PHYSICAL HEALTHCARE SUBCLUSTER
EMERGENCY MEDICAL SERVICES (EMS) 2 - 5532
EMERGENCY MEDICAL RESPONDER (EMR)

Course Description: Emergency Medical Services (EMS) 2 is the second course in a sequence of courses. Emergency Medical Services (EMS) 2 is a continuation of EMS 1. The course includes content and skills that first responders need to provide appropriate initial care, regardless of the type of emergency. EMS 2 stresses the steps to follow in an emergency until more advanced medical personnel arrive. The skills and content taught at this level become more specific and rigorous. Students in this course will be certified in FA/CPR/AED if not certified before course attendance. Recertification may take place as needed. *Successful completion of this course may result in First Responder certification being available through various national certifying bodies.

General Requirements: This course is recommended for students in grades 10-12. Students must have been successful in EMS 1 to proceed to EMS 2.

Prerequisite(s): EMS 1 passed successfully with a grade of 75% or greater, or direct recommendation from EMS 1 instructor.

Class Size Recommended - maximum 20 students

Credit: CP - 1 unit = (120 hours)

Concentrator: Completes EMS 1 and EMS 2

Completers:

Three Course: Samples: EMS 1, EMS 2, EMS 3 or EMS 1, EMS 2, Medical Terminology

Four or more courses: Sample: EMS 1, EMS 2, WBL, HS 1 -Foundations of Healthcare

Stackable Credentials: Please refer to the updated tired credential list on the SCDE Website. This course would be suitable for Tier One or Tier Two Credentials. Examples: First-Aid, CPR, Stop the Bleed, or any other applicable credentials as listed in the Student Reporting Guide

Reinforce ALL academic foundation concepts as discussed in EMS 1.

Curricular Activities: HOSA–Future Health Professionals, Service-Learning Projects

Standard 1: Preparatory

Uses knowledge of the EMS system, safety/well-being of the EMR, medical/legal issues and ethical issues at the scene of an emergency while awaiting a higher level of care.

1. Describe EMS Systems and their components
    - EMS systems
    - Roles, responsibilities and professionalism of EMS personnel
    - Quality improvement vs. quality assurance
    - Role of medical oversight
    - Culture of safety / patient safety
    - Continuum of care
2. Describe Workforce Safety and Wellness
    - Standard safety precautions
    - Personal protective equipment
    - Lifting and moving patients
    - Crew resource management
    - Stress management
    - Prevention of work-related injuries and illnesses
    - Responding to mental health, resilience and suicide prevention
    - Wellness principles
    - Disease transmission
3. Identify Research Methods related to EMS
    - Impact of research on EMR care
    - Data collection
4. Apply Documentation regarding EMS
    - Record patient findings
5. Identify and demonstrate EMS System Communication
    - Call for resources
    - Transfer care of the patient
    - Interact within the team structure
6. Identify and demonstrate Therapeutic Communication
    - Health care literacy
    - Interviewing techniques
    - Verbal defusing strategies
    - Managing communication challenges
    - Family centered care
7. Identify and demonstrate Medical/Legal and Ethics
    - Consent/refusal of care
    - Confidentiality

- Advanced directives
- Tort and criminal actions

- Evidence preservation
- Statutory responsibilities
- Mandatory reporting
- Ethical principles/moral obligations
- End-of-life issues

8. Identify Anatomy and Physiology- Uses knowledge of the anatomy and function of the upper airway, heart, vessels, blood, lungs, skin, muscles, and bones as the foundation of emergency care.
9. Identify and construct Medical Terminology- Uses medical and anatomical terms.
10. Identify and apply Pathophysiology- Uses knowledge of shock and respiratory compromise to respond to life threats.
11. Identify and apply Life Span Development- Uses knowledge of age-related differences to assess and care for patients.
12. Identify and apply Public Health- Has an awareness of local public health resources and their role in public health.

- EMS roles in public health
- Infection prevention and control
- Human trafficking

13. Identify and apply Pharmacology concepts- Uses knowledge of the medications that the EMR may administer in an emergency.

- Principles of Pharmacology
  - Medication safety
  - Kinds of medications used during an emergency
- Medication Administration
  - Use a Medication Cross Check procedure
  - Use an autoinjector
  - Use a unit-dose, premeasured intranasal device
  - Use of tools/resources to facilitate safe administration of weight-based dosing.
- Acute Medications
  - Names
  - Effects
  - Indications
  - Contraindications
  - Side effects
  - Routes of administration
  - Dosages

Standard 2: Airway Management, Respiration and Ventilation

Applies knowledge of anatomy and physiology to assure a patent airway, adequate mechanical ventilation and respiration while awaiting additional EMS response for patients of all ages.

1. Apply and demonstrate Airway Management regarding EMS
    - Airway anatomy airway assessment
    - Techniques of assuring a patent airway
2. Apply and demonstrate Respiration regarding EMS
    - Anatomy of the respiratory system
    - Physiology and pathophysiology of respiration
        - Pulmonary ventilation
        - Oxygenation
        - Respiration
            - External
            - Internal
            - Cellular
    - Assessment and management of adequate and inadequate respiration
    - Supplemental oxygen therapy
3. Apply and demonstrate Ventilation regarding EMS
    - Assessment and management of adequate and inadequate ventilation
    - Effect of ventilation on cardiac output

Standard 3: Patient Assessment

Use scene information and patient assessment findings to identify and manage immediate life threats and injuries within the scope of practice of the EMR.

1. Explain, describe, and demonstrate Scene Assessment regarding EMS
    - Scene safety/situational awareness
    - Scene management
    - Impact of the environment on patient care
    - Addressing hazards
    - Violence
    - Need for additional or specialized resources
    - Standard precautions
    - Multiple patient situations
2. Explain, describe and demonstrate Primary Assessment regarding EMS
   Primary assessment (S, S)
   Begin interventions needed to preserve life (S, S)
3. Explain, describe and demonstrate History Taking regarding EMS
   Determining the chief complaint
   Mechanism of injury/ nature of illness
   Associated signs and symptoms

4. Explain, describe and demonstrate Secondary Assessment regarding EMS
   Assessment of vital signs
   Assessment of pain
   Performing a rapid full body scan
5. Discuss Monitoring Devices regarding EMS
6. Explain, describe and demonstrate Reassessment regarding EMS
   How and when to reassess patients (S, S)

Standard 4: Medical

Recognizes and manages life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response

1. Explain, describe, and discuss Medical Overview regarding EMS
   - Assessment and management of a medical complaint
2. Explain, describe, and discuss Abdominal and Gastrointestinal Disorders regarding EMS
   - Anatomy, presentations and management of shock associated with gastrointestinal bleeding
3. Explain, describe, and discuss cardiovascular diseases, specifically chest pain.
4. Describe epistaxis
5. Explain, describe, and discuss Endocrine Disorders regarding EMS
   - Awareness that diabetic emergencies cause altered mental status
6. Explain Genitourinary/Renal regarding Blood pressure assessment in hemodialysis patients
   - Blood pressure assessment in hemodialysis patients
7. Explain, describe, and discuss Immunology regarding Anaphylactic reactions
8. Explain, describe, and discuss Infectious Diseases regarding EMS
   - Awareness of patients who may have an infectious disease
   - How to disinfect and decontaminate equipment after treating a patient
9. Explain, describe, and discuss Neurology regarding EMS
   - Decreased level of responsiveness
   - Seizure
   - Stroke
10. Explain, describe, and discuss Non-Traumatic Musculoskeletal Disorders regarding EMS
    - Non-traumatic fractures
11. Explain, describe, and discuss Psychiatric or Behavioral Emergencies regarding EMS
    - Recognition of behaviors that pose a risk to the EMR, patient or others
    - Recognition of suicide risk
12. Explain, describe, and discuss Respiratory regarding EMS
    - Respiratory distress/failure/ arrest
    - Upper airway obstruction
    - Lower airway disease:

- Asthma,
- bronchiolitis,
- pneumonia,
- chronic obstructive pulmonary disease (COPD)

13. Explain, describe, and discuss Toxicology regarding EMS
    - Carbon monoxide poisoning
    - Nerve agent poisoning
    - Opioid toxicity
    - How and when to contact a poison control center

Standard 5: Shock and Resuscitation

Uses assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response.

1. Define Shock
    - Definition
    - Physiologic response
2. Define and demonstrate Resuscitation from Cardiac Arrest
    - Ethical issues in resuscitation
    - CPR physiology
    - Resuscitation system components
    - Special arrest and peri-arrest situations

Standard 6: Trauma

Uses assessment information to recognize shock, respiratory failure or arrest and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response

1. Recognize and demonstrate Abdominal and Genitourinary Trauma
    - Blunt versus penetrating mechanisms
    - Evisceration
    - Impaled object
2. Recognize and demonstrate Bleeding
    - Direct Pressure
    - Tourniquet Application
    - Bandages and Dressings Application
3. Recognize and demonstrate chest trauma
    - Blunt versus penetrating mechanisms
    - Open chest wound
    - Impaled object
4. Recognize and demonstrate Environmental Emergencies

- Drowning
- Temperature-related illness
- Bites and envenomation
- Lightning injury
- Other environmental emergencies to be determined locally

5. Recognize and demonstrate Head, Facial, Neck, and Spine Trauma
   - Life threats
   - Spine trauma
6. Discuss Multi-System Trauma
7. Recognize Nervous System Trauma
   - Traumatic brain injury
8. Recognize and demonstrate Orthopedic Trauma
   - Open fractures
   - Closed fractures
   - Dislocations
   - Amputations
9. Recognize and demonstrate Soft Tissue Trauma
   - Wounds (avulsion, bite, laceration, puncture, incision)
   - Burns (electrical, chemical, thermal) including inhalation injury
   - Chemicals in the eye and on the skin
10. Discuss Special Considerations in Trauma
    - Pregnant patient
    - Pediatric patient
    - Geriatric patient

Standard 7: Special Patient Populations

Recognizes and manages life threats based on simple assessment findings for a patient with special needs while awaiting additional emergency response

1. Discuss Gynecology
   - Shock associated with vaginal bleeding
2. Discuss Obstetrics
   - Normal delivery
   - Vaginal bleeding in the pregnant patient
3. Discuss Neonatal Care
   - Newborn stabilization
   - Neonatal resuscitation
4. Discuss Pediatrics- The Education Standards now integrate assessment, diagnostic, treatment and disposition modifications for pediatric-specific diseases and emergencies into each section of the document.
5. Discuss Geriatrics- The Education Standards now integrate assessment, diagnostic, treatment and disposition modifications for geriatric-specific diseases and emergencies into each section of the document

6. Discuss Patients with Special Challenges
   Recognizing and reporting abuse and neglect

Standard 8: EMS Operations

Knowledge of operational roles and responsibilities to ensure patient, public and personnel safety

1. Describe and discuss Emergency Response Vehicles
   - Risks and responsibilities of emergency response and radio communications
   - Risks and responsibilities of operating emergency vehicles
2. Describe and discuss Incident Management
   - Establish and work within the incident management system
3. Describe and discuss Multiple Casualty Incidents
   - Operational goals
   - Field triage/START Triage
     - RPM Assessment: Prioritizes patients based on Respiration, Perfusion, and Mental Status to quickly categorize victims.
     - Color-Coded System: Patients are labeled as Immediate (Red), Delayed (Yellow), Minor (Green), or Deceased (Black) based on severity.
     - 30-2-Can Do Rule: If a patient has a respiratory rate >30 breaths per minute, capillary refill >2 seconds, or cannot follow commands, they are Immediate (Red).
     - Focus on Speed: Evaluations should take under 30 seconds per patient to rapidly sort casualties in mass casualty incidents (MCIs).
     - Treatment is Minimal: EMRs provide only basic life-saving interventions (airway positioning, bleeding control) before moving to the next patient.
4. Describe and discuss air medical
   - Safe air medical operations
   - Criteria for utilizing air medical response
   - Medical risks/needs/advantages
5. Describe and discuss Rescue Operations
   - Safety principles of rescue operations
6. Describe and discuss Hazardous Materials
   - Risks and responsibilities of operating on the scene of a hazardous materials incident
7. Describe and discuss Mass Casualty Incidents due to Terrorism and Disaster
   - Risks and responsibilities of operating on the scene of a natural or man-made disaster

Resources:

Home - South Carolina Department of Education

Home - National Consortium for Health Science Education

American Heart Association | To be a relentless force for a world of longer, healthier lives

Red cross

Journal of Emergency Services (JEMS)

EMS 1

Books -J.B. Learning- http://www.jblearning.com/

National Association of EMS Educators NAEMS- http://www.naemse.org/

National Healthcare Skill Standards, www.healthscienceconsortium.org

National Highway Traffic Safety Administration (NHTSA), www.nhtsa.gov

National Registry of Emergency Medical Technicians, www.nremt.org

Natural Disasters and Severe Weather, https://www.cdc.gov/disasters/

CareerSafe OSHA 10 -EMS- https://www.careersafeonline.com/

Youscience - https://www.youscience.com/wp-content/uploads/2024/07/Emergency-Medical-Technician-EMT.pdf

Limmer Education EMS Resources

Stop the bleed

Responder Safety, www.respondersafety.com

SC EMS Portal https://www.scemsportal.org/

US Fire Administration (USFA), www.usfa.fema.gov