COURSE: 25.562 Concepts of Emergency Medicine

UNIT: 14.1 Airway Management

INTRODUCTION

Annotation:

Students will demonstrate the ability to manage an airway through basic life-support skills, artificial ventilations and rescue breathing using various airway devices.

Grade(s):

	9th
X	10th
X	11th
X	12th

Time:

Five 50 minute periods

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Additional Author(s):

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Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

HS-CEM-7. Students will demonstrate the ability to manage an airway.

- Explain the rationale for basic life-support, artificial ventilation, and airway protective skills taking priority over most other basic life-support skills.
- Differentiate between the signs of adequate breathing and of inadequate breathing.
- Relate the mechanism of injury to opening the airway.
- Demonstrate opening and maintaining a patent airway for adult, child, and infant victims.

GPS Academic Standards:

None assigned

National / Local Standards / Industry / ISTE:

National Highway Safety Traffic Administration's Basic EMT Standards:

2-1.23 Explain the rationale for basic life support artificial ventilation and airway protective skills taking priority over most other basic life support skills.(A-3)

2-1.25 Demonstrate the steps in performing the head-tilt chin-lift. (P-1,2)

2-1.26 Demonstrate the steps in performing the jaw thrust.(P-1,2)

2-1.27 Demonstrate the techniques of suctioning.(P-1,2)

2-1.31 Demonstrate the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask for one and two rescuers.(P-1,2)

2-1.32 Demonstrate the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask while using the jaw thrust.(P-1,2)

2-1.35 Demonstrate how to insert an oropharyngeal (oral) airway.(P-1,2)

2-1.36 Demonstrate how to insert a nasopharyngeal (nasal) airway.(P-1,2)

UNDERSTANDINGS & GOALS

Enduring Understandings:

The students will understand the importance of maintaining adequate ventilation of a patient. They will also understand why airway is the initial concern when treating a patient in an emergency situation.

Essential Questions:

- Why is airway management crucial to patient survival?
- What are the indicators for inadequate breathing?
- What are the indicators for adequate breathing?
- How does the mechanism of injury affect the technique for opening the airway?
- What is the proper technique to open the airway of a trauma patient?

Knowledge from this Unit:

- Explain the rationale for basic life-support artificial ventilation and airway protective skills taking priority over most other basic life-support skills.
- Differentiate between the signs of adequate breathing and those of inadequate breathing.
- Relate the mechanism of injury to opening the airway.
- How and when to suction a patient
- The importance of understanding how to use a bag-valve mask
- Airway management of a patient with a tracheaostomy

Skills from this Unit:

- Demonstrate opening and maintaining a patent airway for adult, child, and infant victims.
- Demonstrate how to measure and insert a nasopharyngeal airway.
- Demonstrate how to measure and insert an oropharyngeal airway.
- Demonstrate how to ventilate a stoma
- Demonstrate suctioning
- Demonstrate proper ventilation using a bag-valve-mask

ASSESSMENT(S)

Assessment Method Type: Select one or more of the following. Please consider the type(s) of differentiated instruction you will be using in the classroom.

_____ Pre-test
_____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
_ Unit test
_____ Group project
_____ Individual project
_____ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
__ Self-check rubrics
__ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
_____ Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
x Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
_____ Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
x Constructed Responses
__ Chart good reading/writing/listening/speaking habits
_x_ Application of skills to real-life situations/scenarios
_____ Post-test

Assessment(s) Title:

Airway Management Skills Lab

Assessment(s) Description/Directions:

Students should complete a peer evaluation for skills prior to evaluation with instructor.

Attachments for Assessment(s):

Airway Management Skills: Peer Evaluation

Airway Management Skills: Instructor Evaluation

LEARNING EXPERIENCES

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

Sequence of Instruction

1. Identify the Standards. Standards should be posted in the classroom for each lesson.

HS-CEM-7. Students will demonstrate the ability to manage an airway.

2. Review Essential Questions.

- Why is airway management crucial to patient survival?
- What are the indicators for inadequate breathing?
- What are the indicators for adequate breathing?
- How does the mechanism of injury affect the technique for opening the airway?
- What is the proper technique to open the airway of a trauma patient?

3. Identify and review the unit vocabulary.

Accessory muscles
Agonal respirations
Artifical ventilation
Bag-valve mask
Cross-finger technique
Cyanosis
Finger sweeps
Head-tilt/chin-lift maneuver
Jaw thrust maneuver
Patent airway
Stoma
Retraction
Airway adjunct
Blanching
FBAO – Foreign Body Aspiration
Nasopharyngeal Airway
Occlude
Oropharyngeal Airway
Suctioning
Septum

4. Assessment Activity

Interest Approach – Mental Set

Use the following links to introduce the importance and function of the respiratory system:

http://kidshealth.org/PageManager.jsp?lic=1&article_set=59300&cat_id=20607

http://www.lungusa.org/site/c.dvLUK9O0E/b.40743/k.753C/Learn_About_Your_Respiratory_System.htm

Lesson 1

- Review GPS and Essential Question
- Review Vocabulary
- Discuss the function, role, and importance of the respiratory system
- Label/Color Respiratory Diagram
- http://www.teachervision.fen.com/respiratory-system/printable/57732.html
- Compare and contrast signs of adequate breathing vs. inadequate breathing
    - using breathing assessment graphic organizer
- Optional assignment: Students should locate and read any current medical article related to the Respiratory System and write a response to the article.

Lesson 2

- Review GPS and Essential Questions
- Review Vocabulary
- Distribute Airway opening diagram: http://www.toadspad.net/ems/cpr-head-tilt.html
- Demonstrate head-tilt/chin-lift and jaw thrust and bag-valve mask ventilation and discuss indications for each
- Partner students
- Have each set of students create a set of steps in their own words using the book, diagram, and demonstration as references.
- Distribute rubric and allow students to practice and then assess their partners' performance utilizing the rubric.

Lesson 3

- Review GPS and Essential Question
- Review Vocabulary
- Lecture and provide notes on board/overhead about indicators for airway adjuncts
- Demonstrate oral and nasopharyngeal airways

- Set-up stations for Patient Scenarios (see attachment) with required equipment to insert airway adjuncts. If you do not have enough equipment to create multiple stations, then this exercise can be modified as a written response to the scenarios.

Lesson 4

- Review GPS and Essential Question
- Review Vocabulary
- Have students outline the procedure to suctioning
- Demonstrate the correct procedure and technique for suctioning the airway.
- Allow practice time and check-off students on suctioning skills utilizing rubric

Lesson 5

- Review GPS and Essential Question
- Review Vocabulary
- The final lesson is a culminating performance assessment of all of the airway management skills (see rubrics):
    - Head-tilt/chin-lift
    - Jaw-thrust
    - BVM
    - Airway Adjuncts
    - Suctioning
- Randomly assign students to patient A or patient B
- Patient A: 45 y/o male, fell two stories off of a roof, RR 8, unequal chest rise, responsive, gurgling
    - This scenario should require the students to perform Jaw Thrust, BVM, Nasopharyngeal Airway, and Suctioning
- Patient B: 64 y/o female, unresponsive, RR 6, shallow chest rise, gurgling, no indication of injury
    - This scenario requires the student to perform head-tilt/chin-life, BVM, oropharyngeal airway, and suctioning.

Attachments for Learning Experiences:

Respiratory Diagram: http://www.teachervision.fen.com/respiratory-system/printable/57732.html

Patient Scenarios

Breathing Assessment Graphic Organizer

Airway Opening Skill Summary: http://www.toadspad.net/ems/cpr-head-tilt.html

Airway Opening: Peer Assessment Rubric:

Airway Management Performance Assessment

Notes & Reflections:

If equipment is a limitation to this lesson, then the labs can be modified to include written responses to the scenarios.

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Students will complete peer and instructor airway management skills evaluation

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

The skills evaluation requires the student to demonstrate properly opening an airway, suctioning, Bag-valve mask ventilation, inserting an oropharyngeal airway and inserting a nasopharyngeal airway. Students should be able to correctly demonstrate all airway management skills utilizing the appropriate equipment.

Attachments for Culminating Performance Task:

Airway Management Skills: Instructor Evaluation

UNIT RESOURCES

Web Resources:

http://www.nhtsa.dot.gov/

www.teachervision.fen.com

www.toadspad.net

www.kidshealth.org

Attachment(s): Supplemental files not listed in assessment, learning experiences, and performance task.

Materials & Equipment:

- Bag-Valve-Mask
- Nasopharyngeal Airways
- Oropharyngeal Airways
- Manikins/Training Heads

- Lubricant
- Suction catheters
- Suction device (not necessary)

What 21st Century Technology was used in this unit:

	Slide Show Software		Graphing Software		Audio File(s)
	Interactive Whiteboard		Calculator	x	Graphic Organizer
	Student Response System		Desktop Publishing		Image File(s)
	Web Design Software		Blog		Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		