

EMT-2400: ADVANCED CARDIAC LIFE SUPPORT

Cuyahoga Community College

Viewing: EMT-2400 : Advanced Cardiac Life Support

Board of Trustees:

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Academic Term:

Fall 2018

Subject Code

EMT - Emergency Medical Technology

Course Number:

2400

Title:

Advanced Cardiac Life Support

Catalog Description:

Advanced cardiac life support (ACLS) emphasizes the importance of basic life support cardiopulmonary resuscitation (CPR) to patient survival, the integration of effective basic life support with advanced cardiovascular life support interventions, and the importance of effective team interaction and communication during resuscitation. Students engage in simulated clinical scenarios that encourage active, hands-on participation through learning stations where students will practice essential skills individually, as part of a team, and as team leader.

Credit Hour(s):

1

Lecture Hour(s):

1

Requisites

Prerequisite and Corequisite

Departmental approval: valid current American Heart Healthcare Provider CPR certification required.

Outcomes

Course Outcome(s):

Integrate basic life support skills with advanced cardiovascular life support interventions to ensure patient survival.

Objective(s):

1. Explain normal cardiovascular anatomy and physiology.
2. Recognize other life-threatening clinical situations (such as stroke) and provide initial care.
3. Perform basic and advanced airway management techniques.
4. Define pharmacological agents designed and utilized for cardiopulmonary arrest and peri-arrest situations.
5. Demonstrate the technical aspects and skills necessary to perform CPR.
6. Establish circulatory access and properly administer appropriate medication.
7. Demonstrate application of a heart monitor for general electrocardiogram (ECG) interpretation.
8. Recognize and initiate early management of peri-arrest conditions.
9. Manage cardiac arrest.
10. Identify and treat eschemic chest pain and acute coronary symptoms.

Course Outcome(s):

Perform resuscitation skills as an individual, part of a team, and as a team leader.

Objective(s):

1. Discuss the importance of effective team interaction and communication during resuscitation.
2. Discuss effective resuscitation team dynamics.
3. Demonstrate essential resuscitation skills individually, as part of a team, and as team leader.

Methods of Evaluation:

1. Final written examination using American Heart Association (AHA) standard tests
2. Practical evaluation of skills

Course Content Outline:

1. Factor's contributing to patient survival
 - a. Basic life support CPR
 - b. Advanced cardiovascular life support
 - c. Effective team interaction
 - d. Effective team communication
 - e. Effective resuscitation team dynamics
2. Essential skills
 - a. Recognition of peri-arrest conditions
 - i. Life threatening dysrhythmias
 - ii. Shortness of breath
 - iii. Chest pain
 - iv. Hypotension
 - v. Altered mental status
 - b. Early management of peri-arrest conditions
 - i. Recognition of life threatening conditions
 - ii. Oxygenation and airway management
 - iii. Manage rhythms that contribute to poor cerebral and coronary perfusion
 - c. Management of cardiac arrest
 - i. High quality CPR
 - ii. Early defibrillation
 - iii. Adequate respiratory management
 - iv. Establishment of circulatory access
 - v. Pharmacological interventions
 - d. Identification of ischemic chest pain & acute coronary syndromes (ACS)
 - i. ST-elevation myocardial infarction (STEMI)
 - ii. Unstable angina/non-ST-elevation MI
 - iii. Intermediate/low risk unstable angina
 - iv. Unexplained shortness of breath
 - v. Chest pain
 - vi. Diaphoreses
 - vii. Lightheadedness
 - viii. Dizziness
 - ix. Nausea
 - x. Abdominal pain
 - xi. Jaw pain
 - xii. Arm pain
 - xiii. Shoulder pain
 - e. Treatment of ischemic chest pain & acute coronary syndromes (ACS). Specific treatments are based on the differential diagnosis
 - i. Support airway, breathing, circulation (ABCs)
 - ii. Oxygen
 - iii. Aspirin
 - iv. Nitroglycerin
 - v. Morphine
 - vi. Clopidogrel
 - vii. Beta-blockers
 - viii. Heparin
 - ix. Glycoprotein IIb/IIIa inhibitor
 - x. Fibrinolytic therapy
 - xi. Coronary angioplasty
 - f. Recognition of other life-threatening situations

- i. Stroke
- ii. ACS
- iii. Symptomatic Bradycardia
- iv. Tachycardia above a rate of 150 beats per minute (BPM)
- g. Treatment of other life threatening situations
 - i. Stroke management includes recognition, supporting ABCs, and restoration of cerebral blood flow
 - ii. ACS management includes recognition, supporting ABCs, and restoration of coronary blood flow
 - iii. Symptomatic bradycardia management includes, supporting ABCs, and increasing the heart rate using pacing or pharmacological interventions.
 - iv. The treatment of tachycardia is based on the patient's degree of stability. Once ABCs are supported the rate can be managed using electrical therapy or pharmacological agents
- 3. Learning stations
 - a. Management of respiratory arrest
 - b. Pulseless arrest ventricular fibrillation (VF)/ventricular tachycardia(VT) case
 - c. Bradycardia case
 - d. Asystole case
 - e. Pulseless electrical activity (PEA) case
 - f. Tachycardia, stable and unstable case
 - g. Putting it all together learning station that includes multiple dysrhythmias
 - h. Megacode case

Resources

Field, John M., Mary Fran Hazinski, and David Gilmore, eds. *Handbook of emergency cardiovascular care for healthcare providers*. Dallas, TX : American Heart Association, 2008.

Field, John M., ed. *ACLS Resource Text for Instructors and Experienced Providers: Professional*. Dallas, TX: American Heart Association, 2007.

American Heart Association. *American Heart Association Advanced Life Support Provider Manual*. {ts '2006-06-01 00:00:00'}.

Resources Other

1. American Heart Association Advanced Cardiac Life Support Instructor Kit for 2006 Guidelines.
2. American Heart Association. ECG & Pharmacology Instructor Resource, 6-01-2006.

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