

Time: 10 Minutes

Small Group Activity/Discussion

This activity should be used to motivate students to learn about the significance and concerns associated with patients in respiratory emergencies.

Purpose

To allow students an opportunity to explore the significance and concerns associated with respiratory emergencies.

Instructor Directions

1. Direct students to read the “You Are the EMT” scenario found at the beginning of Chapter 11.
2. You may wish to assign students to a partner or a group. Direct them to review the discussion questions at the end of the scenario and prepare a response to each question. Facilitate a class dialogue centered on the discussion questions.
3. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.

Lecture

I. Anatomy of the Respiratory System

Time: 10 Minutes

Slides: 1-9

Lecture/Discussion

A. Respiratory system

1. Consists of all structures that contribute to breathing
2. Anatomic features: the upper and lower airways

B. Anatomy and function of the lung

1. Principal function of the lungs is to exchange oxygen and carbon dioxide.
2. Exchange takes place between the alveoli and the capillaries.

C. Characteristics of poor breathing

1. Poor breathing may be caused by several conditions.
   a. The pulmonary vessels are actually obstructed by fluid, infection, or collapsed air spaces.
   b. Alveoli are damaged and cannot transport gases properly.
   c. Air passages are obstructed by muscle spasm, mucus, or weakened floppy airway walls.
   d. Blood flow to the lungs is obstructed by blood clots.
   e. Pleural space is filled with air or excess fluid.
2. If these conditions continue for years, the patient’s respirations may be controlled by hypoxic drive.

D. Characteristics of normal breathing
1. A normal rate and depth
2. A regular pattern of inhalation and exhalation
3. Good audible breath sounds on both sides of the chest
4. A regular rise and fall movement on both sides of the chest
5. Movement of the abdomen

E. Signs of abnormal breathing
1. A rate of breathing that is slower than 8 breaths/min or faster than 24 breaths/min
2. Muscle retractions above the clavicles, between the ribs, and below the rib cage, especially in children
3. Pale or cyanotic skin
4. Cool, damp (clammy) skin
5. Shallow or irregular respirations
6. Pursed lips
7. Nasal flaring

II. Causes of Dyspnea

A. Dyspnea is shortness of breath or difficulty breathing.
   1. It is a common complaint and a symptom of many different conditions.
   2. If the problem is severe and the brain is deprived of oxygen, the patient may not be alert enough to complain of shortness of breath.

B. Conditions associated with dyspnea or hypoxia
   1. Infection of the upper or lower airway
      a. May affect the entire airway
      b. Some form of obstruction, either to the flow of air or to the exchange of gases
   2. Acute pulmonary edema
      a. Sometimes the heart muscle cannot circulate blood properly.
      b. The left side of the heart cannot remove blood from the lung as fast as the right side delivers it.
      c. Fluid builds up within the alveoli and in the lung tissue between the alveoli and the pulmonary capillaries.
      d. This accumulation of fluid is called pulmonary edema.
      e. Signs and symptoms consist of dyspnea with rapid, shallow respirations.
      f. Severe cases include frothy pink sputum at the nose and mouth.
      g. In most cases, patients have a history of chronic congestive heart failure.
      h. The condition may get worse if the patient stops taking medication, incurs a stressful illness, experiences a new heart attack, or has an abnormal heart rhythm.
      i. Pulmonary edema is one of the most common causes of hospital admission in the United States.
      j. Repeat bouts are common.
      k. Not all patients have heart disease; inhaling large amounts of smoke or toxic chemical fumes can produce pulmonary edema, as can traumatic injuries to the chest.
Chapter 11: Respiratory Emergencies

3. Chronic obstructive pulmonary disease (COPD)
   a. COPD affects 10% to 20% of the adult population.
   b. It is a slow process resulting in the disruption of the airways, the alveoli, and the pulmonary vessels.
   c. COPD may result from lung and airway damage from repeated infections or inhalation of toxic agents, most often from cigarette smoke.
   d. Tobacco smoke is a bronchial irritant and can create chronic bronchitis, an ongoing irritation.
      1. Bronchitis: One type of COPD in which excess mucus is constantly produced, obstructing small airways and alveoli
      2. Protective mechanisms of respiratory tract are destroyed.
   e. Chronic oxygenation problems can also lead to right heart failure and fluid retention.
      a. Pneumonia develops easily.
      b. Repeated episodes of irritation and pneumonia cause scarring in the lung and some dilation of the obstructed alveoli, leading to COPD.
   f. Emphysema is another type of COPD.
      1. The elastic material around the air spaces is lost as a result of chronic stretching of the alveoli when bronchial airways obstruct easy expulsion of gases.
      2. Smoking can also directly destroy the elasticity of the lung tissues.
   g. Most COPD patients have elements of both chronic bronchitis and emphysema.
   h. Most patients with COPD will chronically produce sputum, cough, and have difficulty expelling air from their lungs, with long expiration phases and wheezing.
      1. These patients cannot handle pulmonary infections well.
   a. Arterial oxygen level may fall rapidly.
      b. Carbon dioxide levels in the blood may rise high enough to cause sleepiness.
      c. Monitor these patients carefully.
   2. Patients with COPD usually are older than age 50.
   3. They have a history of recurring lung problems.
   4. They are almost always long-term smokers.
   5. They may complain of tightness in the chest and constant fatigue.
   6. Chests often have a barrel-like appearance.
   7. Abnormal breath sounds are symptomatic of COPD.
      a. May include crackling and rattling sounds (rales) usually associated with fluid in the lungs, but here related to the chronic scarring of small airways
      b. Rhonchi: Coarse, gravelly sounds
      c. High-pitched, whistling wheezes, expiratory sounds common to patients with asthma
      d. Frequently hard to hear and may be detected only high on the posterior chest
   8. History of patients with COPD
      a. A long history of dyspnea with a sudden increase in shortness of breath
      b. Rarely a history of chest pain
      c. Often, a recent “chest cold” with fever, and either an inability to cough up mucus or a sudden increase in the production of thick green or yellow sputum
   9. Vital signs of patients with COPD
      a. Normal blood pressure
      b. Rapid and occasionally irregular pulse
      c. Respirations may be rapid or very slow, as in carbon dioxide retention

4. Spontaneous pneumothorax
   a. Normally, the “vacuum” pressure in the pleural space keeps the lung inflated.
   b. When the surface of the lung is disrupted, air escapes into the pleural cavity. The negative vacuum pressure is lost, and the lung collapses.
   c. The accumulation of air in the pleural space is called pneumothorax.
   d. Pneumothorax is most often caused by trauma, but it can also be caused by some medical conditions without any injury. This is a “spontaneous” pneumothorax.
Chapter 11: Respiratory Emergencies

e. It may occur in patients with chronic lung infections or in people born with a weak area of the lung.
   f. Emphysema and asthma patients are at high risk for spontaneous pneumothorax.
   g. A patient becomes dyspneic (short of breath) and can complain of pleuritic chest pain (a sharp, stabbing pain on one side that is worse during breathing or with certain movements of the chest wall).
   h. You can sometimes tell that breath sounds are absent or decreased on the affected side.

5. Asthma or allergic reactions
   a. Asthma is an acute spasm of the smaller air passages called bronchioles, associated with excessive mucus production and sometimes with spasm of the bronchiolar muscles.
      1. Common but serious disease
      2. Presents with characteristic wheezing as the patient attempts to exhale through partially obstructed air passages
   b. Wheezing may be so loud that you can hear it without a stethoscope.
   c. In other cases, the airways are so blocked that no air movement is heard.
   d. In severe cases, the actual work of exhaling is very tiring, and cyanosis and/or respiratory arrest may quickly develop.
   e. Asthma affects patients of all ages and is usually the result of an allergic reaction to an inhaled, ingested, or injected substance.
   f. It may also be caused by severe emotional stress, exercise, or respiratory infections.
   g. Most patients with asthma are familiar with their symptoms and know when an attack is imminent.
   h. Listen carefully to what these patients say; they often know exactly what they need.
   i. Asthma and anaphylactic reactions may be similar.
      1. Same allergens that cause asthma attacks may cause anaphylaxis, a reaction characterized by airway swelling and dilation of blood vessels all over the body, which may lower blood pressure significantly.
      2. Anaphylaxis may be associated with widespread itching and an asthma-like condition.
      3. Airways may swell so much that breathing problems can progress from extreme difficulty in breathing to total airway obstruction in a matter of a few minutes.
   j. Hay fever is a seasonal response to allergens.
      1. Milder and more common allergy problem
      2. Does not produce major emergency problems
      3. Stuffy or runny nose and sneezing

6. Pleural effusion
   a. A pleural effusion is a collection of fluid outside the lung on one or both sides of the chest.
   b. By compressing the lung or lungs, the effusion causes dyspnea.
   c. It occurs in response to irritation, infection, or cancer.
   d. It can build up gradually or suddenly.
   e. Auscultation reveals decreased breath sounds over the region of the chest where fluid has moved the lung away from the chest wall.
   f. Patients frequently feel better if they are sitting upright.

7. Mechanical obstruction of the airway
   a. Be prepared to treat quickly.
   b. In unconscious patients, airway obstruction may be the result of the position of the head, obstruction by the tongue, or aspiration of vomitus or a foreign object.
   c. Opening the airway with the head-tilt maneuver may solve the problem.
   d. Always consider upper airway obstruction from a foreign body first in patients who were eating.
   e. Young children might have swallowed and choked on a small object.

8. Pulmonary embolism
   a. An embolus is anything in the circulatory system that moves from its point of origin to a distant site and lodges there.
   b. Circulation can be completely cut off or at least markedly decreased.
   c. Emboli can be fragments of blood clots in an artery or vein that break off and travel through the bloodstream.
d. They can also be foreign bodies that enter the circulation, such as a bullet or a bubble of air.
e. A pulmonary embolism is a blood clot that breaks off and circulates through the venous system.
   1. It moves through the right side of the heart and into the pulmonary artery, where it becomes lodged, decreasing or blocking
      blood flow.
   2. No exchange of oxygen or carbon dioxide takes place in the areas of blocked blood flow because there is no effective
      circulation.
   3. It may occur as a result of damage to the lining of vessels, a tendency for blood to clot unusually fast, or most often, slow
      blood flow in a lower extremity.
   4. Patients whose legs are immobilized after a fracture or recent surgery
      are at risk.
   5. It rarely occurs in active, healthy individuals.
f. Although pulmonary emboli are fairly common, they are difficult to diagnose; 10% are immediately fatal.
g. Signs and symptoms
   1. Dyspnea
   2. Acute pleuritic chest pain
   3. Hemoptysis (coughing up blood)
   4. Cyanosis
   5. Tachypnea
   6. Varying degrees of hypoxia
h. If the embolus is large enough, it can completely obstruct the output of blood flow from the right side of the heart, resulting in
   sudden death.

9. Hyperventilation and hyperventilation syndrome
a. Hyperventilation is overbreathing to the point that the level of arterial carbon dioxide falls below normal.
b. It may indicate a major, life-threatening illness, such as:
   1. A very high blood glucose level in a patient with diabetes
   2. Aspirin poisoning
   3. Severe infection
c. The body is trying to compensate for acidosis, which is a buildup of excess acid in the blood or body tissues.
d. In a healthy person, blood acidity can be diminished by excessive breathing, because it “blows off” too much carbon dioxide,
   resulting in alkalosis.
e. Alkalosis is the buildup of excess base (lack of acids) in the body fluids.
f. Alkalosis causes many of the symptoms associated with hyperventilation syndrome, including:
   1. Anxiety
   2. Dizziness
   3. Numbness
   4. Tingling of the hands and feet
   5. A sense of dyspnea despite rapid breathing
g. Hyperventilation can be the response to illness and a buildup of acids, but hyperventilation syndrome is the not the same thing.
h. Hyperventilation syndrome occurs during psychological stress.
i. All patients who are hyperventilating should be given supplemental oxygen and transported to the hospital, where physicians
   will make a medical diagnosis.

III. Treatment of Dyspnea

<table>
<thead>
<tr>
<th>Time: 45 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slides: 20-42</td>
</tr>
<tr>
<td>Lecture/Discussion</td>
</tr>
<tr>
<td>DOT Ref 4-2-II</td>
</tr>
<tr>
<td>DOT Ref 4-2-III</td>
</tr>
</tbody>
</table>

DOT Ref 4-2-V
A. Do not withhold oxygen for fear of depressing or stopping breathing in a patient with COPD who needs oxygen.

B. If respirations are slow and the patient becomes unconscious, you should assist breathing.

C. Steps in caring for the patient in respiratory distress

1. During your initial approach, ask:
   a. Is the patient conscious?
   b. Is he or she breathing?
   c. If not, you must take action.
   d. Assess the airway and give two ventilations.

2. As you ventilate, ask another series of questions:
   a. Is air going into the lungs?
   b. When you compress the BVM device, does the chest wall expand?
   c. When you release the bag, does the chest go back down?

3. Give breaths at roughly the same rate as the patient’s normal breathing.

4. Breathing for the patient too rapidly can cause harm.

5. Assess the pulse.
   a. If the pulse is too fast or too slow, the patient may not be receiving enough oxygen.
   b. Recheck everything.

6. Signs and symptoms of dyspnea
   a. Difficulty breathing
   b. Anxiety or restlessness
   c. Decreased respirations (less than 8 breaths/min)
   d. Cyanosis
   e. Abnormal breath sounds (wheezing, gurgling, snoring, stridor, crowing)
   f. Inability to say more than a few words between breaths
   g. Use of accessory muscles to assist breathing
   h. Altered mental status
   i. Excessive coughing
   j. Irregular breathing
   k. Sitting up/tripod position
   l. Barrel-shaped chest
   m. Pale conjunctivae
   n. Increased pulse and respirations

7. Focused history and physical examination
   a. Pay close attention to OPQRST.
   b. Find out what the patient has already done for the breathing problem.
      1. Has he or she used a prescribed inhaler?
      2. When was it used last?
      3. How many doses?
      4. Did the patient use more than one inhaler?
   c. Find out if the patient has any allergies or a history of drug reactions.

8. Emergency medical care
   a. Administer supplemental oxygen at a rate of 10 to 15 L/min via nonrebreathing mask.
   b. Patients with longstanding COPD may be started on low-flow oxygen at 2 L/min; increase the flow until the patient begins to improve.
   c. Always err on the side of more oxygen if in doubt.
   d. You may be able to help patients use their own prescribed inhalers; consult medical control.

D. Prescribed inhalers
1. Most common medications used for shortness of breath are called inhaled beta-agonists, which dilate breathing passages.
   a. Trade names
      1. Proventil
      2. Ventolin
      3. Alupent
      4. Metaprel
      5. Brethine
   b. Generic names
      1. Proventil and Ventolin: albuterol
      2. Alupent and Metaprel: metaproterenol
      3. Brethine: terbutaline

2. Actions
   a. Relax the muscles that surround the bronchioles in the lungs
   b. Enlarge the airways leading to easier passage of air

3. Common side effects
   a. Increased pulse rate
   b. Nervousness
   c. Muscle tremors

4. Before administering metered-dose inhaler (MDI) medication, you should:
   a. Read the label carefully to make sure that the medication is to be used for shortness of breath.
   b. Verify that it has been prescribed by a physician for that patient.
   c. Consult medical control.
   d. Make sure that the medication is indicated.
   e. Check that there are no contraindications for its use, such as:
      1. Patient is unable to help coordinate inhalation.
      2. Medication is not prescribed for this patient.
      3. You did not obtain permission from medical control or local protocol.
      4. The patient had already taken the maximum prescribed dose before your arrival.

5. Steps in the administration of metered-dose inhaler medication
   a. Obtain an order from medical control or local protocol.
   b. Check that you have the right medication, right patient, and right route.
   c. Make sure the patient is alert enough to use the inhaler.
   d. Check the expiration date.
   e. Check to see whether the patient has already taken any doses.
   f. Make sure the inhaler is room temperature or warmer.
   g. Shake inhaler vigorously several times.
   h. Stop oxygen and remove any mask from the patient’s face.
   i. Ask patient to exhale deeply and put lips around the opening.
   j. If the patient has a spacer, use it.
   k. Have patient depress inhaler as he or she begins to inhale deeply.
   l. Instruct the patient to hold his or her breath as long as they comfortably can.
   m. Continue administration of oxygen.
   n. Have patient breathe a few times, then repeat second dose per medical control or local protocol.

6. Steps in reassessment
   a. Carefully watch for shortness of breath.
   b. About 5 minutes after administering the medication, obtain the vital signs again and perform a focused reassessment.
   c. Ask the patient whether the treatment made any difference.
   d. Look at the patient’s chest to see whether accessory muscles are being used.
   e. Listen to the patient’s speech pattern.
   f. The patient may get worse, instead of better; be prepared.
E. Treatment of specific conditions

1. Infection of the upper or lower airway
   a. Except for pneumonia, acute bronchitis, or epiglottitis, this is rarely serious.
   b. Administer warm, humidified oxygen.
   c. Do not attempt to suction the airway or place an oropharyngeal airway in a patient with suspected epiglottitis.
   d. Transport patient promptly.
   e. Allow the patient to sit in the position that is most comfortable.

2. Acute pulmonary edema
   a. Administer 100% oxygen, if necessary, and carefully suction any secretions from the airway.
   b. Provide prompt transport.
   c. The best position for a conscious patient is the one in which it is easiest to breathe; usually, this is sitting up.
   d. An artificial airway is rarely needed because no upper airway obstruction exists.
   e. An unconscious patient may require full ventilatory support.

3. Chronic obstructive pulmonary disease
   a. Assist with prescribed inhaler if patient has one.
   b. Transport as promptly as possible, allowing the patient to sit upright if it is most comfortable.

4. Spontaneous pneumothorax
   a. Provide supplemental oxygen.
   b. Transport promptly; allow patient to sit up if it is more comfortable.
   c. Monitor carefully en route.

5. Asthma or allergic reactions
   a. Obtain history.
   b. Assess vital signs.
   c. Assist with patient’s prescribed inhaler if it is available.
   d. Administer oxygen.
   e. Allow the patient to sit upright.
   f. Be reassuring.
   g. Ask questions about how and when the symptoms began.
   h. Be prepared to ventilate and provide supplemental oxygen.
   i. If the patient is unconscious:
      1. Look for a medical identification tag.
      2. Provide prompt transport to the emergency department.
   j. If the patient carries medication, you may help with its administration, as directed by local protocol.
   k. Prolonged asthma attacks unrelieved by epinephrine may progress into status asthmaticus.
      1. This is a true emergency.
      2. Give oxygen and transport immediately.
   l. The effort to breathe during an asthma attack may affect the patient.
      1. Breathing can be very tiring, and the patient may be exhausted.
      2. Patient may have stopped feeling anxious or even struggling to breathe.
      3. This is a very critical stage because the patient is likely to stop breathing.
      4. Aggressive airway management, oxygen administration, and prompt transport are essential.

6. Pleural effusion
   a. Definitive treatment must be performed in the hospital.
   b. Provide oxygen and support measures. Transport promptly.

7. Mechanical obstruction of the airway
   a. Clear the upper airway.
   b. Administer supplemental oxygen.
   c. Transport promptly.
8. Pulmonary embolism
   a. Supplemental oxygen is mandatory.
   b. Place patient in a comfortable position, usually sitting.
   c. Assist breathing as necessary.
   d. Any blood that has been coughed up should be cleared from the airway.
   e. Expect rapid, possibly irregular, heartbeat.
   f. Transport promptly.

9. Hyperventilation
   a. Complete an initial assessment and obtain a history of the event.
   b. Always assume serious underlying problems even if you suspect stress.
   c. Do not have the patient breathe into a paper bag.
   d. Treatment
      1. Reassuring the patient.
      2. Administering supplemental oxygen.
      3. Providing prompt transport.

10. Geriatric needs
    a. Aging alters respiratory system.
    b. Chest wall becomes less resilient.
    c. Bronchi and bronchioles lose muscle tone.
    d. Total amount of air the chest can hold is reduced.
    e. Oxygen and carbon dioxide exchange decreases.
    f. Risk of pneumonia and COPD increases.
    g. Patients may need ventilatory support.

11. Caring for children
    a. Asthma is a common childhood disease.
    b. Special considerations
       1. Retractions are easier to see than in adults.
       2. Cyanosis is a late finding.
    c. Treatment
       1. Emergency care is the same as for adults.
       2. If the child will not tolerate the mask, hold it in front of the face.
       3. Use MDIs in the same manner as for adults.

IV. Skill Drill

Time: 15 Minutes

Demonstration/Group Activity

Remember to maintain an adequate instructor-to-student ratio. A ratio of 1 instructor to 6 students is recommended by the DOT EMT-B National Standard Curriculum. Also remember that each student is to be evaluated on each skill before completing the course.

Purpose
To allow students the opportunity to observe, practice, and perform patient care skills associated with respiratory emergencies.

Materials Needed
1. BSI supplies (gloves, mask, goggles, gowns) (minimum one set per student)
2. Various metered-dose inhalers and spacers
Instructor Directions

1. Demonstrate each skill, emphasizing any critical points or procedures.
2. Based on the specific skill, assign each student to a partner or team. Provide each partner/team with necessary equipment or materials.
3. Direct students to practice each skill, using team members as patients and observers. Closely monitor the practice sessions and provide constructive comments and redirection.
4. As individual students achieve success, conduct skill proficiency exams. Students who fail the exam should be given redirection and opportunity to practice before being retested.

Skills
A. Administration of a Metered-Dose Inhaler (Skill Drill 11-1)

Post-Lecture
I. Prep Kit Activities

Time: 60 Minutes

Small Group/Individual Activity/Discussion

Note: The Prep Kit contains various student-centered end-of-chapter activities designed as enhancement to the instructor’s presentation. As time permits, these activities may be presented in class. They are also designed to be used as outside/homework activities.

A. Assessment in Action

This activity is designed to assist the student in gaining a further understanding of issues surrounding respiratory emergencies. The activity incorporates both critical thinking and application of basic EMT-B knowledge.

Purpose

This activity allows the student to analyze an emergency care scenario and develop responses to critical thinking questions.

Instructor Directions

1. Direct students to read the “Assessment in Action” scenario located in the Prep Kit at the end of Chapter 11.
2. For the quiz questions, direct students to read and individually answer the quiz questions at the end of the scenario. Allow approximately 10 minutes for this part of the activity. Facilitate a class review and dialogue of the answers, allowing students to correct responses as may be needed. Use the quiz question answers noted below to assist in building this review. Allow approximately 10 minutes for this part of the activity.
3. You may also use these as individual activities and ask students to turn in their comments on a separate piece of paper.

Answers to Multiple-Choice Questions

1. Answer: B  His position and speech are specific for difficulty breathing. Vital signs tell how the cardiovascular system is compensating. A fast respiratory rate does not tell you if it is difficult to breathe. The history does not tell you anything by itself. Skin color and vital signs are not specific for difficulty breathing.
2. Answer: B  Dyspnea is difficulty breathing. Apnea is absence of breathing. Anoxia is absence of oxygen. Hyperventilation is a respiratory rate that is too fast.
3. Answer: A  Accessory muscle use are muscle retractions above the clavicles, between the ribs, and below the rib cage. Speech and respiratory rate do not tell you about accessory muscle use. The position is specific for easing the work of breathing.
4. Answer: D  This is called the tripod position because the back and the arms form a three-legged support for the upper body. Fowler’s position is a sitting position with no support by the arms. The “hunched” and “COPD” positions are not recognized positions.
5. Answer: A  The customer’s inhaler is not this patient’s inhaler and should not be used.
6. Answer: C  Normal side effects of inhalers include nervousness and fast heart rates or tachycardia. Low blood pressure and bradycardia (low heart rate) are not side effects of inhalers. Symptom relief is not a side effect; it is the desired effect.
7. Answer: D  Wheezing in a patient with asthma is the result of excessive mucus production and spasm of the smaller air passages known as bronchioles. Enlargement of the pulmonary blood vessels does not result in abnormal sounds in the chest. Excessive pleural effusions may cause diminished breath sounds. Excess fluid and scarring may cause rales and rhonchi in the lungs.

Challenging Questions Answers
8. Answer: What has most likely happened is a spontaneous pneumothorax. Patients with asthma or COPD are prone to this problem because the disease process weakens a portion of the lung wall. This weakened section has a tendency to rupture, especially after coughing, laughing, or taking a deep breath.
9. Answer: The concentration of oxygen in the blood. This is termed “hypoxic” drive. In other words, the stimulus to breathe becomes low blood oxygen levels. When high levels of oxygen are given over a long period of time, the stimulus to breathe is depressed or even eliminated. However, this should never deter you from giving oxygen to a patient that needs it. It does mean that you must observe your patient closely and be alert for decreasing respirations.
10. Answer: It would be a factor of how long the patient has had a respiratory problem. A barrel-like chest results when air has been gradually and continuously trapped within the lungs in increasing amounts over a long period of time. It usually takes a year or more for the barrel-like appearance to develop.

B. Points to Ponder
This activity will enable you to help students probe the more difficult situations that they may face. Use this as an opportunity to allow them to express differences of opinion and approach, while directing them to be thorough and decisive in their answers. Encourage challenges.

Purpose
To allow students an opportunity to apply critical thinking analysis to a given case study.

Instructor Directions
1. Direct students to read the “Points to Ponder” scenario found in the Prep Kit at the end of Chapter 11.
2. You may wish to assign students to a partner or a group and direct them to review the discussion question at the end of the scenario and prepare a response. Allow approximately 10 minutes for this part of the activity. Facilitate a class dialogue centered on the discussion point. Allow approximately 10 minutes for this part of the activity.
3. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.
4. Personally review the scenario and discussion question based on your experience and knowledge as an emergency care worker. Develop your own key points for guiding this discussion.

Scenario
You have been with your response agency for about 3 months, and you already recognize the address when you are dispatched to a “female in respiratory distress.” You respond at least once a week to Alice, who is a COPD patient. When you arrive, she is wheezing and using auxiliary muscles to breathe. Her home oxygen is on and in use and once again, she is smoking while using her oxygen. She says that this is the first time today but, by the number of butts in the ashtray next to her chair, you know that is not correct. She typically goes to the emergency department, receives a nebulizer treatment, and is released for you to pick up another day. Each time, Medicaid pays for the “ride,” and you are out of service for over an hour. This trip, she even asks if she can smoke in the ambulance. How will you feel about this woman? Will your feelings affect how you interact with her? What often happens to the assessment and care of patients who seem to be abusing the health care system?

Issues
• “Frequent Flyers”
• Patients Who Make Choices We Do Not Agree With
• Abuse of the System
• Patient Respect

C. Online Outlook
This activity requires students to have access to the Internet. This may be accomplished through personal access, employer access, or through a local educational institution. Some community colleges, universities, or adult education centers may have classrooms with Internet capability that will enable this activity to be completed in class. Check out local access points and encourage students to complete this activity as part of their ongoing reinforcement of the EMT-B knowledge and skills.

Purpose
To provide students an opportunity to reinforce chapter material through use of online Internet activities

Instructor Directions
1. Use the Internet and go to www.emtb.com. Follow the directions on the web site to access the exercises for Chapter 11.
2. Review the chapter activities and take note of desired or correct student responses.
3. As time allows, conduct an in-class review of the Internet activity and provide feedback to students as needed.
4. Be sure to check the web site before assigning this activity, as specific chapter-related activities may change from time to time.

II. Lesson Review

Time: 10 Minutes

Discussion
Note: Facilitate a review of this lesson’s major topics using the review questions as direct or overhead questions. Answers are found throughout this lesson plan with IRK references listed for each question.

A. List the common conditions associated with dyspnea. (Lecture II-B)
B. Discuss infectious diseases of the respiratory tract and their characteristics. (Lecture II-B-1; Refer to Table 11-1)
C. Describe the characteristics of COPD and the relationship between chronic bronchitis and emphysema. (Lecture II-B-3)
D. Describe anaphylaxis. (Lecture II-B-5)
E. What are the signs and symptoms of pulmonary embolism? (Lecture II-B-8)
F. What is the difference between hyperventilation and hyperventilation syndrome, and how are they each treated? (Lecture II-B-9)
G. List the steps for assisting a patient with self-administration of a metered-dose inhaler. (Lecture III-D)

III. Assignment

Time: 5 Minutes

Lecture

A. Review all materials from this lesson and be prepared for a lesson quiz to be administered (date to be determined by instructor).
B. Read Chapter 12: Cardiovascular Emergencies for the next class session.