



HEALTHCARE SCIENCE

COURSE: 25.562 Concepts of Emergency Medicine

UNIT: 22.1 Medical Emergencies



INTRODUCTION

Annotation:

Students will be able to identify signs and symptoms, and provide emergency care for general medical complaints and the following types of medical emergencies: diabetes, stroke, seizures, poisonings, and abdominal pain.

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: Five 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-11 Students will accurately assess and treat emergencies of a medical, environmental, and behavioral nature.

- a. Integrate the knowledge and skills necessary to assure the provision of necessary assessment of medical, respiratory, diabetic, environmental, and behavioral emergency patients, including but not limited to: seizures; upper airway obstruction and lower airway diseases; administration of oral glucose and assessment of blood glucose; heat/cold exposure; water-related emergencies; altered mental status; stroke; and psychological crisis.
- b. Demonstrate the skills necessary to provide emergency care of the patient suffering from (including but not limited to) seizures; upper airway obstruction and lower airway diseases; hypoglycemia and hyperglycemia; heat/cold exposure; water-related emergencies; altered mental status; stroke; and psychological crisis.

GPS Academic Standards:

ELA12W1: The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and signals a satisfying closure.

ELA12W2: The student demonstrates competence in a variety of genres

ELA12W3: The student uses research and technology to support writing.

ELA12C1: 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.

ELA12C2: The student demonstrates understanding of manuscript form, realizing that different forms of writing require different formats.

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

ELA12LSV2: The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.

National / Local Standards / Industry / ISTE:

- 4-4.1** Identify the patient taking diabetic medications with altered mental status and the implications of a diabetes history.(C-1)
- 4-4.2** Establish the relationship between airway management and the patient with altered mental status.(C-3)



UNDERSTANDINGS & GOALS

Enduring Understandings:

- Students will understand that medical emergencies can happen anywhere at any time, so they should always be prepared.
- Students will also understand the emergency care for different medical emergencies.

Essential Questions:

- How can EMS workers quickly determine and treat medical conditions affecting patients?
- What safety precautions should be taken by the EMS worker when providing care for patients/clients with medical emergencies?

Knowledge from this Unit:

- The steps in providing emergency medical care to a patient with a general medical complaint.
- The different terms, signs and symptoms of a heart attack.
- What steps are used in providing emergency medical care to a patient with an altered mental status?
- The procedures in providing emergency medical care to a patient with seizures.
- What causes seizures?

Skills from this Unit:

- Demonstrate the steps in providing emergency medical care to a patient with a general medical complaint.

- List the different terms of a heart attack.
- Demonstrate the steps in providing emergency medical care to a patient with an altered mental status.
- Demonstrate the steps in providing emergency medical care to a patient with seizures.
- List of what causes seizures.



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:

- Medical Emergencies Research Project
- Medical Emergencies Patient Care Exam
- Vocabulary Quiz

Assessment(s) Description/Directions:

- **Research Project:** The students will complete a research project on a selected medical emergency. They will write a research paper and present their findings orally.
- **Patient Care Exam:** Students will describe the emergency patient care for medical emergencies. Vocabulary list with definitions may be used to give a quiz to check for understanding of vocabulary

Attachments for Assessment(s):

- Medical Emergencies Research Project
- Research Project Rubric
- Patient Care Exam



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

Lesson 1

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

HS-CEM-11 Students will accurately assess and treat emergencies of a medical, environmental, and behavioral nature.

2. Review Essential Questions.

- How can EMS workers quickly determine and treat medical conditions affecting patients?
- What safety precautions should be taken by the EMS worker when providing care for patients/clients with medical emergencies?

3. Identify and review the unit vocabulary.

(This unit has a wide variety of vocabulary words. A vocabulary game could be customized and created with www.puzzlemaker.com)

Vocabulary:

- **Visceral pain**-Pain felt when internal organs are damaged or injured
- **Referred pain**-pain felt at a site adjacent to or at a distance from the site of injury.

- **Diabetes mellitus**-a condition in which the body can no longer control levels of sugar called glucose in the blood
- **Epilepsy**-a medical disorder characterized by attacks of unconsciousness with or without seizures
- **Glucose**-a simple sugar that is the primary source of energy for the body's tissues
- **Hyperglycemia**-High blood glucose (sugar)
- **Hypoglycemia**-Low blood glucose (sugar)
- **Insulin**-Hormone secreted by the pancreas to control the level of glucose in the blood
- **Seizure**-any event in the brain that causes uncontrolled muscle contractions
- **Status epilepticus**-a condition in which there are continuing attacks of epilepsy without intervals of consciousness; can lead to brain damage and death
- **Stroke**-a condition caused by the blocking of an artery or the breaking of a blood vessel that supplies blood to the brain
- **Syncope**-fainting-partial or complete loss of consciousness and posture
- **Allergen**-A substance that causes an allergic response
- **Allergic reaction**-hypersensitive response to a substance
- **Anaphylaxis**-most severe type of allergic reaction in which a person goes into shock when he comes in contact with a substance to which a person is allergic
- **Auto-injector**-device designed to deliver a single dose of a drug
- **Epinephrine**-medicine used to treat severe allergic reactions
- **Hives**- Slightly elevated red or pale areas of the skin that may be produced as a reaction to certain allergens.
- **Poison**- Any substance that, when introduced to a living organism causes severe physical distress or death.
- **Withdrawal**- Group of symptoms that occurs upon the abrupt discontinuation/separation or a decrease in dosage of the intake of certain medications
- **Narcotics**- A drug that causes insensibility or stupor, usually subject to regulations
- **Toxins**-poisons produced by certain plants, animals, and bacteria
- **Activated charcoal**-powdered or granular carbon used for purifying by adsorption given orally as an antidote to certain poisons

4. Introduce medical emergencies by introducing statistics to enforce relevance. (Ex. What % of EMS calls are medical emergencies? What % of the population has diabetes?).

5. List the different types of medical emergencies on the board and give a general description of each.
6. Assign reading assignment for the medical emergencies unit in the textbook and distribute note-taking guide.

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. Review note-taking guide from last lesson and divide students into groups of four for discussions on reading.
5. Each member of the group should answer the following questions and as a group discuss:
 - a. Which part of the reading did you find most interesting? Why?
 - b. Which part of the reading did you not understand?
 - c. When you read the material, what were your initial thoughts?

**Allow time for the group to respond the answers of each member

6. Once all of the groups have completed discussion, allow groups to share common responses with the class.

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. Distribute Medical Emergencies Research Project
5. Allow students time to organize and begin work on research project. Monitor student progress and answer any questions. Only allow 1 day for class time to work on this project. Majority of work should be done outside of the classroom.

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. Divide students into pairs.
5. Each pair should write a descriptive paragraph describing a medical patient. The paragraph should include signs and symptoms.
6. Once the paragraphs are complete have each pair swap with another pair and form groups of four. Each pair should simulate the patient care steps to respond to the student in the scenario they received.

Lesson 5

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. Distribute Medical Emergencies Patient Care Exam

Attachments for Learning Experiences:

- Note-taking Guide
- Research Project
- Project Rubric

Notes & Reflections:

- The patient care exam could be differentiated for different learning levels. Instead of an open-ended question, the students could complete a chart or fill-in-the-blank.
- Poison Control has a presentation that they offer to high schools. This could be another lesson option, focusing on the poisoning patient.



CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Medical Emergencies Patient Care Exam

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

The students will have an essay form exam that concentrates on the patient care appropriate for each type of medical emergency.

Attachments for Culminating Performance Task:

Patient Care Exam: Medical Emergencies



UNIT RESOURCES

Web Resources:

www.ems.gov

www.puzzlemaker.com

Attachment(s):

Materials & Equipment:

- Computers
- Internet
- Research resources

What 21st Century Technology was used in this unit:

<input 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 checked="" 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 checked="" type="checkbox"/>	Electronic Game or Puzzle Maker
<input type="checkbox"/>	Email	<input checked="" type="checkbox"/>	Website		