



HEALTHCARE SCIENCE

COURSE: 25.562 Concepts of Emergency Medicine

UNIT: 15.1 Patient Assessment/Vital Signs



INTRODUCTION

Annotation:

In this unit, the student will learn the techniques to measure vital signs as well as the normal limits for each part of vital signs which consist of Skin Temperature, Pulse, Respiration and Blood Pressure. The teacher will demonstrate the correct method to obtain each vital sign. Abnormal readings and recordings will be discussed and students will practice recording each vital sign.

Grade(s):

<input type="checkbox"/>	9 th
<input checked="" type="checkbox"/>	10 th
<input checked="" type="checkbox"/>	11 th
<input checked="" type="checkbox"/>	12 th

Time:

Ten 50 minute periods

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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: Please list the standard and elements covered.

HS-CEM-8:

Students will accurately assess a patient's need for treatment.

i. Demonstrate the ability to accurately assess, record, and report vital signs.

GPS Academic Standards:

SAP1 – Students will analyze anatomical structures in relationship to their physiology functions.

ELA10C – The student demonstrates understanding and control of the rules of the English language, realizing that usage involves the appropriate application of conventions and grammar in both written and spoken formats.

CTAE-FS -3 Communications: Learners use various communication skills in expressing and interpreting information.

CTAE-FS- 4 Problem Solving and Critical Thinking: Learners define and solve problems, and use problem-solving and improvement methods and tools.

CTAE-FS-5 Information Technology Applications: Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

CTAE-FS-6 Systems: Learners understand a variety of organization structures and functions.

CTAE-FS-7 Safety, Health and Environment: Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

CTAE FS- 8 Leadership and Teamwork: Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

National / Local Standards / Industry / ISTE:

Module 3: Patient Assessment

Lesson 3-1: Patient Assessment

United States Department of Transportation

National Highway Traffic Safety Administration

First Responder: National Standard Curriculum

3-8

5. Review airway patency and breathing assessment.
7. Demonstrate obtaining radial, carotid, and brachial pulses.



UNDERSTANDINGS & GOALS

Enduring Understandings:

Vital signs measurement is very important in assessing patients and can help provide a snapshot of a patient's condition. It is important that first responders understand the value of taking measurements using correct technique and are measured accurately.

Essential Questions:

- How are vital signs assessed, recorded and reported accurately?
- What are the signs and symptoms of abnormal vital signs?
- How would you measure temperature on a victim of an illness on the scene?

Knowledge from this Unit: Factual information.

- Students will know how to measure pulse, respiration and blood pressure.
- Students will know how to assess skin temperature.
- Students will know the normal limits of each vital sign.
- Student will be able to identify at least 3 causes of abnormal vital signs.
- Student will be able to identify signs and symptoms of abnormal vital signs.
- Students will identify the equipment needed to measure each vital sign.

Skills from this Unit: Performance.

- Students will correctly use equipment to measure vital signs
- Students will perform assessment of pulse: carotid and radial.
- Students will perform assessment of respirations
- Students will perform assessment of skin temperature
- Students will perform assessment of blood pressure
- Students will perform proper recording of all vital signs



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
- ☒ 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
- ☒ Constructed Responses
 - ☒ Chart good reading/writing/listening/speaking habits
 - ☒ Application of skills to real-life situations/scenarios
- ☒ Post-test

Assessment(s) Title:

- Pulse Test
- Respiration Test
- Blood Pressure Test
- Vital Signs Final Test

Assessment(s) Description/Directions:

The pulse test, respiration test & blood pressure test are taken from the worksheets. This can be used as a tool to gradually get the students to obtain information about the pulse before the final test on vital signs. The Vital Signs test is a multiple choice, true-false assessment.

Attachments for Assessment(s): Please list.

- Pulse Test
- Respiration Test
- Blood Pressure Test
- Vital Signs Final Test



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-8: Students will accurately assess a patient's need for treatment.

- i. Demonstrate the ability to accurately assess, record, and report vital signs.

2. Review Essential Questions.

- How are vital signs assessed and recorded and reported accurately?
- What are the signs and symptoms of abnormal vital signs?
- How would you measure temperature on a victim of an illness on the scene?

3. Identify and review the unit vocabulary.

Terminology for Vital Signs

1. **Afebrile** - without a fever
2. **Arrhythmias** – irregular heartbeat
3. **Auscultation** – to hear
4. **Axillary** - armpit
5. **Dehydration** - condition in which fluid output is greater than fluid intake.
6. **Diastolic pressure** - pressure in the arteries when the heart is at rest

7. **Baseline Vital Signs** – The initial set of vital signs taken on the victim. Used for comparison for later reading & recordings.
8. **Fahrenheit** - a measure of heat; scale used to express temperature
9. **Febrile** - having a fever
10. **Hyperthermia** - a greatly elevated temperature
11. **Hypothermia** - a body temperature of 95 degrees F or below.
12. **Palpate** – to feel
13. **Pulse** – pressure of the blood pushing against the wall of an artery as the heartbeats. (**Apical Pulse** – auscultation of heart beat using a stethoscope placed over the apex of the heart.)
14. **Skin Temperature** – a method used by placing the bare skin on the back of the first responders' hand to the victims' forehead or abdomen bare skin to palpate an indication of body temperature.
15. **Systolic pressure** – pressure in the arteries when the heart contracts.
16. **Temperature**- balance between heat lost and gained
17. **Tympanic Thermometer** - electronic probe used in the ear; may be set to determine oral, rectal, and surface temperatures.

4. Assessment Activity.

Interest approach – May ask the students: “Has anyone had the EMS personnel assess their vital signs?”

Distribute the crossword puzzle for the students to complete. This is another introduction of terms used in this unit. After the students complete, review the answers.

Follow the steps below for presentation of the materials for vital signs.

1. Pulse Outline
2. Pulse Worksheet
3. Multimedia Pulse Presentation - Show the Pulse Project Multimedia presentation. This is a multimedia presentation about the pulse, pulse sites, changes in pulse rate, creating a graph, & how to measure and record a pulse. Another tool that is included in this lesson plan is the lub-dub cartoon picture. There is a link inside of the pulse project which illustrates the contraction of the heart for the students to color.
4. Demonstrate Pulse Taking
5. Pulse Test

6. Respiration Outline /Lecture
7. Respiration Worksheet – Review and Discussion
8. Demonstrate Respiration counting
9. Student Practice
10. Respiration Test
11. Blood Pressure Worksheet – using classroom textbook and or outline lecture
12. *This item can be used as a supplement* to teaching blood pressure if time allows. Hand out the instructions for “WebQuest for Blood Pressure” – students will develop a brochure about B/P using the guidelines within the WebQuest.
13. Class Discussion using the brochures
14. Blood Pressure Test
15. Have students practice taking a complete set of vital signs in preparation for final check-off and record on the V/S recording sheet.
16. Final Skill Check Off
17. VS TEST

Attachments for Learning Experiences: Please list.

- Pulse Outline
- Pulse Site Picture to Label
- Pulse Project Multimedia presentation
- Respiration Outline
- Respiration Worksheet
- Blood Pressure Outline
- Blood Pressure Worksheet
- Blood Pressure Gauge Worksheet
- Vital Sign Recording Sheet

Notes & Reflections:

Temperature is checked in the field using the palpating method or by touching. There is not a skill check off for this task but an item that the first responder would perform by touching while performing an initial assessment. As a Healthcare Science instructor, you may want to add temperature measurement using the lesson plan from the NE content on the previous completed lesson plans. On the check off sheet that is included in this lesson, temperature is included. The instructor may remove and or alter the lesson plan as needed for your class setting.



CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

- Check-Off for BP Skill Sheet
- Apical and Radial Pulse Check-Off Sheet
- Respiration Check Off Sheet
- V/S Check Off Sheet

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Step by step guide for the student to follow to learn the proper steps to obtain each vital sign.

Attachments for Culminating Performance Task: Please list.

- Check-Off for BP Skill Sheet
- Apical and Radial Pulse Check-Off Sheet
- Respiration Check-Off Sheet
- V/S Check Off Sheet



UNIT RESOURCES

Web Resources:

<http://health.howstuffworks.com/adam-200079.htm> - a website about how blood pressure equipment works and related topics to blood pressure

[Blood Pressure Test](#)

healthguide.howstuffworks.com

[Human Atlas: Blood Pressure](#)

43 sec

videos.howstuffworks.com

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

- LUBDUB Cartoon of a heart beat
- Crossword Term Vital Sign
- Crossword Term Answer Sheet

- Optional materials if time allows. These can be used as supplemental projects.
- WebQuest BP Worksheet
- Making a BP Brochure
- Rubric for BP Brochure

Materials & Equipment:

- Classroom Book
- LCD Projector
- Computer
- Video that demonstrates vital signs (Optional)
- Clock with a second hand
- Pen and Paper
- Stethoscope
- Sphygmomanometer
- Instructional outline and materials for teaching about measuring temperature with various thermometers (optional) for First Responder
- Multimedia presentation on Vital Signs measurement

What 21st Century Technology was used in this unit:

X	Slide Show Software
	Interactive Whiteboard
	Student Response System
	Web Design Software
	Animation Software
	Email

	Graphing Software
	Calculator
	Desktop Publishing
	Blog
	Wiki
x	Website

	Audio File(s)
	Graphic Organizer
	Image File(s)
X	Video
	Electronic Game or Puzzle Maker