



## HEALTHCARE SCIENCE

**COURSE:** 25.562 Concepts of Emergency Medicine

**UNIT:** 28.1 Pharmacology



## INTRODUCTION

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**Annotation:**

This unit will allow the students to understand the rules of pharmacology giving and assisting with medications and routes of medications.

**Grade(s):**

|   |                  |
|---|------------------|
|   | 9 <sup>th</sup>  |
| X | 10 <sup>th</sup> |
| X | 11 <sup>th</sup> |
| X | 12 <sup>th</sup> |

**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.

- Group non-disabled students with students with special needs for the visual/poster assignment to allow for peer tutoring.
- Providing a completed visual/poster would provide a much-needed visual reference point for students with disabilities and visual learners.
- A grading rubric for the poster and a performance rubric for the medication scenario role-plays would also be of great assistance by informing students what is expected for the completed work.
- Students with disabilities might also need the common medications worksheet modified, with the drugs listed in the left column, so they can locate the textbook material more readily.
- Providing a copy of the multimedia presentation notes to the students with disabilities would help them to better learn the content by providing a much-needed visual reinforcement of the material.



## FOCUS STANDARDS

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### **GPS Focus Standards:**

#### **HS-CEM 16:**

**Students will understand the rules of pharmacology: giving and assisting with medications and routes of medications, including proper techniques for use of oxygen therapy.**

- a. Define pharmacology, over-the-counter drugs, prescription drugs, indications, and contraindications.
- b. Summarize the rules for giving or assisting the patient with any medication.
- c. Evaluate the different routes for giving a medication.

### **GPS Academic Standards:**

**SAP4:** Students will analyze the physical, chemical, and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune systems.

**ELA12LSV1:** The student participates in student-to-teacher, student-to-student, and group verbal interactions.

## **National / Local Standards / Industry / ISTE:**

### **COGNITIVE OBJECTIVES**

- 4-1.3 Identify the medications with which the EMT-B may assist the patient with administering. (C-1)
- 4-1.4 State the medications the EMT-B can assist the patient with by the generic name.(C-1)
- 4-1.5 Discuss the forms in which the medications may be found. (C-1)

### **AFFECTIVE OBJECTIVES**

- 4-1.6 Explain the rationale for the administration of medications.(A-3)

### **PSYCHOMOTOR OBJECTIVES**

- 4-1.8 Read the labels and inspect each type of medication.(P-2)



## **UNDERSTANDINGS & GOALS**

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### **Enduring Understandings:**

- During the course of responding to emergency and disaster situations, the First Responder may encounter patients who are on medications and need assistance with taking the medicines.
- Other patients may need to be administered medications.
- Students will understand the importance of handling, storing, and delivering medications appropriately based on their scope of practice.

### **Essential Questions:**

- What do I need to understand about pharmacology, types of medications and their use?
- How can medicine be harmful to patient?
- What rules need to be followed in giving and assisting a patient with any medications?

### **Knowledge from this Unit:**

- The difference in OTC, BTC and prescription drugs.
- The different ways medicine can be taken.
- Proper storage of medicine.
- Rules for giving and assisting a patient with medications
- Medications with which patients can receive assistance

### Skills from this Unit:

- Demonstrate the steps in assisting a patient with a prescribed inhaler.
- Demonstrate the steps in assisting a patient with prescribed nitroglycerin.
- Demonstrate the steps in assisting a patient with a prescribed Epinephrine auto-injector.



## ASSESSMENT(S)

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**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:

Pharmacology Unit Exam

### Assessment(s) Description/Directions:

The unit exam will be an objective assessment to be completed at the end of the unit

**Attachments for Assessment(s):**

Pharmacology Unit Exam and Exam Key



# LEARNING EXPERIENCES

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**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-16. Students will understand the rules of pharmacology: giving and assisting with medications and routes of medications, including proper techniques for use of oxygen therapy.

### **2. Review Essential Questions.**

- What do I need to understand about pharmacology, types of medications and their use?
- How can medicine be harmful to patient?
- What rules need to be followed in giving and assisting a patient with any medications?

### **3. Identify and review the unit vocabulary.**

Vocabulary

- Activated charcoal
- Contraindications
- Epinephrine
- Indications
- Inhaler
- Nitroglycerin
- Oral glucose
- Oxygen
- Pharmacology
- Side effect

### **4. Assessment Activity**

#### **Lesson 1**

1. Identify the Standards. Standards should be posted in the classroom for each lesson.
2. Review Essential Questions.
3. Identify and review the unit vocabulary.

4. Introduce Pharmacology by discussing medications in general. How many students are currently on some kind of medication? How important is it to take your medications regularly? What would be the repercussions of taking them incorrectly? How does this relate to the EMT?
5. Present multimedia presentation on the six drugs that EMTs can assist with or deliver. Additional multimedia on Pharmacology from Temple College attached as well. This can be used to make an outline for students to use.

### Lesson 2

1. Identify the Standards. Standards should be posted in the classroom for each lesson.
2. Review Essential Questions.
3. Identify and review the unit vocabulary.
4. Set-up 6 stations, each station represent a different type of medication scenario.
5. Divide students equally and assign them to a station. Have the students role-play the scenario – one student acts as the patient and the others must respond appropriately.
6. Monitor student progress and responses

### Lesson 3

1. Identify the Standards. Standards should be posted in the classroom for each lesson.
2. Review Essential Questions.
3. Identify and review the unit vocabulary.
4. Discuss the most common medications that patients often take and what they are used for.
5. Distribute the Common Medication Worksheet and allow students to complete it using notes and text.

### Lesson 4

1. Identify the Standards. Standards should be posted in the classroom for each lesson.
2. Review Essential Questions.
3. Identify and review the unit vocabulary.
4. Review routes of administration and write them on the board (see multimedia presentation as a reference)
5. Divide students into 7 groups and assign each group a different route of administration. Each group must create a visual picture that represents the route of administration to them. Display and share these pictures

### Lesson 5

Distribute and complete Pharmacology Exam

### **Attachments for Learning Experiences:**

- Multimedia presentation

- Patient Scenarios
- Common Medications Worksheet
- Temple College Multimedia-Pharmacology presentation

**Notes & Reflections:** May include notes to the teacher, pre-requisite knowledge & skills, suggestions, etc.



## CULMINATING PERFORMANCE TASK (Optional)

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**Culminating Unit Performance Task Title:**

**Culminating Unit Performance Task Description/Directions/Differentiated Instruction:**

**Attachments for Culminating Performance Task:**



## UNIT RESOURCES

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**Web Resources:**

<http://www.templejc.edu/dept/ems/pages/powerpoint.html> additional multimedia presentations on pharmacology and other topics for EMTs.

**Attachment(s):**

**Materials & Equipment:**

**What 21st Century Technology was used in this unit:**

|                                     |                         |                                     |                    |                          |                                 |
|-------------------------------------|-------------------------|-------------------------------------|--------------------|--------------------------|---------------------------------|
| <input checked="" type="checkbox"/> | Slide Show Software     | <input type="checkbox"/>            | Graphing Software  | <input type="checkbox"/> | Audio File(s)                   |
| <input type="checkbox"/>            | Interactive Whiteboard  | <input type="checkbox"/>            | Calculator         | <input type="checkbox"/> | Graphic Organizer               |
| <input type="checkbox"/>            | Student Response System | <input type="checkbox"/>            | Desktop Publishing | <input type="checkbox"/> | Image File(s)                   |
| <input type="checkbox"/>            | Web Design Software     | <input type="checkbox"/>            | Blog               | <input type="checkbox"/> | Video                           |
| <input type="checkbox"/>            | Animation Software      | <input type="checkbox"/>            | Wiki               | <input type="checkbox"/> | Electronic Game or Puzzle Maker |
| <input type="checkbox"/>            | Email                   | <input checked="" type="checkbox"/> | Website            |                          |                                 |