

Name of Module:	CPAP							
Module Provider Level:		EMR		EMT	X	AEMT	X	Paramedic
Contributor(s) :	Robert S. Cole							
Instructional Setting:		Single Student			Small Group		X	Whole Class
Learning Domain(s):	X	Didactic		X	Psychomotor		X	Affective
General Description of Lesson:	EMR	N/A						
	EMT	N/A						
	AEMT	Applies (to patient assessment and management) a fundamental understanding of physiology to select and administer CPAP to a patient during an emergency, in combination with other therapies within scope of practice.						
	Paramedic	Applies (to patient assessment and management) a comprehensive understanding of physiology to select and administer CPAP an emergency, in combination with other therapies, within scope of practice.						
Objective(s) of Lesson:	EMR	N/A						
	EMT	N/A						
	AEMT	As paramedic						
	Paramedic	<p>At the completion of this lesson, the ALS provider will be able to:</p> <p>Psychomotor</p> <p>1.1 Given a CPAP device, demonstrate the correct assembly prior to patient administration.</p> <p>1.1.1 Using a device similar to the ones providers will be using in the field.</p> <p>1.1.2 Using protocols and parameters consistent to the ones providers will be using in the field.</p> <p>1.2 Given a CPAP device, demonstrate proper placement on a simulated patient (to include proper mask seal).</p> <p>1.3 Given a CPAP Device, demonstrate correct assembly combining CPAP with a nebulizer, prior to patient administration. (may be omitted if not applicable for the device in question)</p> <p>Cognitive</p> <p>1.4 Define the letters in the pneumonic CPAP</p> <p>1.5 List three negative physiologic effects of exacerbation of COPD</p> <p>1.6 List indications for the use of CPAP</p> <p>1.7 List at least four precautions for the use of CPAP</p>						

		<p>1.8 List at least four contraindications against the use of CPAP</p> <p>1.9 Lists at least four criteria for discontinuing CPAP therapy Describe documentation requirements for CPAP Affective</p> <p>1.10 Explain the importance of proper documentation of CPAP use.</p>			
Assessment type(s):	X	Quiz		X	Observation
	X	Lab Skill Sheet			Other:
Describe the assessment plan:	<p>A quiz can be included to test the students' cognitive retention.</p> <p>The students should follow the skill sheets as they practice the psychomotor skills. A 6 student to 1 instructor ratio should be followed as the skills are practiced.</p>				
Describe electronic resource(s) used in this plan:	Powerpoint for Instructors-includes some instructor notes				
Materials and Resources used by teachers and students:	<ul style="list-style-type: none"> ▪ Powerpoint for instructors ▪ Skill sheets for specific CPAP device approved by medical director or generic supplied psychomotor skills check sheet. ▪ State CPAP protocol or agency specific protocols. ▪ CPAP device (s) similar to one that will be used by providers in field. Oxygen source and system similar to one that will be used by providers in the field. ▪ Stethoscope, blood pressure cuffs, SPCO2, and similar disgnositc equipment. 				
Teacher Procedure:	List the objectives of the course. These are included in the powerpoint presentation. Start with the powerpoint presentation and include any supportive information that may be applicable to your service. Use the skill sheet provided for skills practicing. Give one or more scenarios to give the students the chance to apply their knowledge to a possible case they may encounter.				
Student Tasks:	Quiz and psychomotor assessment				
Time Required:	# of class periods:	1	# of minutes per class period:	120-240 minutes	
Resources:	<p>CPAP Power Point Presentation</p> <p>CPAP recommended Skill Evaluation Sheets, or locally approved skill sheets.</p> <p>“Idaho Continuous Positive Airway Pressure” suggested protocol, or locally approved medical protocol</p> <p>Local Protocols and training materials</p> <p>Device Specific operating manuals and training materials.</p>				

Idaho Continuous Positive Airway Pressure Training Module

Introduction

The estimated time for this module of training is 2-3 hours.

Training Materials

CPAP Power Point Presentation

CPAP recommended Skill Evaluation Sheets, or locally approved skill sheets.

“Idaho Continuous Positive Airway Pressure” suggested protocol, or locally approved medical protocol

Local Protocols and training materials

Instructor Selection

To teach this course, an instructor must be licensed at or above the level they intend to teach, and be approved by the program director to teach CPAP. If this module is to be taught by a guest instructor who is not a state certified EMS instructor (such as a respiratory therapist) then a state instructor must be present to answer any EMS specific questions.

The instructor for this educational module cannot be a sales representative although the sales representative can be present to demonstrate the actual device.

This module is divided between a lecture, facilitated group exercises, and skills practice. A power point presentation has been constructed, but it should be noted that not every instructor will utilize it. Furthermore, instructors may tailor this presentation to meet the educational needs of a specific CPAP device or the license level or educational background of the targeted audience. Minimum objectives as defined in this lesson plan must be met, and the skills check off sheet (or equivalent approved by program medical director) must be completed.

Equipment

This module requires the use of a CPAP system, preferably the model that the participants will be using at their respective services. Instructors should have access to an appropriate number of devices such that facilitated group practice sessions can be employed and each student will have the opportunity to familiarize him/herself with the a device per the psychomotor objectives described below.

Note also that most CPAP systems used in EMS are powered by oxygen. Therefore instructors must have appropriate quantities of oxygen and the required delivery devices on hand for the course.

Instructors may choose to focus on the specific device selected by a service or review the operation of multiple devices. However, it should be noted that prior to using CPAP a provider must be able to demonstrate the psychomotor competencies outlined above on the specific device his service chooses to utilize.

A Note on specific CPAP delivery devices: This lesson plan is designed to be a general review of CPAP and is not intended to be specific to any one system. When teaching with a specific device, instructors must tailor their presentation and the required psychomotor objectives to the manufacturer's guidelines for the use of the individual device.

Lesson Plan

- I. Introduction
- II. Background
 - a. What is CPAP?
 - b. History of CPAP
 - i. Boussignac CPAP System History
 - c. Types of CPAP-Makes and Models in EMS (Brief Overview)
- III. Pathophysiology
 - a. Vital Terminology
 - i. Tidal Volume (Vt)
 - ii. Minute Volume (Vm)
 - iii. Functional Reserve Capacity (FRC)
 - iv. Inspired Oxygen (FiO₂)
 - v. Work of Breathing (WOB)
 - b. Airway and Respiratory Anatomy
 - c. Airway and Respiratory Physiology
 - i. Pressure Gradient and FiO₂
 - ii. Oxygen Saturation Curve
 - iii. Increasing the FRC
 - iv. Decreasing WOB
 - d. Airway and Respiratory Pathology
 - i. CHF
 - ii. COPD
 - iii. Asthma
 - iv. Pneumonia
 - v. Near Drowning
 - vi. Other clinical uses of CPAP
 - e. Physiology of CPAP
 - f. Administration of Medications by CPAP
- IV. Use of CPAP by EMS
 - a. Goals of therapy
 - b. Age (>8 years of age)
 - i. Local protocols may differ
 - c. Indications
 - d. Contraindications/Exclusion criteria
 - i. Physiologic
 - ii. Pathologic
 - e. Cautions
 - f. Administration
 - g. Complications
 - h. Discontinuing CPAP
 - i. Documentation
 - i. Modified Borg Scale
- V. EMS System Implementations and Considerations
 - a. Oxygen source and supply

- b. Duration of transport
- c. Discontinuing of CPAP
- d. CPAP and Intubation
- e. Idaho POST/DNR Concerns
- VI. Research Review
- VII. Summery
- VIII. Facilitated Group Practice: Device specific orientation and skills practice
- IX. Skills Check Off
- X. Written Test