Idaho Transition Instructional Guidelines

Emergency Medical Responder (EMR)

Preparatory
EMS Systems

EMR Education Standard

Uses simple knowledge of the Emergency Medical Services (EMS) system, safety/well-being of the Emergency Medical Responder (EMR), medical/legal issues at the scene of an emergency while awaiting a higher level of care.

EMR-Level Instructional Guideline

I. IDAPA 16.01.07.075 Standards of Professional Conduct for EMS Personnel

01. Method of Treatment. EMS personnel must practice medically acceptable methods of treatment and must not endeavor to extend their practice beyond their competence and the authority vested in them by the medical director.

02. Commitment to Self-Improvement. EMS personnel must continually strive to increase and improve their knowledge and skills and render to each patient the full measure of their abilities.

03. Respect for the Patient. EMS personnel must provide all services with respect for the dignity of the patient, unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems. (7-1-11)T

04. Confidentiality. EMS personnel must hold in strict confidence all privileged information concerning the patient except as disclosure or use of this information is permitted or required by law or Department rule. (7-1-11)T

05. Conflict of Interest. EMS personnel must not accept gratuities for preferential consideration of the patient and must guard against conflicts of interest.

06. Professionalism. EMS personnel must uphold the dignity and honor of the profession and abide by its ethical principles and should be familiar with existing laws governing the practice of emergency medical services and comply with those laws.

07. Cooperation and Participation. EMS personnel must cooperate with other health care professionals and participate in activities to promote community and national efforts to meet the health needs of the public.

08. Ethical Responsibility. EMS personnel must refuse to participate in unethical procedures, and assume the responsibility to expose incompetence or unethical conduct of others to the appropriate authority in a proper and professional manner.

II. Quality Improvement

A. Dynamic System for Continually Evaluating and Improving Care

1. Patient safety
2. Significant – one of the most urgent health care challenges
3. How errors happen
    a. Skills-based failure
    b. Rules-based failure
    c. Knowledge-based failure
4. How you can help reduce errors
    a. Debrief calls
    b. Constantly question assumptions
    c. Use decision aids
    d. Ask for help

Preparatory
Medical/Legal and Ethics

EMR Education Standard

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

Transition Highlights

This section includes new HIPPA content. Living Wills are added; Surrogate decision makers are added; Civil and criminal court cases are expanded.

EMR-Level Instructional Guideline

I. Confidentiality
- A. Obligation to Protect Patient Information
- B. Health Information Portability and Accountability Act (HIPAA)
  - 1. Description
  - 2. Protected health information (PHI)
    - a. Identifies the patient
    - b. Relates to physical health, mental health, and treatment
    - c. Can be written or verbal
  - 3. Permitted disclosures of PHI without written patient consent
    - a. Treatment, payment, and operations
    - b. Special situations
      - i. mandatory reporting
      - ii. public health
      - iii. law enforcement (specific situations only)
      - iv. certain legal situations

II. Advanced Directives
- A. Living Wills
  - 1. Advance directives indicating a patient's wishes
  - 2. May not address the EMR in your State
- B. Surrogate Decision-Makers
  - 1. Durable power of attorney for healthcare
  - 2. Healthcare proxy
  - 3. Next of kin

III. Types of Court Cases
- A. Civil (Tort)
  - 1. Abandonment
  - 2. Negligence
    - a. A failure to follow the standard of care causes or worsens the patient's injury or illness. Four elements needed to prove
      - i. duty to act
      - ii. breach of duty
        - a) definition
        - b) failure to perform care needed
        - c) performing care incorrectly
      - iii. harm (damage to patient)
      - iv. proximate causation

3. Abandonment

B. Criminal

1. Assault
2. Battery

Anatomy and Physioloigy

EMR Education Standard

Uses simple knowledge of the anatomy and function of the upper airway, heart, vessels, blood, lungs, skin, muscles, and bones as the foundation of emergency care.

Transition Highlights

This section includes a brief discussion of the life support chain focusing on oxygenation and perfusion.

EMR-Level Instructional Guideline

I. Life Support Chain
- A. Fundamental Elements
  - 1. Oxygenation
    - a. Alveolar/capillary gas exchange
    - b. Cell/capillary gas exchange
  - 2. Perfusion
    - a. Oxygen
    - b. Glucose
    - c. Removal of carbon dioxide and other waste products
  - 3. Cells need oxygen and glucose to make energy so they can perform their functions
- B. Issues Impacting Fundamental Elements
  - 1. Composition of ambient air
  - 2. Patency of the airway
  - 3. Mechanics of ventilation
  - 4. Regulation of respiration
  - 5. Transport of gases
  - 6. Blood volume
  - 7. Effectiveness of the heart as a pump
  - 8. Blood vessel size and resistance

Medical Terminology

EMR Education Standard

Uses simple medical and anatomical terms.

EMR-Level Instructional Guideline

I. Medical Terminology

A. Recognizes Simple Medical Prefixes, Suffixes, and Combining Words Such As

1. Cardio-
2. Neuro-
3. Hyper-
4. Hypo-
5. Naso-
6. Oro-
7. Arterio-
8. Hemo-
9. Therm-
10. Vaso-
11. Tachy-
12. Brady-

Physiology

EMR Education Standard

Uses simple knowledge of shock and respiratory compromise to respond to life threats.

Transition Highlights

This section includes expanded content on respiratory dysfunction and shock.

EMR-Level Instructional Guideline

I. Respiratory Compromise
- A. Impaired Airway, Respiration, or Ventilation
  - 1. Airway
    - a. Movement of oxygenated air into and out of lungs is blocked
    - b. Possible causes
      - i. foreign body airway obstruction
      - ii. tongue blocks airway in unconscious patient
      - iii. blood or secretions
      - iv. swelling
      - v. trauma to the neck
  - 2. Respiration
    - a. Inadequate oxygen in air that is breathed in
    - b. Possible causes
      - i. low oxygen environment
      - ii. poison gases
      - iii. infection of the lungs
      - iv. illness that narrow the airway and cause wheezing
      - v. excess fluid in the lungs
      - vi. excess fluid between the lungs and blood vessels
      - vii. poor circulation
  - 3. Ventilation
    - a. Rate or depth of breathing is not adequate
    - b. Insufficient volume of air moved into and out of lungs
    - c. Possible causes
      - i. unconscious or altered level of consciousness
      - ii. injury to the chest
      - iii. poisoning or overdose
      - iv. diseases

II. Shock
- A. Impaired Blood Flow to the Organs and Cells
  - 1. Heart
    - a. Rate is too slow or very fast
    - b. Contractions are too weak
    - c. Related to heart disease, poisoning, excessive rate, or depth of artificial ventilation
  - 2. Blood vessels
    - a. Unable to constrict
    - b. Related to neck fractures with spinal cord injury, infection, or anaphylaxis

3. Blood
    a. Decrease in the amount of blood or blood components in the blood vessels
    b. Related to bleeding, vomiting, diarrhea, or burns

Pharmacology
Medication Administration

EMR Education Standard

Uses simple knowledge of the medications that EMR may self-administer or administer to a peer in an emergency.

Transition Highlights

This section includes the use of an auto injector for self-preservation or for use on one's peers (chemical attack).

EMR-Level Instructional Guideline

I. Self-Administration (Intramuscular Injection by Auto injector)
- A. Advantages
- B. Disadvantages
- C. Techniques

II. Peer Administration (Intramuscular Injection by Auto injector)
- A. Advantages
- B. Disadvantages
- C. Techniques

Pharmacology
Emergency Medications

EMR Education Standard

Uses simple knowledge of the medications that EMR may self-administer or administer to a peer in an emergency.

Transition Highlights

This section includes the use of an auto injector for self-preservation or for use on one's peers – Chemical antidote auto injector only.

EMR-Level Instructional Guideline

The EMR must know the names, effects, indications, routes of administration, and dosages for all of the following emergency medications.

I. Specific Medications (i.e. Chemical Antidote Autoinjector Devices)

Airway Management, Respiration, and Artificial Ventilation
Respiration

EMR Education Standard

Applies knowledge (fundamental depth, foundational breadth) of anatomy and physiology to assure a patent airway, adequate mechanical ventilation, and respiration while awaiting EMS response for patients of all ages.

Transition Highlights

This section includes the Anatomy and Physiology *and* Respiration subsections in the NASEMSO National EMS Education Standards Transition Template. It includes increased respiratory physiology, enhanced skills, the interrelationship between ventilation and circulation with an increased level of detail.

EMR-Level Instructional Guideline

I. Anatomy of the Respiratory System
- A. Includes All Airway Anatomy Covered in the Airway Management Section
- B. Additional Respiratory System Anatomy
  - 1. Chest cage (includes ribs and muscles)
    - a. Intercostal muscles
    - b. Diaphragm
- C. Vascular Structures That Support Respiration
  - 1. Pulmonary capillaries
    - a. Picks up oxygen from the alveoli
    - b. Releases carbon dioxide (waste) to the alveoli
  - 2. Heart and blood vessels
    - a. Circulates unoxygenated blood to lungs to pick up oxygen
    - b. Circulates oxygenated blood from lungs though heart to cells of the body

II. Physiology of Respiration
- A. Pulmonary Ventilation
  - 1. Ventilation is defined as the movement of air into and out of the lungs
  - 2. Patients with adequate ventilation are moving normal or near-normal volumes of air into and out of the lungs
- B. Oxygenation
  - 1. Refers to the amount of oxygen dissolved in blood and body fluids
  - 2. Blood that is almost fully saturated with oxygen might be described as well-oxygenated blood
- C. Respiration
  - 1. The process by which the body captures and uses oxygen and disposes of carbon dioxide
  - 2. External respiration
  - 3. Internal respiration
  - 4. Cellular respiration
    - a. Each cell of the body performs a specific function
    - b. Oxygen and sugar are essential to produce energy for cells to perform their function
    - c. Produce carbon dioxide as a waste product

III. Pathophysiology of Respiration
- A. Pulmonary Ventilation

1. Interruption of nervous control
    a. Drugs
    b. Trauma
    c. Muscular dystrophy
2. Structural damage to the thorax
3. Bronchoconstriction
4. Disruption of airway patency
    a. Infection
    b. Trauma/burns
    c. Foreign body obstruction
    d. Allergic reactions
    e. Unconsciousness (loss of muscle tone)

B. Oxygenation

C. Respiration
1. External respiration
    a. Deficiencies due to closed environments
    b. Deficiencies due to toxic or poisonous environments
2. Internal respiration
3. Cellular respiration
    a. Ineffective Circulation
        i. shock
        ii. cardiac arrest

IV. Management of Adequate and Inadequate Respiration

A. Assure Patent Airway (techniques described in Airway Management section)

B. Techniques for Assuring Adequate Respirations

V. Supplemental Oxygen Therapy

A. Portable Oxygen Cylinder
1. Cylinder size
    a. D – 350 liters
    b. E – 625 liters
2. Regulators
3. Assembly and use of cylinders
4. Changing a cylinder
    a. Safe residual for operation is 200 psi
5. Securing and handling cylinders

B. Oxygen Delivery Devices
1. Nasal cannula
    a. Purpose
    b. Indications
    c. Procedure
    d. Limitation
2. Non-Rebreather (NRB) Mask
    a. Purpose
    b. Indications
    c. Procedure
    d. Limitation

Airway Management, Respiration, and Artificial Ventilation
Artificial Ventilation

EMR Education Standard

Applies knowledge (fundamental depth, foundational breadth) of anatomy and physiology to assure a patent airway, adequate mechanical ventilation, and respiration while awaiting EMS response for patients of all ages.

Transition Highlights

This section includes increased level of detail.

EMR-Level Instructional Guideline

I. Assessment of Adequate and Inadequate Ventilation
- A. Adequate
  1. Respiratory rate is normal
  2. Respiration depth is normal
  3. Effort of breathing is normal
- B. Inadequate
  1. Abnormal work (effort) of breathing
     a. Muscles between ribs pull in on inhalation
     b. Nasal flaring
     c. Excessive use of abdominal muscles to breath
     d. Sweating
     e. Sitting upright and leaning forward (tripod position)
     f. Fatigue from work of breathing
  2. Abnormal breathing sounds
     a. Stridor
     b. Wheezing heard when patient breathes
  3. Depth of breathing
     a. Shallow
     b. Markedly increased
  4. Rate of breathing
     a. Very slow
     b. Very fast
  5. Chest wall movement or damage
     a. Paradoxical
     b. Splinting
     c. Penetrating
     d. Asymmetric
  6. Irregular respiratory pattern

II. Oxygenation
- A. Adequate
  1. Mental status considered normal for patient
  2. Skin color normal
- B. Inadequate
  1. Ambient air is abnormal
     a. Enclosed space
     b. High altitude

c. Poison gas
2. Mental status considered abnormal or altered for patient
3. Skin color/mucosa is not normal
a. Cyanosis
b. Pallor
c. Mottling

III. Management of Adequate and Inadequate Ventilation
A. Patients With Adequate Ventilation
B. Patients With Inadequate Ventilation
1. May be conscious or unconscious
2. EMR must assist ventilation during respiratory distress/failure
a. Pocket mask
i. purpose
ii. indications
iii. procedure
iv. limitation
v. pocket mask with oxygen outlet
a) advantages
b) oxygen flow rate
b. Bag-valve-mask with reservoir
i. purpose
ii. indications
iii. procedure
iv. limitation
v. indications
a) apnea
b) cardiac arrest
vi. procedure
a) see manufacturer's instructions for the specific device
b) explain the procedure to the patient
c) place the mask over the patient's nose and mouth
d) initially assist at the rate at which the patient has been breathing
e) squeeze the bag each time the patient begins to inhale
f) adjust the rate and the delivered tidal volume
vii. limitations
a) requires oxygen
b) difficult to maintain adequate mask seal with onerescuer operation
c) must have bag-valve-mask device available
d) may interfere with timing of chest compressions during CPR
e) must monitor to assure full exhalation
f) inadequate mask seal
g) difficult to accomplish in combative/hypoxic patients
c. Sellick's maneuver (cricoid pressure)
i. use during positive pressure ventilation
ii. reduces amount of air in stomach
iii. procedure
a) identify cricoid cartilage
b) apply firm backward pressure to cricoid cartilage with thumb and index finger
iv. do not use if
a) patient is vomiting or starts to vomit

b) patient is responsive
c) breathing tube has been placed by advanced level providers

IV. Ventilation of an Apneic Patient
- A. To Oxygenate and Ventilate the Patient
- B. Indications
  1. No breathing is noted
  2. Occasional gasping breathing is noted
- C. Monitoring Patient
- D. Limitation

V. Differentiate Normal Ventilation From Positive Pressure Ventilation
- A. Air Movement
  1. Normal ventilation
     a. Creates negative pressure inside the chest
     b. Air is sucked into lungs
  2. Positive pressure ventilation with pocket mask or bag-mask
- B. Blood Movement
  1. Normal ventilation
     a. Blood returns to the heart from the body
     b. Blood is pulled back to the heart during normal breathing
  2. Positive pressure ventilation
     a. Blood return to the heart is decreased when lungs are inflated
     b. Less blood is available for the heart to pump
     c. Amount of blood pumped out of the heart is reduced
- C. Esophageal Opening Pressure
  1. Normal ventilation
     a. Esophagus remains closed during normal breathing
     b. No air enters the stomach
  2. Positive pressure ventilation with a pocket mask or bag-mask
     a. Air is pushed into the stomach during ventilation
     b. Excess air in stomach may lead to vomiting
- D. Excess Rate or Depth of Ventilation Using Pocket Mask or Bag-Mask Can Harm the Patient as ventilating too fast or too deep may cause low blood pressure, vomiting, or decreased blood flow when the chest is compressed during CPR

Patient Assessment
Scene Size-Up

EMR Education Standard

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

Transition Highlights

This section re-emphasizes scene safety.

EMR-Level Instructional Guideline

I. Scene Safety
- A. Common Scene Hazards
  - 1. Environmental
  - 2. Hazardous substances
    - a. Chemical
    - b. Biological
  - 3. Violence
    - a. Patient
    - b. Bystanders
    - c. Crime scenes
  - 4. Rescue
    - a. Motor-vehicle collisions
      - i. extrication hazards
      - ii. roadway operation dangers
    - b. Special situations
- B. Evaluation of the Scene
  - 1. Is the scene safe?
    - a. Yes -- establish patient contact and proceed with patient assessment.
    - b. No -- is it possible to quickly make the scene safe?
      - i. Yes – assess patient
      - ii. No -- do not enter any unsafe scene until minimizing hazards
    - c. Request specialized

Patient Assessment
Primary Assessment

EMR Education Standard

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

Transition Highlights

This section coverss new terminology.

EMR-Level Instructional Guideline

I. Primary Survey/Primary Assessment
- A. The Primary Survey Quickly Attempts to Identify Those Conditions That Represent an Immediate Threat to the Patient's Life
- B. Level of Consciousness
  1. While approaching the patient or immediately upon patient contact, attempt to establish level of consciousness
     - a. Speak to the patient and determine the level of response
     - b. EMR should identify himself or herself
     - c. EMR should explain that he or she is there to help
  2. Patient response
     - a. Alert
       - i. the patient appears to be awake
       - ii. the patient acknowledges the presence of the EMR
     - b. Responds to verbal stimuli
       - i. the patient opens his/her eyes in respond to the EMR's voice
       - ii. the patient responds appropriately to a simple command
     - c. Responds to painful stimuli
       - i. the patient neither acknowledges the presence of the EMR nor responds to loud voice
       - ii. patient responds only when the EMR applies some form of irritating stimulus
         - a) pinch the patient's ear
         - b) trapezius squeeze
         - c) others
     - d. Unresponsive (patient does not respond to any stimulus)
- C. Airway Status (refer to the current American Heart Association Guidelines)
  1. Unresponsive medical patient open and maintain the airway with head-tilt, chin-lift technique
  2. Unresponsive trauma patient open and maintain the airway with modified jaw thrust technique while maintaining manual cervical stabilization
  3. Responsive patient
     - a. Foreign body or substances in the mouth may impair the airway and must be removed
       - i. finger sweep (solid objects)
       - ii. suction (liquids)
     - b. If the upper airway becomes narrowed, inspiration may produce a high-pitched whistling sound known as stridor

i. foreign body
ii. swelling
iii. trauma

c. Airway patency must be continually reassessed

D. Breathing Status

1. Normal adult breathing

a. Characteristics

i. the respiratory rate will not be too fast or too slow
ii. breathing will produce a visible chest rise and fall
iii. breathing will be quiet
iv. the adult will not be expending much energy to breath

b. Continue maintaining airway, if needed

2. Abnormal adult breathing

a. Characteristics

b. Management

i. administer oxygen to all patients with abnormal breathing
ii. consider assisting breathing with a bag-mask with supplemental oxygen if

a) unresponsive
b) skin is blue (cyanotic) in color

iii. rate issues

a) breathing is too fast for the age of the patient
b) breathing is too slow for the age of the patient

i) does verbal or painful stimulus increase the rate to normal?
ii) assist breathing with a bag-mask with supplemental oxygen
iii) treat patients who are occasionally gasping as if they were not breathing at all

c) breathing is absent
d) assist ventilation with a pocket mask or bag-mask with supplemental oxygen

c. Chest rise and fall is shallow

d. Breathing is noisy

i. gurgling noise without secretions in the mouth
ii. wheezing

e. Effort of breathing

i. accessory muscles

a) neck
b) between ribs
c) abdomen

ii. nasal flaring
iii. tripod position

E. Circulatory Status

1. Is a radial pulse present?

a. Yes

i. normal
ii. adult heart rate 60-100/min
iii. fast
iv. adult heart rate greater than 100/min
v. slow
vi. adult heart rate less than 60/min
vii. irregular pulse

viii. may be normal or abnormal
b. No radial pulse – assess for carotid pulse
i. if carotid pulse present,
ii. lay patient flat and elevate feet 8-12 inches
iii. no carotid pulse,
iv. begin CPR
2. Is any major bleeding present?
a. Yes –
b. control the bleeding
c. No
3. Is the patient maintaining adequate blood flow
a. Skin color
i. pink
ii. assess palms of hands in dark-skinned patients
iii. pale skin may indicate
a) low body temperature
b) blood loss
c) shock (poor blood flow)
d) poor blood flow to a body part
iv. blue (cyanotic skin) may indicate
a) problem with airway, ventilation, respiration
b) poor blood flow
b. Skin temperature
i. cool skin may indicate
a) low body temperature
b) shock
c. Skin moisture
i. dry or slightly moist
ii. wet or sweaty skin may indicate
a) physical exertion
b) severe pain
c) shock
d. Capillary refill (children)
i. press on the skin and release
ii. color should return to area depressed within two seconds
iii. color return in more than two seconds may indicate shock
4. Treat for shock in primary survey if
a. Unresponsive to verbal
b. Heart rate too fast or too slow
c. Skin signs of shock are present
5. Management of shock
a. Administer oxygen by non-rebreather mask at 15 liters per minute (if available)
b. Lay patient flat

F. Identifying Life Threats
1. Assess patient and determine if the patient has a life-threatening condition
a. Unstable: treat life-threatening conditions as soon as they are discovered
b. Stable: assess nature of illness or mechanism of injury

G. Assessment of Vital Functions

Patient Assessment
History-Taking

EMR Education Standard

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

Transition Highlights

This section covers new terminology.

EMR-Level Instructional Guideline

I. Determining the Chief Complaint
- A. The Chief Complaint Is a Very Brief Description of the Reason for Summoning EMS to the Scene
  1. In the best of circumstances, the patient will be able to answer all questions about his or her own chief complaint and medical history
  2. In other cases, this information may be obtained from
     a. Family
     b. Friends
     c. Bystander
     d. Public safety personnel
     e. Medical identification jewelry or other medical information sources

II. Mechanism of Injury or Nature of Illness
- A. Mechanism of Injury
  1. Forces that caused an injury
  2. May help predict presence of injuries
- B. Nature of Illness
  1. Ask patient, family, or bystanders why EMS was called
  2. Look for clues in environment
     a. Hot or cold environment
     b. Presence of drugs or

III. Associated Signs and Symptoms
- A. Ask the Patient to Describe the Current Problem
  1. Sign – any medical or trauma assessment finding that can be seen, felt, or heard by the EMR
     a. Listening to blood pressure
     b. Seeing an open wound
     c. Feeling skin temperature
  2. Symptom – any medical or trauma condition that is described to the EMR by the patient
     a. “I’m having trouble breathing”
     b. “I have a headache”
     c. “My chest hurts”
- B. Events Leading to the Illness or Injury

IV. Age-Related Variations for Pediatric and Geriatric Assessment and Management
- A. Pediatric
  1. Assess infant pulse at brachial artery

2. Capillary refill is a reliable assessment of adequate blood flow in infants and children six and younger
3. Use distracting measures to gain trust
4. See Special Patient Population section (Pediatrics)

B. Geriatric

1. Obtain eye glasses and hearing aids
2. Expect history to take more time
3. See Special Patient Population section (Geriatrics)

Patient Assessment
Secondary Assessment

EMR Education Standard

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

Transition Highlights

This section includes new terminology, increased level of detail and BP assessment. Verify that they understand the new terminology.

EMR-Level Instructional Guideline

I. Performing a Rapid Full-Body Scan
- A. General Approach to the Secondary Assessment
  1. Examine the patient systematically
  2. Place special emphasis on areas suggested by the chief complaint
  3. Many patients view a physical exam with apprehension and anxiety—they feel vulnerable and exposed
     - a. Maintain professionalism throughout the physical exam
     - b. Display compassion towards your patient and family members

II. Focused Assessment of Pain
- A. The EMR Should Complete a Secondary Assessment on All Patients Following the Primary Assessment
- B. Exam May Focus on Specific Area Based on Patient Complaint (i.e. injury or illness)
- C. As the EMR Discovers Specific Signs and Symptoms, There May Be Specific Relevant Questions That the EMR Should Ask. This Material Is Described in Specific Lessons in the Medical and Trauma Sections
- D. Perform a Physical Examination to Gather Additional Information
  1. Compare one side of the body to the other
  2. Inspect (look) and palpate (feel) for the following signs of injury
     - a. Deformities
     - b. Open injuries
     - c. Tenderness
     - d. Swelling
  3. Briefly assess the body from head to toe
     - a. Head
       - i. facial symmetry
       - ii. drainage or bleeding
         - a) nose
         - b) ears
       - iii. objects or swelling in mouth
         - a) vomit, blood
         - b) teeth
     - b. Neck
       - i. stoma
       - ii. open wounds
       - iii. accessory muscles of breathing
     - c. Chest

i. rise and fall
ii. effort of breathing
iii. accessory muscles of breathing
iv. open wounds
v. symmetry

d. Abdomen
i. pain
ii. scars
iii. protruding organs
iv. pregnancy

e. Pelvis

f. All four extremities
i. symmetry
ii. circulation
a) pulses
b) color
c) capillary refill
iii. sensation
iv. movement

4. Immediately treat life-threatening problems found in secondary survey

III. Assessment of Vital Signs

A. Obtain a Complete Set of Vital Signs After Managing Life-Threatening Problems Found in Primary Survey

B. Vital Signs Provide a Starting Point for Judging the Effectiveness of Prehospital Therapy.

1. Respiratory rate

2. Pulse
a. Rate - calculation method
b. Rhythm
c. Strength
d. Location
i. common locations
ii. relationship of pulse to perfusion

3. Blood pressure
a. Measures force of blood against the walls of the artery
b. Reported as systolic blood pressure over diastolic blood pressure in mmHg
i. systolic blood pressure
a) force exerted against the arteries when the heart is contracting
b) normal adult systolic blood pressure
ii. diastolic blood pressure
a) force exerted against the arteries when the heart is between contractions
b) normal adult diastolic blood pressure
c. Technique
i. equipment
a) blood pressure cuff sizes
b) stethoscope
ii. positioning
a) position of the patient
b) position of the arm
iii. measurement
a) auscultation
b) palpation
d. Relationship of blood pressure to perfusion

Patient Assessment
Reassessment

EMR Education Standard

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

Transition Highlights

Reassessment of vital signs added.

EMR-Level Instructional Guideline

I. How and When to Reassess
- A. Identify and Treat Changes in the Patient's Condition in a Timely Manner
  1. Monitor the patient's condition
  2. Monitor the effectiveness of interventions
- B. Reassess at Regular Intervals
  1. Unstable patient every 5 minutes, but more often if indicated by patient condition
  2. Stable patient every 15 minutes or as deemed appropriate by the patient's condition
- C. Reassessment includes
  1. Primary assessment
  2. Vital signs
  3. Chief complaint
  4. Interventions
- D. Compare to the Baseline Status of That Assessment Component
  1. Level of consciousness
  2. Airway
  3. Breathing
     a. Reassess the adequacy of breathing
     b. Monitor breathing rate, depth, and effort
  4. Circulation adequacy
     a. Checking both carotid and radial pulses
     b. Skin color, temperature, and moisture
- E. Vital Signs
  1. Repeat vital signs as necessary
     a. Blood pressure, pulse, and respiration
- F. Chief Complaint
  1. Constantly reassess the patient's chief complaint or major injury(s)
     a. Pain remains the same
     b. Pain getting worse
     c. Pain getting better
  2. Ask if there are new or previously undisclosed complaints
- G. Interventions
  1. Reassess the effectiveness of each intervention performed
  2. Consider the need for new interventions or modifications to care already being provided

II. Age-Related Considerations for Pediatric and Geriatric Assessment

Medicine
Neurology

EMR Education Standard

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

Transition Highlights

All new stroke discussion.

EMR-Level Instructional Guideline

I. Stroke
- A. Causes
  1. Hemorrhage
  2. Clot
- B. Assessment Findings and Symptoms
  1. Confused, dizzy, weak
  2. Decreasing or increasing level of consciousness
  3. Combative, uncooperative, or restless
  4. Facial droop, inability to swallow, tongue deviation
  5. Double vision or blurred vision
  6. Difficulty speaking or absence of speech
  7. Decreased or absent movement of one or more extremities
  8. Headache
  9. Decreased or absent sensation in one or more extremities or other areas of body
  10. Coma
- C. Management of Patient With Stroke Assessment Findings or Symptoms
  1. Scene safety and PPE
  2. ABCs/position
  3. Oxygen/suction
  4. Emotional support

Medicine
Infectious Diseases

EMR Education Standard

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

Transition Highlights

Brief discussion on transmission routes and two added definitions.

EMR-Level Instructional Guideline

I. Infectious Disease Awareness
- A. Definitions
  1. Infectious disease
  2. Communicable disease
- B. Transmission Routes
  1. Direct contact
  2. Coughing and sneezing
  3. Blood borne
  4. Other body fluids

Medicine
Psychiatric

EMR Education Standard

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

Transition Highlights

This section contains new material and suicide risk assessment.

EMR-Level Instructional Guideline

I. Define
II. Assessment
    A. General Appearance
    B. Speech
    C. Skin
    D. Posture/Gait
    E. Mental Status
    F. Mood, Thought, Perception, Judgment, Memory, and Attention
III. Behavioral Change
    A. Factors That May Alter a Patient's Behavior—May Include Situational Stresses, Medical Illnesses, History, Psychiatric Problems, Alcohol or Drugs, Patient Not Taking Psychiatric Medication
    B. Common Causes of Behavioral Alteration
        1. Low blood sugar
        2. Lack of oxygen
        3. Shock
        4. Head trauma
        5. Mind altering substances
        6. Psychiatric
        7. Excessive cold
        8. Excessive heat
        9. Brain infection
        10. Seizure disorders
        11. Poisoning or overdose
        12. Withdrawal from drugs or alcohol
    C. Behavioral Emergencies That Can Be a Danger to the EMR, Patient or Others
        1. Agitation
        2. Bizarre thinking and behavior (i.e. hallucinations, paranoia)
        3. Danger to self—self-destructive behavior, suicide attempt
        4. Danger to others—threatening behavior, violence, weapons
    D. Assessment for Suicide Risk
        1. Depression
        2. Risk factors/signs or symptoms
            a. Has the patient said or done anything that would indicate the possible risk of suicide or violence to self or others?
            b. Certain cultural and religious beliefs
        3. Important questions

a. How does the patient feel?
b. Are you thinking about hurting or killing yourself or anyone else?
c. Is patient a threat to self or others?
d. Is there a medical problem?
e. Is there trauma involved?
f. Does the patient have any weapons on self or in purse?
g. Interventions?

IV. Methods to Calm Behavioral Emergency Patients
- A. Acknowledge That the Person Seems Upset. Restate That You Are There to Help
- B. Inform the Patient About What You Are Doing
- C. Ask Questions in a Calm, Reassuring Voice
- D. Maintain a Comfortable Distance
- E. Encourage the Patient to State What Is Troubling Him
- F. Do Not Make Quick Moves
- G. Respond Honestly to Patient's Questions
- H. Do Not Threaten, Challenge, or Argue With Disturbed Patients
- I. Tell the Truth; Do Not Lie to the Patient
- J. Do Not "Play Along" With Visual or Auditory Disturbances of the Patient
- K. Involve Trusted Family Members or Friends
- L. Be Prepared to Stay at Scene for a Long Time; Always Remain With the Patient
- M. Avoid Unnecessary Physical Contact; Call Additional Help if Needed
- N. Use Good Eye Contact
- O. Avoid Threatening Postures
- P. Other Assessment Techniques to Keep in Mind
    1. Always try to talk patient into cooperation
    2. Do not belittle or threaten patients
    3. Be calm and patient
    4. Reassure the patient
    5. Lower distressing stimuli, if possible
    6. Avoid restraints unless necessary
    7. Treat the patient with respect
    8. Protect the patient and yourself

V. Emergency Medical Care
- A. Scene Size-Up, Personal Safety
- B. Establish Rapport
    1. Interviewing techniques
        a. Acknowledge that you are listening by
            i. nodding
            ii. stating phrases such as, "go on" or "I understand"
        b. Be supportive and empathetic
            i. "I understand that made you angry, sad, upset, etc."
        c. Limit interruptions
        d. Respect patient's territory, limit physical touch
    2. Avoid threatening actions, statements, and questions
    3. Approach slowly and purposefully
- C. Patient Assessment
    1. Ability to make decisions
    2. Delusions, hallucinations
    3. Unusual worries, fears
    4. Anxiety, depression, elation, agitation
- D. Calm the Patient—Do Not Leave the Patient Alone, Unless Unsafe Situation; Consider Need for Law Enforcement
- E. Assist Other EMS Responders With Restraint If Necessary

VI. Consider Age-Related Variations for Pediatric and Geriatric Assessment and Management

A. Pediatric Behavioral Emergencies -- teenage suicide concerns

B. Geriatrics -- suicide issues/depression common

Medicine
Cardiovascular

EMR Education Standard

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

Transition Highlights

This section has added content on chest pain and heart attack.

EMR-Level Instructional Guideline

I. Chest Pain
- A. Causes
  - 1. Decrease in blood supply to part of the heart muscle
    - a. Heart attack -- death of heart muscle
    - b. Angina -- temporary or incomplete interruption of blood supply to heart muscle
  - 2. Assessment and management of both conditions is the same for EMR
- B. Assessment
  - 1. Chest discomfort/pain
  - 2. Pain
    - a. Character and location of discomfort
      - i. Quality -- what does the discomfort feel like?
      - ii. Location -- where is the discomfort?
      - iii. Severity -- consider pain scale
    - b. Does the discomfort go anywhere else (radiate) in your body?
      - i. Arms
      - ii. Back
      - iii. Neck
      - iv. Jaw
      - v. Stomach
  - 3. Shortness of breath may occur
    - a. During activity/exercise
    - b. At rest
    - c. Worse when lying flat
  - 4. Skin
    - a. Cold
    - b. Wet/sweaty
  - 5. Other findings
    - a. Nausea or vomiting
    - b. Lightheadedness
  - 6. Vital signs
    - a. Blood pressure
    - b. Pulse
    - c. Respirations (rate of breathing)
- C. Management
  - 1. High-concentration oxygen
  - 2. Place in position of comfort

3. Encourage the patient to rest
4. Ask if patient has taken any medicine for pain
    a. Aspirin
    b. Nitroglycerin

II. Consider Age-Related Variations for Pediatric and Geriatric Patients for Assessment and Management of Cardiac Compromise

A. Pediatric

1. Heart problems often related to congenital heart condition
2. Cardiac arrest is often caused by a primary respiratory problem

B. Geriatric -- may not have chest discomfort with heart attack

III. Cardiac Arrest (Refer to Shock and Resuscitation section)

Medicine
Toxicology

EMR Education Standard

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

Transition Highlights

New information – use of chemical antidote auto-injector.

EMR-Level Instructional Guideline

I. Nerve Agent Antidote Autoinjector Kit
- A. Types
  1. Mark I -- two autoinjector syringes each contain a separate drug
     a. Atropine
     b. Pralidoxime chloride
  2. DuoDote
     a. One autoinjector syringe that contains both atropine and pralidoxime chloride
     b. FDA-approved 2007
- B. Administer a Nerve Agent Autoinjector Kit If
  1. You or a peer has serious signs or symptoms that indicate the presence of nerve agent poisoning
  2. You are authorized to do so by medical direction
- C. Do Not Give the Nerve Agent Autoinjector Kit If
  1. Mild signs and symptoms such as tearing or runny nose are the only signs of nerve agent poisoning present
  2. Drugs in the nerve agent autoinjector kit
     a. Atropine
        i. Increases heart rate
        ii. Dries secretions
        iii. Decreases gastric upset
        iv. Dilates pupils
     b. 2-PAM Chloride (pralidoxime chloride)
        i. Muscle twitching
        ii. Difficulty breathing
- D. Administration of MARK I ™ Kit
  1. Wear appropriate PPE
  2. Confirm that serious signs and symptoms of nerve agent poisoning are present
  3. Confirm correct drug
  4. Check expiration date
  5. Grasp the atropine syringe
  6. Remove the protective yellow cap
  7. Press the green end of the injector very firmly against the outer aspect of the patient's upper leg (thigh) at a 90 degree angle
  8. Hold for 10 seconds
  9. Check for the presence of a needle at the tip to ensure the drug was injected
  10. Dispose of syringe appropriately

11. Grasp the pralidoxime chloride syringe
12. Remove the gray protective cap
13. Press the black end of the injector firmly against the outer aspect of the patient's upper leg (thigh) at a 90 degree angle
14. Hold for 10 seconds
15. Check for the presence of a needle at the tip to ensure the drug was injected
16. Dispose of syringe appropriately
17. Reassess the patient's signs and symptoms

E. Administration of the DuoDote™ Kit

1. Wear appropriate PPE
2. Confirm that serious signs and symptoms of nerve agent poisoning are present
3. Confirm correct drug
4. Check expiration date
5. Grasp the syringe with your dominant hand
6. Remove the gray protective cap
7. Press the green (needle) end of the injector very firmly against the outer aspect of the patient's upper leg (thigh) at a 90 degree angle
8. Hold for 10 seconds
9. Check for the presence of a needle at the green tip to ensure the drug was injected
10. Dispose of syringe appropriately
11. Reassess the patient's signs and symptoms

Medicine
Respiratory

EMR Education Standard

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

Transition Highlights

This section contains an increased level of detail on respiratory distress.

EMR-Level Instructional Guideline

I. Anatomy of the Respiratory System
- A. Upper Airway
- B. Lower Airway
- C. Lungs and Accessory Structures

II. Normal Respiratory Effort
- A. Assessment Findings and Symptoms and Management for Respiratory Conditions
  1. Respiratory distress
  2. Shortness of breath
  3. Restlessness
  4. Increased pulse rate
  5. Changes in respiratory rate or rhythm
  6. Skin color changes
  7. Abnormal sounds of breathing (i.e. wheezing)
  8. Inability to speak
  9. Accessory muscle use
  10. Altered mental status
  11. Abdominal breathing
  12. Coughing
  13. Tripod position

III. Consider Age-Related Variations for Pediatric and Geriatric Assessment and Management
- A. Pediatric
  1. Upper airway obstruction may be caused by respiratory infections
  2. Lower airway disease may be caused by birth problems or infections
- B. Geriatrics—Pneumonia and Chronic Conditions

Medicine
Genitourinary/Renal

EMR Education Standard

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

Transition Highlights

Hemadialysis added.

EMR-Level Instructional Guideline

I. Hemodialysis
- A. Hemodialysis
  1. Used to eliminate water and wastes from the body when the kidneys fail
  2. Dialysis machine is connected to an access site at fistula, shunt, or access port
- B. Special Considerations for Hemodialysis Patients
  1. Do not obtain BP in the arm with the dialysis fistula or shunt
- C. Life-Threatening Emergencies Associated With Dialysis Patients
  1. Low blood pressure
  2. Nausea/vomiting
  3. Irregular pulse, cardiac arrest
  4. Bleeding from the access site
  5. Difficulty breathing
- D. Management of a Patient with a Dialysis Emergency
  1. Maintain airway
  2. Administer oxygen
  3. Assist ventilation if indicated
  4. Stop bleeding from shunt if present
  5. Position
     a. Flat if signs of shock
     b. Upright if difficulty breathing

Medicine
Diseases of the Eyes, Ears, Nose, and Throat

EMR Education Standard

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

Transition Highlights

Nosebleed added.

EMR-Level Instructional Guideline

I. Nosebleed
- A. Causes
  - 1. Trauma
  - 2. Medical
    - a. Dryness
    - b. High blood pressure
- B. General Assessment Findings and Symptoms
  - 1. Pain or tenderness
  - 2. Bleeding from nose
  - 3. Vomits swallowed blood
  - 4. Can block airway if patient is unresponsive
- C. Techniques to Stop Bleeding in Conscious Patient If No Risk of Spine Injury
  - 1. Sit patient up and lean forward
  - 2. Pinch the nostrils together firmly
  - 3. Tell patient not to sniffle or blow nose

Shock and Resuscitation

EMR Education Standard

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.

Transition Highlights

This is a new section that combines the CPR information from the old curriculum with more detail and a discussion on the use of the AED and includes more detailed shock information.

EMR-Level Instructional Guideline

I. Ethical Issues in Resuscitation
- A. Withholding Resuscitation Attempts
  - 1. Irreversible death
  - 2. Do Not Resuscitate (DNR) orders

II. Anatomy and Physiology Review
- A. Respiratory System
  - 1. Fresh oxygen to enter the lungs and blood supply
  - 2. Respiratory waste products to leave the blood and lungs
- B. Cardiovascular System
  - 1. Heart – four chambers
    - a. When the heart contracts, a wave of blood is sent through the arteries
    - b. Pumps blood to the lungs to pick up oxygen
    - c. Pumps blood around the body
      - i. to deliver oxygen and nutrients to the tissues
      - ii. to remove waste products from the tissues
  - 2. Vascular System
    - a. Arteries carry blood to tissues
    - b. Veins carry blood to heart
    - c. Heart contraction can be felt as a pulse.
      - i. carotid
      - ii. femoral
      - iii. radial
      - iv. brachial
    - d. Veins

III. Respiratory Failure
- A. Many Causes
  - 1. Respiratory infection
  - 2. Heart failure
  - 3. Chronic respiratory illness
  - 4. Trauma
- B. If Untreated, Can Lead to Respiratory Arrest
  - 1. No spontaneous respiration
  - 2. If not treated, quickly leads to cardiac arrest
- C. Signs and Symptoms
  - 1. Altered mental status
  - 2. Cyanosis
  - 3. Inadequate depth and rate of breathing

IV. Cardiac Arrest

A. If the Heart Stops Contracting, No Blood Will Flow
B. The Body Cannot Survive When the Heart Stops
1. Brain damage begins 4-6 minutes after the patient suffers cardiac arrest
2. Damage becomes irreversible in 8-10 minutes
C. Cardio-pulmonary resuscitation (CPR)
1. Artificial ventilation oxygenates the blood
2. External chest compressions squeezes the heart and simulates a contraction
3. Oxygenated blood is circulated to the brain and other vital organs

V. Resuscitation
A. System Components to Maximize Survival
1. Early access
a. Public education and awareness
i. rapid recognition of a cardiac emergency
ii. rapid notification before CPR starts – "phone first"
b. 911-pre-arrival instructions and dispatcher directed CPR
2. Early CPR
a. Lay public
i. family
ii. bystanders
b. Emergency Medical Responders
3. Early Defibrillation
4. Early Advanced Care
B. Basic Cardiac Life Support (refer to the current American Heart Association guidelines)
1. Adult CPR and foreign body airway obstruction
2. Child CPR and foreign body airway obstruction
3. Infant CPR and foreign body airway obstruction
C. Airway Control and Ventilation
1. Basic airway adjuncts
2. Ventilation
a. Delivery of excessive rate or depth of ventilation reduces blood return to the right side of the heart
b. educes the overall blood flow that can be generated with CPR
D. Chest Compressions
1. Factors which decrease effectiveness
a. Compression that are too shallow
b. Slow compression rate
c. Sub-maximum recoil
d. Frequent interruptions

VI. Automated External Defibrillation (AED) (refer to the current American Heart Association guidelines)
A. Adult
B. Child
C. Infant
D. Special AED Situations
1. Pacemaker
2. Wet patients
3. Transdermal medication patches

VII. Shock (Poor Perfusion)
A. Results From Inadequate Delivery of Oxygenated Blood to Body Tissues
B. Can Be a Result of
1. Severe bleeding or loss of fluid from the body
2. Failure of the heart to pump enough oxygenated blood
3. Abnormal dilation of the blood vessels

C. Signs and Symptoms
    1. Extreme thirst
    2. Restlessness, anxiety
    3. Rapid, weak pulse
    4. Rapid, shallow respirations
    5. Mental status changes
    6. Pale, cool, moist skin
    7. Decreased blood pressure (late sign)

D. Patient Assessment
    1. Complete a scene size-up
    2. Perform a primary assessment
    3. Obtains a relevant history
    4. Perform secondary assessment
    5. Perform a reassessment

E. Management
    1. Manual in-line spinal stabilization, as needed
    2. Comfort, calm, and reassure the patient while awaiting additional EMS resources
    3. Do not give food or drink
    4. Airway control (i.e. adjuncts)
    5. Breathing
        a. Oxygen administration (high concentration)
        b. Assist ventilation, as needed
    6. Circulation
        a. Attempt to control obvious uncontrolled external bleeding
        b. Position patient appropriately for all ages
        c. Keep patient warm - attempt to maintain normal body temperature
        d. Treat any additional injuries that may be present

Trauma
Trauma Overview

EMR Education Standard

Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response. This level of provider does not transport patients, but should be able to identify and categorize trauma patients and activate the appropriate trauma system response.

Transition Highlights

The Field Triage Decision Scheme was added to this section.

EMR-Level Instructional Guideline

I. Identification and Categorization of Trauma Patients
- A. Entry-level students need to be familiar with:
  - 1. National Trauma Triage Protocol
    - a. Centers for Disease Control and Prevention. Guidelines for Field Triage of Injured Patients: Recommendations of the National Expert Panel on Field Triage. MMWR 2008:58 RR-1:1-35.
    - b. http://cdc.gov/fieldtriage contains the National Trauma Triage Protocols and additional instructional materials.

Trauma
Soft Tissue Trauma

EMR Education Standard

Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response.

Transition Highlights

Foreign bodies of the eye and extent of burns were added to this section.

EMR-Level Instructional Guideline

I. Foreign Body in Eye
- A. Dirt, Dust, or Chemical
- B. Signs and Symptoms
  1. Pain, tearing, redness
  2. Vision may be blurred
- C. Treatment
  1. Standard precautions
  2. Lay patient flat
  3. Tilt head to affected side so debris or chemical does not flow into unaffected eye
  4. Hold eye lid open with gloved hand
     a. Apply pressure to bones around the eye while holding lid open
     b. Never press on the eye itself
  5. Flush for at least 15 minutes with water or normal saline

II. Burns
- A. Severity
  1. Determined by several factors
     a. Depth of burn
     b. Extent of burn
     c. Respiratory involvement
     d. Part of body burned
     e. Cause of burn
        i. thermal
        ii. chemical
        iii. electrical
  2. Depth
     a. Superficial involves only the outer layer of the skin
        i. pain
        ii. redness of the skin
        iii. swelling
     b. Partial thickness involves the outer and middle layer of the skin
        i. deep intense pain
        ii. reddening
        iii. blisters or moist appearance
     c. Full thickness extends through all layers of the skin
        i. white, yellow, tan, brown or charred appearance
        ii. leathery feel
        iii. no pain in those areas

a) Usually there is pain in surrounding areas with other depth of burns

3. Extent of burn
    a. How much of the body surface is burned
    b. Has a large influence on whether the patient develops
        i. shock
        ii. other complications related to burns
    c. Rule of nines
4. Special management considerations
    a. Stop the burning process with brief application of clean room temperature water or saline
    b. Remove smoldering clothing and jewelry
        i. some clothing may have melted to the skin
        ii. if you meet resistance when removing clothing, leave in place
    c. Continually monitor the airway and breathing
    d. Burned in an enclosed space or on the face could be high risk of swelling of the airway or other breathing problems
    e. Cover the burned area with a dry, clean dressing
        i. do not apply any ointment, lotion, or antiseptic
        ii. do not break blisters
        iii. keep the patient warm
    f. Chemical burns
        i. scene safety
        ii. gloves and eye protection
        iii. brush off dry powder
        iv. flush with copious amounts of water
        v. consider eye burns if splash injury and flush with water
    g. Electrical burns
        i. scene safety -- never touch a patient in contact with an electric source
        ii. often internal damage more severe than external injuries appear
        iii. patient may be in cardiac arrest when EMR arrives
    h. Infant and child considerations
        i. skin covers greater body surface area in relation to the total body size
        ii. greater fluid and heat loss
        iii. keep environment warm when possible
        iv. consider possibility of child abuse

Trauma
Head, Facial, Neck, and Spine Trauma

EMR Education Standard

Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response.

Transition Highlights

This section includes increased level of detail to special management situations.

EMR-Level Instructional Guideline

I. Head, Face, Neck, and Spine Trauma
- A. Injuries to the Brain and Skull
  - 1. Special Management Considerations
    - a. Maintain airway/ ventilation/oxygenation
    - b. Primary assessment with manual in-line spinal stabilization should be done on scene
    - c. Monitor the patient's mental status
    - d. Dress and bandage open wound as indicated in the emergency medical care of soft tissue injuries

Trauma
Special Considerations in Trauma

EMR Education Standard

Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response.

Transition Highlights

Pregnant and elderly patients are added to this section.

EMR-Level Instructional Guideline

I. Pregnant Patient
- A. Recognition
  1. Pregnant women who have suffered an injury should be evaluated by a physician in the emergency room
- B. Management
  1. If the woman is having any symptoms related to shock, high-concentration oxygen should be administered
  2. Place pregnant patient in third trimester on her left side unless spinal injury suspected then tilt spine board to the left after patient is fully secured to the board

II. Elderly Patient
- A. Recognition
  1. Changes in pulmonary, cardiovascular, neurologic, and musculoskeletal systems make older patients susceptible to trauma
  2. Circulation changes lead to inability to maintain normal vital signs during hemorrhage, blood pressure drops sooner
  3. Multiple medications are more common and may affect:
     a. Assessment, especially vital signs
     b. Blood clotting
  4. Skeletal changes cause curvature of the upper spine that may require padding during spinal immobilization
  5. Dentures may cause airway obstruction
  6. Falls are often the result of medical conditions
- B. Management
  1. Suctioning is important in elderly patients due to decreased cough reflex
  2. Skeletal changes cause curvature of the upper spine that may require padding during spinal immobilization
  3. Prevent hypothermia
  4. Broken bones are common

Trauma
Environmental Emergencies

EMR Education Standard

Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response.

Transition Highlights

Submersion and use of AEDs in environmental trauma have been added to this section.

EMR-Level Instructional Guideline

I. Environmental Emergencies
- A. Exposure to Cold
  - 1. Generalized cold emergency
    - a. Contributing factors
      - i. cold environment
      - ii. wet environment
      - iii. wind
      - iv. age (very old/very young)
      - v. medical conditions
      - vi. alcohol/drugs/poisons
    - b. Signs and symptoms of generalized hypothermia
      - i. obvious exposure
      - ii. subtle exposure
        - a) underlying illness
        - b) overdose/poisoning
        - c) ambient temperature decreased (e.g., cool home of elderly patient)
      - iii. cool/cold skin temperature
        - a) place the back of your hand between the clothing and the patient's abdomen to assess the general temperature of the patient
        - b) the patient experiencing a generalized cold emergency will present with cool or cold abdominal skin temperature
      - iv. shivering
      - v. decreasing mental status or motor function
        - a) Depends on the degree of hypothermia
        - b) Poor coordination
        - c) Memory disturbances/confusion
        - d) Reduced or loss of touch sensation
        - e) Mood changes
        - f) Less communicative
        - g) Dizziness
        - h) Speech difficulty
        - i) Stiff or rigid posture
        - j) Muscular rigidity
        - k) Poor judgment – patient may actually remove clothing
        - l) Complaints of joint/muscle stiffness

vi. Slow pulse

c. Management

i. move to a warm environment as soon as possible

ii. remove wet clothing

iii. wrap patient in warm blankets

iv. handle gently

v. assess pulses for 30-45 seconds to determine there is no pulse before starting CPR

vi. if AED states that shock is indicated, defibrillate

2. Local cold emergencies

a. Freezing or near freezing of a body part

b. Usually occurs in fingers, toes, face, ears, and nose

c. Signs and symptoms of local cold injuries

d. Local injury with clear demarcation

i. early or superficial injury

a) blanching of the skin – palpation of the skin in which normal color does not return

b) loss of feeling and sensation in the injured area

c) skin is soft

d) if rewarmed, tingling sensation

ii. late or deep injury

a) white, waxy skin

b) firm or frozen feeling when palpated

c) swelling may be present

d) blisters may be present

e) if thawed or partially thawed, the skin may appear flushed with areas of purple and blanching or may be mottled and cyanotic

e. Special management consideration

i. remove the patient from the cold environment.

a) handle the patient extremely gently

b) protect the patient from further heat loss

c) do not allow the patient to walk or exert himself

d) do not re-expose to the cold

e) remove any wet clothing and cover the patient with a blanket

ii. do not

a) break blisters

b) rub or massage affected area

c) apply heat

d) rewarm if any chance of refreezing

iii. the patient should not be given anything by mouth

a) coffee, tea, or smoking may worsen the condition

b) cover the patient with a blanket; keep the patient warm

iv. if early or superficial injury

a) manually stabilize the extremity.

b) cover the extremity

v. if late or deep cold injury

a) remove jewelry

b) cover with dry clothing or dressings

B. Submersion

1. Definitions

a. drowning – occurs when the patient's airway is surrounded by a liquid that prevents her from breathing air; it may or may not cause death

2. Contributing factors
3. Severity
4. Signs and symptoms
    a. Coughing
    b. Vomiting
    c. Difficulty breathing
    d. Respiratory arrest
    e. Cardiac arrest
5. Special management considerations
    a. If patient is in water be aware of personal safety
    b. Consider possibility of spine injury
        i. if risk of spinal injury exists, manually stabilize the neck and spine
        ii. if no risk of spinal injury exists and patient is breathing
            a) place in recovery position
            b) administer oxygen
        iii. if no risk of spinal injury exists and patient is not breathing, follow American Heart Association guidelines for CPR
    c. Risk of vomiting is high and if patient vomits
        i. roll on side
        ii. suction mouth

Trauma
Multi-System Trauma

EMR Education Standard

Uses simple knowledge to recognize and manage life threats based on assessment findings for an acutely injured patient while awaiting additional emergency medical response.

Transition Highlights

Increased level of detail was added to this section.

EMR-Level Instructional Guideline

I. Multi-System Trauma
- A. Patients Subjected to Significant Forces Have an Increased Risk for Injuries to Multiple Organs Within the Body at the Same Time
- B. Multi-Trauma Patients Are at a Greater Risk of Developing Shock
- C. Suspect Multi-Systems Trauma in Any Patient Subjected to Significant External Forces

Special Patient Populations
Obstetrics

EMR Education Standard

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

Transition Highlights

Vaginal bleeding and Braxton Hicks were added to this section.

EMR-Level Instructional Guideline

I. Vaginal Bleeding in the Pregnant Patient
- A. Light Irregular Discharges of Small Amount of Blood "Spotting" May Be Normal
- B. More Bleeding May Indicate a Problem That Needs Physician's Attention
- C. Mucus With Small Amount of Blood Late in Pregnancy May Mean Delivery Is Near
- D. Any Other Bleeding Late in Pregnancy Is a Serious Emergency
- E. General Assessment
  1. ABCs
  2. Vital signs initially and repeated periodically
  3. SAMPLE history and obstetric history
- F. General Management
  1. Standard precautions
  2. Place patient on left side
  3. Ensure the patient places a sanitary pad over the vaginal opening
  4. Provide shock care
  5. Monitor airway and administer oxygen
  6. Save blood soaked pads in a plastic bag for examination at the hospital
  7. Offer support for the patient while awaiting EMT response

II. General Assessment and Management of the Obstetrical Patient
- A. Signs of Labor
  1. Braxton Hicks/false labor contractions

Special Patient Populations
Pediatrics

EMR Education Standard

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

Transition Highlights

Pediatric assessment triangle was added to this section. Also refocus from "circulatory failure" to "shock."

EMR-Level Instructional Guideline

I. Assessment Process
- A. Patient Assessment
  - 1. Pediatric assessment triangle -- 15- to 30-second assessment of the severity of the patient's illness or injury
    - a. Use prior to addressing "the ABCs"
    - b. Does not require touching the patient; just looking and listening
      - i. appearance
        - a) muscle tone
        - b) interactiveness
        - c) consolability
        - d) eye contact
        - e) speech or cry
      - ii. work of breathing
        - a) abnormal airway noise
          - i) wheezing
          - ii) stridor
          - iii) grunting
        - b) abnormal positioning (i.e. tripoding)
        - c) accessory muscle use
          - i) chest wall
          - ii) nasal flaring
          - iii. assess skin to see if it is
            - a) Pale
            - b) Mottled
            - c) Cyanotic
    - c. possible causes of abnormal findings above
      - i. respiratory distress of failure
      - ii. shock
      - iii. cardiopulmonary failure or arrest
      - iv. other abnormality
      - v. stable patient

Special Patient Populations
Geriatrics

EMR Education Standard

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

Transition Highlights

All new content.

EMR-Level Instructional Guideline

I. Age-Associated Changes
- A. Age Dependent and Variable
- B. Sensory Changes in Older Patients
  1. Vision
     - a. Decreased vision
     - b. Inability to differentiate colors
     - c. Decreased night vision
     - d. Decreased ability to see close up
     - e. Decreased depth perception
  2. Hearing
     - a. Inability to hear high-frequency sounds
     - b. Use of hearing aids
  3. Sense of touch and pain
     - a. Decreased sense of balance
     - b. Diminished pain perception
     - c. Decreased ability to differentiate hot from cold
     - d. Decreased tolerance of hot and cold
- C. Heart/Blood Vessels
  1. High blood pressure
  2. Increased risk of heart and stroke
  3. Heart is less able to beat faster when needed
- D. Lungs and Breathing
  1. Diminished breathing capacity
  2. Increased risk of infection of the lungs
  3. Decreased cough
- E. Stomach and Intestines
  1. Difficulty with digestion
  2. Difficulty chewing –
  3. increased risk of foreign body airway obstruction
- F. Brain and Nervous System
  1. Slower reflexes
  2. Decreased recent memory
- G. Muscles and Bones
  1. Decreased bone density—easier to break
  2. Loss of strength and size of bone and muscles
- H. Other
  1. Increased risk of infections

2. Decreased signs and symptoms of infection when present

II. Assessment and Care Implications

A. Assessment

1. ABCs
    a. Airway may be difficult to assess and manage due to neck arthritis
    b. Dentures should not be removed unless they obstruct the airway or interfere with ventilation if rescue breathing is needed
    c. Increased risk of airway obstructions
    d. Pulse may be irregular due to heart rhythm problems that are common
2. Speak slowly and distinctly at patient's eye level with good lighting
3. Give the patient time to respond unless the condition appears urgent
4. Elderly may not show severe symptoms even if very ill
5. Use family members if available, especially for base line mental status
6. Reassess often as condition may deteriorate quickly

B. Care

1. Handle gently as skin is fragile and can easily tear
2. Reassurance is important

Special Patient Populations
Patients With Special Challenges

EMR Education Standard

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

Transition Highlights

Elder abuse is added.

EMR-Level Instructional Guideline

I. Recognizing and Reporting Abuse and Neglect
- A. Elder Abuse
  - 1. Types of abuse
    - a. Neglect
    - b. Physical abuse
    - c. Sexual abuse
    - d. Emotional abuse
    - e. Financial abuse
  - 2. Epidemiology
  - 3. Assessment
  - 4. Management
  - 5. Legal aspects
  - 6. Documentation

EMS Operations

Mass Casualty Incidents Due to Terrorism and Disaster

EMR Education Standard

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

Transition Highlights

All new content.

EMR-Level Instructional Guideline

The intent of this section is to give an overview of operating during a terrorist event or during a natural or manmade disaster.

Information related to the clinical management of patients exposed to a terrorist event or involved in a disaster is found in the clinical sections of the National EMS Education Standards and Instructional Guidelines for each personnel level.

I. Risks and Responsibilities of Operating on the Scene of a Natural or Man-Made Disaster
- A. Role of EMS
  1. Personal safety
  2. Provide patient care
  3. Initiate/operate in an incident command system (ICS)
  4. Assist with operations
- B. Safety
  1. Personal
     a. First priority for all EMS personnel
     b. Appropriate personnel protective equipment for conditions
     c. Scene size-up
     d. Time, distance, and shielding for self-protection
     e. Emergency responders are targets
     f. Dangers of the secondary attack
  2. Patient
     a. Keep them informed of your actions
     b. Protect from further harm
     c. Signs and symptoms of biological, nuclear, incendiary, chemical and explosive (B-NICE) substances
     d. Concept of “greater good” as it relates to any delay
     e. Treating terrorists/criminals
  3. 360-degree assessment and scene size-up
     a. Outward signs and characteristics of terrorist incidents
     b. Outward signs of a weapons of mass destruction (WMD) incident
     c. Outward signs and protective actions of biological, nuclear, incendiary, chemical, and explosive (B-NICE) weapons
  4. Determine number of patients (implement local multiple-casualty incident (MCI) protocols as necessary)

5. Evaluate need for additional resources
6. EMS operations during terrorist, weapons of mass destruction, disaster events
    a. All hazards safety approach
    b. Initially distance from scene and approach when safe
    c. Ongoing scene assessment for potential secondary events
    d. Communicate with law enforcement at the scene of an armed attack
    e. Initiate or expand incident command system as needed
    f. Perimeter use to protect rescuers and public from injury
    g. Escape plan and a mobilization point at a terrorist incident
7. Care of emergency responders on scene
    a. Safe use of an auto injector for self and peers
    b. Safe disposal of auto injector devices after activation

EMS Operations
Incident Management

EMT Education Standard

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

Transition Highlights

ICS and federal requirements added to this section.

EMR-Level Instructional Guideline

Information related to the clinical management of the patient within components of the Incident Management System (IMS) is found in the clinical sections of the National EMS Education Standards and Instructional Guidelines for each personnel level.

I. Establish and Work Within the Incident Management System
- A. Entry-Level Students Need to Be Certified in
  1. ICS-100: Introduction to ICS, or equivalent
  2. FEMA IS-700: NIMS, An Introduction
- B. This Can Be Done as a Co requisite or Prerequisite or as Part of the Transition Course

EMS Operations
Hazardous Materials Awareness

EMT Education Standard

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

Transition Highlights

This section includes a new requirement.

EMR-Level Instructional Guideline

Information related to the clinical management of the patient exposed to hazardous materials is found in the clinical sections of the National EMS Education Standards and Instructional Guidelines for each personnel level.

I. Risks and Responsibilities of Operating at a Hazardous Material or Other Special Incident

A. Entry-Level Students Need to Be Certified in one of the following:

1. Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 (q)(6)(i) -First Responder Awareness Level*

2. Other courses may qualify to meet this requirement. Contact the Idaho EMS Bureau for more details.

B. This Can Be Done as a Co requisite or Prerequisite or as Part of the Transition Course

*There are a number of sources for this training. Michigan State University is offering this training program at no cost to agencies in the public sector for a limited time. Visit http://www.saferesponse.com/sub_page/hazmat_main.htm for more details.

EMS Operations
Extrication Awareness

EMT Education Standard

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

Transition Highlights

This section includes a new requirement.

EMR-Level Instructional Guideline

The intent of this section is to provide an overview of vehicle extrication to ensure EMS personnel and patent safety during extrication and so those who respond to motor vehicle accidents will be able to function safely as part of a "Rescue Team" as directed by the Incident Commander. This does not prepare the entry-level student to become a vehicle extrication expert or technician.

Information related to the clinical management of the patient being cared for during vehicle extrication is found in the clinical sections of the EMS Education Standards and Instructional Guidelines for each personnel level.

I. Establish and Work Within State Extrication Awareness Training
- A. Entry-Level Students Need to Complete
  1. Idaho Extrication Awareness training course (details available at www.idahoems.org)
  2. Idaho Emergency Services Training (EST) - Extrication Operations Course
- B. This Can Be Done as a Co requisite or Prerequisite or as Part of the Transition Course

II. Extrication Awareness Training Must Include the Following:
- A. Introduction
- B. What is Extrication
- C. Scene Size-up
  1. Scene Security
  2. Incident Management System (IMS)
  3. Collision Forces
  4. Fire Protection
  5. Resource Identification/Activation
  6. Special Situations
- D. Vehicle Systems
- E. Vehicle Stabilization and Gaining Access
- F. Patient(s) Care

Psychomotor Skills

EMR Education Standard

Safely and effectively perform all psychomotor skills within the National EMS Scope of Practice Model AND state Scope of Practice at this level.

Transition Highlights

This section highlights psychomotor skills removed from the Scope of Practice and includes new content for skills added to the Scope.

EMR-Level Instructional Guideline

The intent of this section is to provide an overview of skills or intervention changes between the Idaho License levels based on the old Idaho Standard Curriculum (ISC) and the new license levels based on the 2011 Idaho EMS Curriculum (IEC).

For more information on Idaho Scope of Practice changes, visit the Idaho EMS Physician Commission website at www.emspc.dhw.idaho.gov for the Draft 2012-1 EMSPC Future Scope of Practice grid which highlights changes between the old scope and new 2012 EMSPC Scope.

I. Skills or interventions added
- A. Airway and Breathing
  1. Modified Chin Lift
- B. Pharmacological interventions
  1. Atropine sulfate & 2-Pralidoxime chloride auto-injector (e.g. Mark-1, Duo-Dote) self and peer.
- C. Trauma Care
  1. Eye Irrigation

II. Skills or interventions removed
- A. Jaw-thrust – Modified (trauma) – changed to an Optional Module skill
- B. Hemorrhage Control – Pressure Point
- C. Nasal Airway
- D. Supplemental oxygen therapy:
  1. Humidifiers
  2. Partial-rebreather mask
  3. Simple Face
  4. Venturi mask