Emergency Medical Services Fellowship Curriculum

Introduction:

The following document describes in broad terms the curricular goals and objectives, evaluation and assessment methods for fellowship training in EMS. This details the breadth, uniqueness and complexity of an EMS Fellowship Curriculum and is based on the components of the Core Content for EMS Medicine (Appendix E).

[[DRAFT of Sept 9, 2009 – subject to change and revision.]]
1.0 Clinical Aspects of Prehospital medicine

The following are goals that are broadly applicable to every incident and clinical scenario and as such are delineated here rather than within the body of each heading or subheading.

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Rapidly assess patients within the limitations of the prehospital environment
2. Formulate and execute a field treatment plan for prehospital patients
3. Utilize knowledge of evidence based best practices to provide medically sound treatment for care of patients in the prehospital setting
4. Provide longitudinal care during transport of the patient from the point of initial contact to arrival at a definitive care facility
5. Provide an effective transition of patient care to personnel at the definitive care facility
6. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
7. Demonstrate an understanding of the variants and special circumstances of practice in the prehospital environment
8. Demonstrate proficiency with special equipment used in EMS
9. Develop an working knowledge of the differences in equipment and stabilization procedures utilized in the prehospital environment compared to that used in hospital settings
10. Analyze and design scientifically and ethically sound research protocols to improve the quality of prehospital care
### 1.1 Time/Life Critical Events

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize patients in the prehospital environment with time/life critical events
2. Perform procedures necessary for patient stabilization and treatment in the prehospital environment
3. Assess and manage the airway in the prehospital environment
4. Assess and manage breathing through physical examination, measurement of oxygen saturation and end-tidal CO2 monitoring
5. Assess and manage circulation and delivery of medication
6. Assess and manage the differential diagnosis to find and treat reversible causes of time/life critical events

**Evaluation and Assessment Methods:**

1. Direct observation of patient assessment and treatment skills in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, patient
4. Retrospective chart review
1.1 Time/Life Critical Events

1.1.1 Cardiac arrest

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Assess and manage the airway in the prehospital environment, utilizing advanced airway devices to manage a compromised airway
2. Assess and manage breathing through confirmation of proper airway device placement by physical examination criteria, measurement of end-tidal CO2 monitoring and detection of esophageal placement
3. Assess and manage circulation and delivery of medication by adequate chest compressions, establishing IV access, monitoring ECG for rhythm irregularities and providing the appropriate prehospital medications for the rhythm and vital signs
4. Assess and manage the differential diagnosis to find and treat reversible causes of cardiac arrest
5. Understand existing legislation regarding advanced directives, do not resuscitate orders, and related initiatives
6. Employ local regulations on death certification when prehospital resuscitative efforts fail or there are clinical indications to end resuscitative efforts
7. Evaluate possible forensic considerations in cardiac arrest cases
8. Apply respectful, effective techniques of communicating resuscitative effort outcomes to the patient’s family or loved ones

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of cardiac arrest patients in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and residents
4. Retrospective chart review
1.1 Time/Life Critical Events

1.1.2 Respiratory Failure

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Provide supplemental oxygen with various adjuncts available in the prehospital setting
2. Maintain an airway with adjuncts available in the prehospital setting
3. Provide definitive airway control with tracheal intubation in the prehospital setting
4. Perform basic and advanced airway maneuvers using alternative and rescue airway devices to include but not limited to supraglottic, Seldinger, and dual lumen devices
5. Understand the pros and cons of drug assisted intubation in the prehospital setting
6. Recognize prehospital patients who would benefit from noninvasive ventilatory support, to include but not limited to Continuous Positive Airway Pressure (CPAP) or bi-level positive airway pressure (BiPAP)
7. Acquire working knowledge in the use of non invasive ventilatory support devices and transport ventilators
8. Effectively respond to the difficult and failed airway in the prehospital setting
9. Explain the use of prehospital pediatric airway techniques
10. Perform rapid sequence intubation for prehospital patients with elevated intracranial pressure
11. Understand the prehospital array of treatment modalities of respiratory failure in asthmatic patients
12. Predict the prehospital clinical challenges for acute anaphylaxis patients with respiratory failure
13. Organize a prehospital approach to airway management of pregnant patients
14. Operate under various environmental stressors to manage prehospital patients with respiratory failure

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of respiratory failure/ distress patients in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, definitive care physicians
4. Retrospective chart review
1.1 Time/Life Critical Events
   1.1.3 Drowning

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Rapidly triage, categorize and evaluate drowning and near drowning patients
2. Understand how age, submersion time, water temperature, water tonicity, degree of water contamination, symptoms, associated injuries (especially cervical spine and head), presence of co-ingestants, underlying medical conditions, type and timing of rescue and resuscitation efforts, and response to initial resuscitation are relevant factors in the prehospital setting
3. Demonstrate and understand management the airway and the potential for spinal injury in the water environment
4. Understand rescue techniques including application of spinal immobilization in the water
5. Provide early intervention of rescue breathing while patient is still in the water
6. Recognize the need for prehospital initiation of rewarming
7. Evaluate possible forensic considerations particularly in pediatric drowning
8. Specify the importance of deterrence, prevention and community education to mitigate prehospital drowning

Evaluation and Assessment Methods:

1. Direct observation of management skills during rescue and treatment of drowning and near drowning in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, receiving physicians
4. Retrospective chart review
1.1 Time/Life Critical Events
   1.1.4 Hypotension and Shock

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Explain the prehospital interventions in the early treatment and management of hypovolemic, obstructive, cardiogenic and distributive shock
2. Develop a working understanding of decreased mortality outcomes with access to early revascularization in cardiogenic shock due to acute myocardial infarction
3. Identify prehospital patients who meet criteria for systemic inflammatory response syndrome and who would benefit from early intervention
4. Describe the role of crystalloid infusion to prehospital patients experiencing sepsis and hypotension
5. Identify and manage prehospital patients experiencing hypotension and shock from anaphylaxis
6. Understand the role of vasopressors in prehospital patients with inadequate tissue perfusion
7. Acquire working knowledge of the role of prehospital ultrasound in the assessment and care of the patient with shock
8. Perform necessary stabilization procedures in the field
9. Understand evidence based practice implications of goal-directed therapy initiated in the prehospital setting

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patient with hypotension and/or shock in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, receiving physicians, allied health personnel, and family
4. Retrospective chart review
1.1 Time/Life Critical Events
   1.1.5 Altered Mental Status

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Apply a working knowledge of control techniques for the prehospital combative patient including but not limited to calming techniques, physical restraint, and chemical restraint
2. Manage the airway of a combative patient with altered mental status utilizing drug-assisted sedation or rapid sequence intubation
3. Determine the appropriate destination facility based on cause of altered mental status (e.g. stroke centers, neurosurgical capabilities, psychiatric needs)
4. Treat readily reversible causes of altered mental status in the prehospital patient

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients with altered mental status in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and definitive care physicians
4. Retrospective chart review
1.2 Injury

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Perform procedures necessary for patient stabilization and treatment in the prehospital environment
2. Understand the unique issues in airway management in the injured patient prehospital environment
3. Assess and manage breathing through physical examination, measurement of oxygen saturation and end-tidal CO2 monitoring
4. Assess and manage circulation with recognition of and intervention in shock
5. Be able to develop a differential diagnosis of injury patterns
6. Understand the epidemiology of injury
7. Participate in injury prevention activities within the community

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.2 Injury

1.2.1 Trauma

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Provide direct medical care for an entrapped patient
2. Safely use protective equipment (such as turn-out clothing) during the care of an entrapped patient
3. Understand and apply the fundamental principles behind limiting scene time and promoting rapid transport in trauma patients
4. Apply the principles of field trauma triage utilizing evidence-based guidelines
5. Perform appropriate field spinal immobilization techniques in the prehospital setting
6. Understand the role of prehospital ultrasound in the assessment of the trauma patient and its affect on access to definitive care
7. Apply an understanding of the role of helicopter transport for trauma patients
8. Understand the limitations of trauma resuscitation and criteria for the termination of care in the field

Evaluation and Assessment Methods:

1. Direct observation of management and procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.2 Injury
1.2.2 Orthopedics

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Perform field immobilization for orthopedic injuries in the prehospital setting using standard and improvised splinting materials and techniques
2. Perform emergent field reductions of orthopedic dislocations that present with neurovascular compromise
3. Explain the prehospital approach to pelvic fractures
4. Prioritize orthopedic injuries in the prehospital multiple trauma patient
5. Identify and use appropriate analgesic agents for prehospital patients with orthopedic injuries
6. Determine the appropriate destination facility based upon the nature of the orthopedic injury (i.e. pediatric, re-implantation, spinal, vascular needs)
7. Understand local resource limitation on treatment of specific orthopedic injuries and how to appropriately refer patients directly from the scene to improve morbidity outcomes

Evaluation and Assessment Methods:

1. Direct observation of management skills and procedures for orthopedic injuries during care of patients in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury

1.2.3 Management of Concussion

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand mechanisms of traumatic brain injury in prehospital patients
2. Apply evidence-based guidelines in the management of head-injured patients requiring ventilatory support
3. Use evidence based best practices for appropriate referral versus return to play in the setting of sports-sustained head injuries
4. Coordinate appropriate patient care with sports team physicians, athletic trainers, therapists, coaching staff, and other allied health personnel

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury
  1.2.4 Back Injury

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand mechanisms of back injury and back pain in prehospital patients
2. Perform spinal immobilization in the prehospital environment
3. Effectively manage pain for patients with back injuries or low back pain
4. Understand the various work environment/ergonomic factors that contribute to back injuries of emergency responders
5. Apply principles of ergonomics and injury prevention in the selection of proper prehospital equipment
6. Develop and oversee work hardening and occupational injury prevention programs to minimize or avoid back injuries in emergency responders
7. Utilize and advocate recommended techniques for moving and lifting patients and equipment that avoid possible back injuries
8. Evaluate back-injured personnel and work with consultants and primary physicians to formulate a therapeutic plan that allows for safe return to duties

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury

1.2.5 Assault – Domestic/Sexual/Elder Abuse/Child Abuse

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Assess and ensure the safety of personnel and patients in the case of suspected abuse or assault
2. Recognize possible evidence of abuse and assault in a patient in the prehospital environment
3. Understand the special considerations of patient management in the setting of suspected domestic violence
4. Understand the special considerations of patient management in the setting of suspected sexual abuse or assault
5. Understand the special considerations of patient management in the setting of suspected elder abuse or neglect
6. Understand the special considerations of patient management in the setting of suspected child abuse or neglect
7. Design and apply field triage criteria to determine appropriate facility destinations for patients with suspected abuse or assault
8. Identify forensic implications of physical examination and evidence preservation in the prehospital setting
9. Collaborate with public health, social services, and law enforcement agencies relative to required reporting and access to support services

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury
1.2.6 Hypothermia

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Accurately diagnose hypothermia with limited prehospital equipment
2. Understand the special considerations of re-warming hypothermic patients in the field
3. Understand the criteria for the termination of care in the field in a hypothermic patient

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury

1.2.7 Frostbite

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the management frostbite injuries under various environmental conditions
2. Accurately diagnose hypothermia with limited prehospital equipment
3. Understand the special considerations of appropriate protection versus re-warming of cold injured parts of the body
4. Understand the risk of refreezing injury after thawing
5. Explain appropriate care of various stages of blisters involved in frostbite
6. Effectively provide prehospital analgesia for patients with frostbite
7. Identify cases of compartment syndrome associated with frostbite and the role of expedient access to definitive care
8. Evaluate factors which contribute to cold injuries in emergency responders
9. Assess and manage emergency personnel in the field with cold exposure injuries

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury

1.2.8 Heat-Related Illnesses

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the differential diagnosis of heat exhaustion and heat stroke and the impact of expedient access to definitive care
2. Accurately diagnose hyperthermia with limited prehospital equipment
3. Initiate aggressive cooling measures as rapidly as possible to minimize end-organ damage in theprehospital heat stroke patient
4. Evaluate factors which contribute to heat-related illnesses in emergency responders
5. Assess and manage emergency personnel in the field with heat-related illnesses
6. Effectively manage the care of firefighters suffering heat-related illness secondary to fire ground activities
7. Manage and deliver effective care during fire ground rehabilitation activities

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients with heat-related illness in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.2 Injury
   1.2.9 High-Altitude Injury

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the differential diagnosis of high altitude pulmonary edema and high altitude cerebral edema and the appropriate management of each
2. Accurately diagnose high altitude pulmonary edema and high altitude cerebral edema with limited prehospital equipment
3. Understand the appropriate usage of portable hyperbaric equipment
4. Evaluate factors which contribute to altitude illness in emergency responders
5. Provide appropriate prophylactic treatment and advocate prophylactic techniques to prevent altitude injury in rescue personnel

Evaluation and Assessment Methods:

1. Direct observation of management skills during care of patients with high altitude illness in the prehospital environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.3 Medical Emergencies

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize patients in the prehospital environment with medical emergencies
2. Perform procedures necessary for patient stabilization and treatment in the prehospital environment
3. Assess and manage the airway in the prehospital environment
4. Assess and manage breathing through physical examination, measurement of oxygen saturation and end-tidal CO2 monitoring
5. Assess and manage circulation and delivery of medication
6. Assess and manage the differential diagnosis to find and treat reversible causes of medical emergencies

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.1 Respiratory

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Distinguish between the many causes of respiratory distress including but not limited to: chronic obstructive pulmonary disease, congestive heart failure, asthma, pneumonia, pneumothorax, psychological distress, respiratory distress of the newborn, and anaphylaxis in the prehospital environment as constrained by the equipment and resources available
2. Proficiently use monitoring and evaluation devices (such as pulse oximetry and capnography) in the care of prehospital patients with respiratory distress
3. Analyze capnographic waveforms in the assessment of a patient’s respiratory status
4. Assess and manage the airway in the prehospital environment
5. Assess and manage breathing through physical examination, measurement of oxygen saturation and end-tidal CO2 monitoring

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.1 Respiratory

1.3.1.1 Shortness of Breath

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Distinguish between the many causes of respiratory distress including but not limited to: chronic obstructive pulmonary disease, congestive heart failure, asthma, pneumonia, pneumothorax, psychological distress, respiratory distress of the newborn, and anaphylaxis in the prehospital environment as constrained by the equipment and resources available
2. Proficiently use monitoring and evaluation devices (such as pulse oximetry and capnography) in the care of prehospital patients with shortness of breath
3. Analyze capnographic waveforms in the assessment of a patient’s respiratory status
4. Recognize patients who would benefit from an assistive respiratory support device, such as Continuous Positive Airway Pressure (CPAP) and Bi-level Positive Airway Pressure (BiPAP), and demonstrate working knowledge of these devices
5. Perform basic and advanced airway maneuvers using alternative and rescue airway devices to include but not limited to supraglottic, Seldinger, and dual lumen devices
6. Provide definitive airway control with tracheal intubation in the prehospital setting
7. Understand the pros and cons of drug assisted intubation in the prehospital setting
8. Perform rapid sequence intubation with resources constrained by the prehospital environment
9. Demonstrate proficiency in the use of transport ventilators
10. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
   1.3.1 Respiratory
   1.3.1.2 Pneumothorax

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize a patient with suspected pneumothorax without the aid of diagnostic aids such as radiography
2. Manage a patient with pneumothorax utilizing needle thoracostomy, tube thoracostomy, and alternative drain devices
3. Manage an open chest wound with occlusive dressings or alternative devices
4. Understand the physiology and management of patients with pneumothorax during evacuation by helicopter and by fixed wing aircraft
5. Justify the role of prehospital ultrasound in the assessment of the patient with pneumothorax and its affect on timeliness of treatment and access to definitive care
6. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
  1.3.2 Cardiovascular

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Assess and manage circulation and delivery of medication
2. Assess and manage the differential diagnosis to find and treat reversible causes of cardiovascular emergencies
3. Develop proficiency in the use of monitoring and evaluation devices (such as pulse oximetry and 12-lead electrocardiography) in the care of prehospital patients
4. Perform basic and advanced procedures (such as cardiac pacing and defibrillation)
5. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.2 Cardiovascular

1.3.2.1 ST elevation myocardial infarction (STEMI)

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Formulate evidence-based treatments which improve access to care and survival in patients with STEMI
2. Develop proficiency in the use of monitoring and evaluation devices including but not limited to pulse oximetry, capnography, and 12-lead electrocardiography in the care of prehospital patients
3. Perform basic and advanced procedures including but not limited to synchronized cardioversion, cardiac pacing, and defibrillation
4. Understand and apply the fundamental principles behind limiting scene time and promoting rapid transport in patients with acute ST elevation myocardial infarction
5. Appropriately apply supplemental oxygen to patients with acute ST elevation myocardial infarction
6. Apply the recommended guidelines to determine the appropriate destination facility for a patient with acute ST elevation myocardial infarction to improve morbidity and mortality outcomes
7. Develop proficiency in the use of fibrinolytics in the prehospital patient with acute ST elevation myocardial infarction
8. Apply an understanding of the role of helicopter transport for patients within the therapeutic window for treatment of acute ST elevation myocardial infarction
9. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.2 Cardiovascular
1.3.2.2 Acute exacerbation of CHF

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop an understanding of the differentiation of COPD, congestive heart failure, asthma, and pneumonia in the prehospital environment as constrained by the equipment and resources available
2. Recognize patients who would benefit from an assistive respiratory support device such as Continuous Positive Airway Pressure (CPAP) and Bi-level Positive Airway Pressure (BiPAP) and demonstrate working knowledge of these devices
3. Develop proficiency in the use of vasopressors, inotropes, and after-load reducing agents in the field management of patients with presumed acute congestive heart failure
4. Acquire working knowledge in the use of transport ventilators
5. Justify the role of limited prehospital echocardiography in the assessment of the patient with pump failure its affect on prehospital treatment
6. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.2 Cardiovascular
1.3.2.3 Implantable cardiac devices

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Evaluate an implantable cardiac device such as pacemaker, implantable defibrillator, or left-ventricular assist device
2. Utilize devices such a magnets in the evaluation of a patient with a pacemaker
3. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of assessment and management of implanted cardiac devices in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
  1.3.3 Neurological

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Manage the care of patients with neurological emergencies in the prehospital environment
2. Distinguish among the many causes of neurological emergencies including but not limited to seizure, status epilepticus, stroke, transient ischemic attack, intracranial hemorrhage
3. Manage the care of patients with chronic and/or progressive neurological diseases such as but not limited to Parkinson’s disease, Lou Gehrig’s disease, multi-infarct dementia, and movement disorders
4. Manage the care of seizure patients and status epilepticus in the prehospital environment
5. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
  1.3.3 Neurological
  1.3.3.1 Stroke

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop proficiency in the use of stroke recognition tools (such as the Cincinnati Prehospital Stroke Scale, the Los Angeles Stroke Screen, and the NIH Stroke Scale)
2. Understand and apply the fundamental principles behind limiting scene time and promoting rapid transport in patients with stroke
3. Apply the recommended guidelines to determine the appropriate destination facility for a patient with acute stroke
4. Apply an understanding of the role of helicopter transport for patients within the therapeutic window for treatment of acute stroke
5. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
  1.3.4 Diabetic Emergencies

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop proficiency in the management of diabetic emergencies in the prehospital environment (including the role of glucagon, oral glucose, intranasal glucagon, and various concentrations of intravenous dextrose)
2. Develop proficiency in the management of diabetic emergencies during transport of the prehospital patient with a continuous insulin infusion device
3. Distinguish prehospital diabetic patients that can be safely treated and released
4. Recognize the potential for intentional insulin overdose
5. Collaborate with community physicians and endocrine specialists to assure definitive care and follow-up
6. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.5 Abdominal Pain

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Distinguish those patients with abdominal pain with life-threatening emergencies
2. Appropriately initiate intravenous fluid resuscitation
3. Develop proficiency in the initiation of pain management with appropriate analgesics prior to evaluation in the emergency department
4. Utilize prehospital ultrasound in the assessment of the patient with abdominal pain
5. Collaborate with community physicians, gastroenterologists, and other specialists to assure definitive care and follow-up for patients
6. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.6 Renal

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop a working knowledge of dialysis shunts, fistulas, and catheters and the commonly associated emergencies associated with these devices
2. Recognize the potential for hyperkalemia in patient with a renal emergency during the application of prehospital rapid sequence intubation and associated medications
3. Recognize and understand the management of a cardiac arrest in a patient with known or suspected hyperkalemia
4. Collaborate with dialysis personnel and nephrology subspecialists to care for patients with emergent conditions
5. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.7 Genitourinary

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Proficiently use drainage devices (i.e. Foley catheters, suprapubic catheters, etc.) in the field particularly in the setting of wilderness EMS, long transports, urban search and rescue, and patients with spinal injuries
2. Proficiently use other urinary drainage devices (suprapubic catheter, nephrostomy tube, or similar) in the prehospital setting
3. Be able to troubleshoot genitourinary devices in prehospital patients such as Foleys, suprapubic catheters, nephrostomy tubes, and other urinary drainage devices during patient transports
4. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
   1.3.8 Obstetric and Gynecologic

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Proficiently manage obstetric emergencies in the prehospital environment including but not limited to preeclampsia/eclampsia, premature labor, high-risk labor, birth of multiples, prolapsed cord, unusual presentations, and maternal demise
2. Proficiently manage gynecological emergencies in the prehospital environment including but not limited to vaginal hemorrhage, ovarian torsion, ovarian rupture, fallopian tube rupture
3. Understand the indications for and the acquire the ability to perform peri-mortem Cesarean section
4. Understand the role of prehospital maternal resuscitation with regard to fetal outcome and survival
5. Appropriately and safely perform procedures necessary for patient stabilization and treatment
6. Collaborate with community physicians and obstetric and gynecology subspecialists to provide definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies  
1.3.8 Obstetric and Gynecologic  
1.3.8.1 Perinatal Issues

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Proficiently manage patients with  
   a. threatened abortion  
   b. miscarriage  
   c. complication of therapeutic abortion  
   d. placental abruption  
   e. placenta previa  
   f. premature rupture of membranes  
   g. early fetal demise  
   h. premature labor

2. Collaborate with community physicians and obstetric specialists to provide definitive care and follow-up

3. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.8 Obstetric and Gynecologic
1.3.8.2 Childbirth

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Differentiate high-risk delivery from normal delivery and appropriately manage the labor and birth
2. Utilize appropriate pain management techniques during the intrapartum period
3. Proficiently manage the following obstetric emergencies in the prehospital environment:
   a. Preeclampsia/eclampsia
   b. Birth of multiples
   c. Umbilical cord prolapse
   d. Breech birth
   e. Shoulder dystocia
   f. Placenta previa
   g. Maternal demise
   h. Post partum hemorrhage
4. Interact with home birth professionals to assume care of laboring patients in distress
5. Understand the indications for and the ability to perform peri-mortem Cesarean section
6. Understand the role of maternal parenteral analgesics on neonatal resuscitation
7. Appropriately and safely perform procedures necessary for patient stabilization and treatment
8. Collaborate with community physicians and obstetric specialists to provide definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.8 Obstetric and Gynecologic
1.3.8.3 Vaginal hemorrhage

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop a working differential diagnosis of life-threatening vaginal hemorrhage
2. Proficiently manage life-threatening vaginal hemorrhage (including fluid resuscitation and vaginal packing)
3. Appropriately and safely perform procedures necessary for patient stabilization and treatment
4. Collaborate with community physicians and obstetric specialists to provide definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
   1.3.8 Obstetric and Gynecologic
   1.3.8.4 Ectopic pregnancy

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply the fundamental principles behind limiting scene time and promoting rapid transport in patients with suspected ectopic pregnancy
2. Apply the recommended guidelines to determine the appropriate destination facility for a patient with an ectopic pregnancy
3. Justify the role of prehospital ultrasound in the assessment of the patient with suspected ectopic pregnancy
4. Appropriately and safely perform procedures necessary for patient stabilization and treatment
5. Collaborate with community physicians and obstetric specialists to provide definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.9 Poisoning/Toxicologic Emergencies

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize specific toxins and their effects in the prehospital environment
2. Proficiently manage patients who have ingested of poisons utilizing appropriate antidotes in the prehospital environment
3. Demonstrate knowledge of the chemical properties of hazardous materials and effects of exposure to these materials in the prehospital environment
4. Understand the components of scene safety and protection of personnel when caring for contaminated patients
5. Recognize the need for and the mechanisms for providing initial decontamination in the prehospital environment
6. Proficiently manage patients with caustic substance ingestion in the prehospital environment
7. Apply evidence based best practices in the prehospital management of HAZMAT and toxicological emergencies
8. Perform medical assessments and interventions in a “warm zone” and/or “hot zone” and/or “exclusionary zone”
9. Appropriately and safely perform procedures necessary for patient stabilization and treatment
10. Collaborate with hazardous materials experts and teams to provide emergent care to patients during decontamination
11. Collaborate with Poison Control Centers and toxicologists to report exposures/ingestions and assure case follow-up
12. Collaborate with community physicians and hospitalists to provide appropriate definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.9 Poisoning/Toxicologic Emergencies

1.3.9.1 Clinical management of specific toxins

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize the need for and the mechanisms for providing initial decontamination in the prehospital environment
2. Develop proficiency in the use of hazardous materials protective equipment
3. Perform medical assessments and interventions in a “warm zone” and/or “hot zone” and/or “exclusionary zone”
4. Develop proficiency in the recognition and field management of the following toxins:
   a. Carbon monoxide
   b. Cyanide
   c. Hydrofluoric acid
   d. Organophosphates
   e. Blistering agents
   f. Phosgene
   g. Hydrocarbons
   h. Chlorine
5. Appropriately and safely perform procedures necessary for patient stabilization and treatment
6. Collaborate with hazardous materials experts and teams to provide emergent care to patients during decontamination
7. Collaborate with community physicians and hospitalists to provide appropriate definitive care and follow-up
8. Collaborate with Poison Control Centers and toxicologists to report exposures/ingestions and assure case follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.9 Poisoning/Toxicologic Emergencies

1.3.9.2 Knowledge of poisons, antidotes, chemical properties of hazardous materials, radiation and effects of exposure, and approach to initial decontamination

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Demonstrate proficiency in the use of appropriate antidotes for common poisonings
2. Demonstrate proficiency in accepted gastric decontamination procedures
3. Collaborate with Poison Control Centers and toxicologists to report exposures/ingestions and assure case follow-up
4. Demonstrate knowledge of the chemical properties of hazardous materials
5. Proficiently use hazardous materials protective equipment
6. Perform medical assessments and interventions in a “warm zone” and/or “hot zone” and/or “exclusionary zone”
7. Collaborate with hazardous materials experts and teams to provide emergent care to patients during decontamination
8. Demonstrate knowledge of radiation exposure effects
9. Collaborate with radiation experts and teams to provide emergent care to patients during decontamination
10. Proficiently use radiation detection devices and personal protective equipment
11. Appropriately and safely perform procedures necessary for patient stabilization and treatment
12. Collaborate with community physicians and hospitalists to provide definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.9 Poisoning/Toxicologic Emergencies
1.3.9.3 Caustic substance ingestion

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize the need for and the mechanisms for providing initial decontamination in the prehospital environment
2. Recognize the need for personal protective equipment for all responders
3. Proficiently manage patients with caustic substance ingestion
4. Proficiently manage the airway of a patient with caustic substance ingestion
5. Collaborate with Poison Control Centers and toxicologists to report exposures/ingestions and assure case follow-up
6. Collaborate with community physicians and hospitalists to provide definitive care and follow-up
7. Appropriately and safely perform procedures necessary for patient stabilization and treatment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
  1.3.10 Dermatology

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Proficiently care for patients with desquamating diseases through the use of burn dressing and other appropriate equipment as constrained by the prehospital environment
2. Be able to recognize rashes indicative of potentially transmissible diseases
3. Appropriately and safely perform procedures necessary for patient stabilization and treatment
4. Collaborate with community physicians, burn specialists, and dermatologists to provide definitive care and follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies

1.3.11 Communicable Diseases

1.3.11.1 General

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize patients in the prehospital environment with signs and symptoms concerning for suspected dangerous infectious agents (e.g., SARS, Pandemic Influenza, biological agents of terrorism)
2. Rapidly determine the need for and initiate isolation or quarantine of those patients with signs and symptoms concerning for suspected infectious agents using resources constrained by the prehospital environment
3. Provide knowledge and recommendations for the appropriate level of routine precautions and personal protective equipment for providers based on the transmissibility of the infectious agent
4. Formulate and execute a post-exposure prophylaxis plan for prehospital providers exposed to infectious agents
5. Enact a plan that incorporates prehospital providers in a mass immunization and/or prophylaxis program for community-wide exposures to infectious agents
6. Proficiently employ various levels of personal protective equipment used the prehospital environment
7. Appropriately modify prehospital procedures and interventions to minimize risk of exposure in the setting of an infectious or communicable disease
8. Appropriately and safely perform procedures necessary for patient isolation or quarantine, and treatment
9. Collaborate with public health agencies to report communicable disease cases and exposures to assure case follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.11 Communicable Diseases
1.3.11.2 Multi Drug Resistant Organisms (MDROs)

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop an understanding of MDROs and the risks they pose to patients and providers in the prehospital setting
2. Provide knowledge and recommendations to protect patients and providers from contracting and spreading MDROs using universal precautions and proper decontamination procedures
3. Provide knowledge and recommendations for the appropriate level of personal protective equipment for each provider based on the transmissibility of the infectious agent
4. Develop a treatment plan for those providers that have developed infections consistent with MDROs
5. Develop a patient and provider notification plan to communicate exposures that occur in the prehospital setting
6. Develop a tuberculosis screening plan that incorporates annual Purified Protein Derivative (PPD) testing, chest x-ray screening for positive PPDs, multi-drug treatment, and follow up for positive PPD testing or active disease
7. Appropriately and safely perform procedures necessary for patient and provider protection and treatment
8. Collaborate with public health agencies to report communicable disease cases and exposures to assure case follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
   1.3.11 Communicable Diseases
       1.3.11.3 Biologic agents of terrorism

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Independently recognize potential patients in the prehospital environment with signs and symptoms of suspected terrorism infectious agents (e.g., Hemorrhagic Fevers, Smallpox, Q Fever, Plague, Anthrax, Botulism, Tularemia, Ricin, Glanders, Brucellosis, Melioidosis, and other weaponizable agents)
2. Rapidly determine the need for isolation or quarantine of patients with signs and symptoms suspicious for exposure to biological agents of terrorism
3. Rapidly initiate isolation and quarantine procedures at the appropriate level for these patients using resources constrained by the prehospital environment
4. Provide knowledge and recommendations for the appropriate level of personal protective equipment for each provider based on the transmissibility of the infectious agent
5. Proficiently use various levels of personal protective equipment used in EMS
6. Formulate and execute a post-exposure prophylaxis plan in the prehospital setting
7. Enact a plan that incorporates prehospital providers in a mass immunization and post-exposure prophylaxis programs for the public
8. Appropriately and safely perform procedures necessary for patient isolation, quarantine, and treatment
9. Collaborate with public health, law enforcement, and emergency management agencies to report suspected exposures and assure case follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
   1.3.11 Communicable Diseases
   1.3.11.4 Pandemic viral issues

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Independently recognize patients in the prehospital environment with signs and symptoms concerning for suspected dangerous viral agents (e.g., Pandemic Influenza, SARS)
2. Rapidly determine the need for isolation or quarantine of patients with signs and symptoms concerning for suspected dangerous viral agents using resources
3. Rapidly initiate isolation and quarantine procedures at the appropriate level for these patients using resources constrained by the prehospital environment
4. Provide knowledge and recommendations for the appropriate level of personal protective equipment for each provider based on the transmissibility of the infectious agent
5. Formulate and execute a post-exposure prophylaxis plan in the prehospital setting
6. Enact a plan that incorporates prehospital providers in a mass immunization and post-exposure prophylaxis programs for the public
7. Develop proficiency with various levels of personal protective equipment used in EMS
8. Appropriately and safely perform procedures necessary for patient isolation, quarantine, and treatment
9. Collaborate with public health and emergency management agencies to report dangerous infectious agents and assure case follow-up

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies  
1.3.11 Communicable Diseases  
1.3.11.5 Quarantine

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize patients in the prehospital environment with signs and symptoms concerning for suspected dangerous infectious agents.
2. Rapidly determine the need for isolation or quarantine of patients with signs and symptoms concerning for suspected dangerous infectious agents.
3. Rapidly initiate isolation or quarantine procedures at the appropriate level for these patients using resources constrained by the prehospital environment.
4. Provide knowledge and recommendations for the appropriate level of personal protective equipment for each provider based on the transmissibility of the infectious agent.
5. Collaborate with public health and emergency management agencies to report dangerous infectious agents and assure case follow-up.

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor.
2. Structured patient simulations.
3. 360° feedback from faculty, allied health personnel, and the patient.
4. Retrospective chart review.
1.3 Medical Emergencies
  1.3.11 Communicable Diseases
  1.3.11.6 Universal Precautions

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Demonstrate the understanding that infection control measures (policies and procedures) as well as use of Universal Precautions are essential aspects of practice in the prehospital setting
2. Provide knowledge and recommendations for the appropriate level of personal protective equipment based on the transmissibility of the infectious agent (contact vs. droplet vs. airborne precautions)
3. Develop proficiency with various levels of personal protective equipment used in EMS
4. Appropriately and safely perform procedures necessary for donning and doffing personal protective equipment

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
  1.3.11 Communicable Diseases
  1.3.11.7 Needle Stick

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify operations that impart risk for body fluid exposures and needle stick injuries
2. Develop and implement a plan to minimize or prevent body fluid exposures and needle stick injuries (i.e., needless intravenous systems, intranasal medications)
3. Provide knowledge and recommendations for use of active and passive infection control practices as well as the appropriate level of personal protective equipment based on the transmissibility of infectious agents in body fluids
4. Develop occupational health recommendations for preventive vaccines and/or immunizations to protect the prehospital workforce from commonly encountered exposures (hepatitis, tetanus, measles, etc.)
5. Develop occupational health recommendations and resources for post exposure prophylaxis and counseling for body fluid exposures and needle stick injuries in the prehospital environment
6. Collaborate with public health agencies, infection control personnel, and occupational medicine providers to report needle stick exposures to assure post exposure prophylaxis and surveillance of the source patient

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.11 Communicable Diseases
1.3.11.8 Post-Exposure Prophylaxis

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Rapidly identify the need for prehospital provider post-exposure prophylaxis when exposed to a suspected dangerous infectious agent using resources constrained by the prehospital environment
2. Develop an employee exposure counseling and post-exposure prophylaxis program for the prehospital providers that includes national guideline treatment for infectious agents (e.g., HIV, Hepatitis)
3. Develop a relationship between the prehospital setting and the in-hospital setting for rapid testing of source patients and exposed personnel
4. Develop a program between the prehospital and in-hospital setting to address difficulties in obtaining source patient testing, including patient refusal or unavailability
5. Develop a relationship between the prehospital setting and the in-hospital setting to initiate post-exposure prophylaxis

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.3 Medical Emergencies
1.3.12 Behavioral Emergencies

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Rapidly develop a differential diagnosis for the patient with a behavioral health emergency
2. Provide care while ensuring the safety of the patient and the responding providers
3. Recognize emergencies related to substance abuse (e.g., alcohol, cocaine, methamphetamine, heroin)
4. Proficiently manage patients with substance abuse emergencies
5. Recognize emergencies related to psychiatric emergencies (e.g., bipolar disorder, schizophrenia, dissociative states)
6. Proficiently manage patients with psychiatric emergencies
7. Proficiently manage patients with suicidal ideation and suicide attempts
8. Apply a working knowledge of control techniques for the prehospital combative patient including but not limited to calming techniques, physical restraint, and chemical restraint
9. Understand the applicable legislation governing involuntary detention in the setting of a behavioral emergency
10. Safely and efficiently restrain (both chemically and/or physically) a patient to assure the safety of the patient and EMS personnel
11. Appropriately and safely perform procedures necessary for patient stabilization and treatment
12. Collaborate with community mental health professionals

Evaluation and Assessment Methods:

1. Direct observation of procedural skills during performance of procedures in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.1 Airway Management in adverse conditions

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Anticipate and rapidly assess the need for airway management within the limitations of the prehospital environment
2. Formulate and execute a field treatment plan for patients requiring airway management in adverse circumstances including but not limited to:
   a. night/low-light conditions
   b. atypical patient positioning
   c. absence of standard equipment
   d. within a confined space
   e. limited patient access
3. Predict a difficult airway under adverse conditions and formulate a backup treatment plan to deal with the failed airway
4. Utilize unconventional methods to obtain airway maintenance under adverse conditions

Evaluation and Assessment Methods:

1. Direct observation of acute airway management in adverse conditions in the prehospital setting by program director or faculty supervisor
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, and the patient
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.1 Airway

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the indications and contraindications for airway management procedures in the prehospital setting
2. Determine the unique patient characteristics which impact airway management in the prehospital setting (non-fasted, altered/diminished mental status, medical co-morbidities, body habitus, etc.)
3. Determine the unique situational characteristics which impact airway management in the prehospital setting (trauma, limited/delayed access, contaminated environment, no/low light conditions, limitations of equipment/space, etc.)
4. Proficiently use monitoring and evaluation devices (such as pulse oximetry and capnography) in the care of prehospital patients
5. Select the appropriate management technique for acute airway emergencies in the prehospital setting
6. Perform prehospital airway management using the head-tilt, chin-lift maneuver
7. Perform prehospital airway management using the jaw thrust maneuver
8. Perform prehospital airway management using oro- and nasopharyngeal airway devices
9. Perform prehospital airway management using a bag-valve-mask
10. Perform prehospital airway management using continuous positive airway pressure (CPAP) and Bi-level positive airway pressure (BiPAP) devices
11. Perform prehospital airway management using supraglottic devices (LMA, dual lumen devices, etc.)
12. Perform prehospital airway management using direct laryngoscopy and endotracheal intubation
13. Perform prehospital airway management using bougie device
14. Perform prehospital airway management using digital technique
15. Perform prehospital airway management using nasotracheal intubation
16. Perform prehospital airway management using cricothyrotomy
17. Facilitate prehospital airway management using sedative and/or paralytic pharmacologic agents
18. Demonstrate proficiency in the use of transport ventilators
19. Manage post-tonsillectomy bleeding within the constraint of the prehospital environment

Evaluation and Assessment Methods:

1. Direct observation of prehospital airway procedural skills by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.2 Cardiovascular

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the indications and contraindications for cardiovascular management procedures in the prehospital setting
2. Select the appropriate management technique for the care of a patient with an acute cardiac emergency in the prehospital setting
3. Perform prehospital placement of peripheral intravenous catheters
4. Perform prehospital placement of central venous catheters
5. Perform prehospital placement of intra-osseous needle catheters for both adult and pediatric patients
6. Perform prehospital pericardiocentesis
7. Perform prehospital transcutaneous cardiac pacing
8. Perform prehospital defibrillation
9. Perform prehospital synchronized cardioversion
10. Perform prehospital cardiac ultrasound
11. Demonstrate proficiency in the use of mechanical cardiopulmonary resuscitation devices in the prehospital setting
12. Appropriately administer thrombolytic medications in the prehospital patient with ST-segment elevation myocardial infarction
13. Consider the possible management options for a patient with acute ST elevation myocardial infarction including administration of thrombolytic medication, transport directly to a percutaneous coronary intervention (PCI) capable hospital, or helicopter activation for rapid transport to a more distant facility

Evaluation and Assessment Methods:

1. Direct observation of acute cardiovascular procedures in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.3 Trauma
1.4.2.3.1 Needle Thoracostomy

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to acute thoracic injuries
2. Identify the physical examination findings for identification of acute thoracic injuries in the field
3. Specify which acute thoracic injuries require prehospital needle thoracostomy
4. Describe the risks and benefits of needle thoracostomy in the prehospital environment
5. Specify the equipment and supplies to facilitate field needle thoracostomy
6. Describe alternative equipment and supplies for use in austere or resource constrained environments
7. Perform needle thoracostomy in the patient with acute thoracic injury in the prehospital environment
8. Describe post-procedure monitoring and management of the patient with needle thoracostomy in the prehospital environment
9. Justify the role of limited prehospital ultrasound in the assessment of the patient with pneumothorax and its effect on performing a needle thoracostomy
10. Coordinate definitive care for the patient requiring field needle thoracostomy

Evaluation and Assessment Methods:

1. Direct observation acute needle thoracostomy in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
   1.4.2 Procedures
   1.4.2.3 Trauma
   1.4.2.3.2 Tube Thoracostomy

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to acute thoracic injuries
2. Identify the physical examination findings for acute thoracic injuries in the prehospital setting
3. Specify which acute thoracic injuries require tube thoracostomy
4. Describe the risks and benefits of tube thoracostomy in the prehospital environment
5. Specify the equipment, supplies, and pharmacologic agents to facilitate field tube thoracostomy
6. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
7. Perform tube thoracostomy in the patient with acute thoracic injury in the prehospital environment
8. Describe post-procedure monitoring and management of the patient with tube thoracostomy in the prehospital environment
9. Justify the role of limited prehospital ultrasound in the assessment of the patient with pneumothorax and its effect on performing a tube thoracostomy
10. Coordinate definitive care for the patient requiring field tube thoracostomy

Evaluation and Assessment Methods:

1. Direct observation acute tube thoracostomy in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.3 Trauma
1.4.2.3.3 Pericardiocentesis with and/or without ultrasound guidance or other guidance device

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanism of illness or injury which may lead to pericardiocentesis
2. Identify the physical examination findings which indicate the need for prehospital pericardiocentesis
3. Specify which ill or injured patients require emergency pericardiocentesis
4. Describe the risks and benefits of emergency pericardiocentesis in the prehospital environment
5. Specify the equipment, supplies, and pharmacologic agents for emergency pericardiocentesis
6. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
7. Perform emergency pericardiocentesis with and/or without ultrasound or other guidance device in the prehospital environment
8. Describe post-procedure monitoring and management of the patient requiring emergency pericardiocentesis with and/or without ultrasound guidance or other guidance device
9. Coordinate definitive care for the patient requiring emergency pericardiocentesis

Evaluation and Assessment Methods:

1. Direct observation of acute pericardiocentesis without the use of guidance devices in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.3 Trauma
1.4.2.3.4 Control of Life Threatening Hemorrhage

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury and physical examination findings for acute hemorrhage
2. Identify the physical examination findings for acute hemorrhage
3. Specify the acute injuries which require control of life threatening hemorrhage in the prehospital environment
4. Describe techniques to control life threatening hemorrhage in the prehospital setting
5. Describe the risks and benefits of hemorrhage control in the prehospital environment
6. Specify the equipment, supplies, and pharmacologic agents to facilitate hemorrhage control
7. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
8. Perform hemorrhage control techniques (e.g. patient positioning, digital pressure points, direct wound pressure, tourniquets, topical hemostatic agents) in the prehospital environment
9. Describe the monitoring and management of the patient requiring hemorrhage control in the prehospital environment
10. Coordinate definitive care for the patient with life threatening hemorrhage

Evaluation and Assessment Methods:

1. Direct observation of acute hemorrhage control in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.3 Trauma
1.4.2.3.5 Application of Traction Devices/Splints

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to acute skeletal injuries
2. Identify the physical examination findings for acute skeletal injuries
3. Specify which acute skeletal injuries require emergent application of traction and/or splinting devices in the prehospital setting
4. Describe the risks and benefits of traction and splinting devices in the prehospital environment
5. Specify the equipment, supplies, and pharmacologic agents to facilitate the application of traction and splinting devices
6. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource constrained environments
7. Apply traction and splinting devices in the patient with acute skeletal injury in the prehospital environment (e.g., improvised splint, ladder splint, air/pneumatic splint, hare traction splint, Thomas half-ring traction device, pelvic binder)
8. Describe post-procedure monitoring and management of the patient with traction and splinting devices in the prehospital environment
9. Coordinate definitive care for the patient with acute skeletal injury requiring traction and splinting devices

Evaluation and Assessment Methods:

1. Direct observation of traction/splinting in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.3 Trauma
1.4.2.3.6 Wound Care Management

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to acute wounds
2. Identify the physical examination findings for acute wounds
3. Specify the wound types encountered in the prehospital environment
4. Describe wound management techniques in the prehospital environment
5. Describe the risks and benefits of wound care management in the prehospital environment
6. Specify the equipment, supplies, and pharmacologic agents to facilitate wound care management
7. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
8. Perform wound care techniques in the prehospital environment
9. Describe the monitoring and management of wound care in the prehospital environment
10. Coordinate or provide definitive care for the patient with acute wounds

Evaluation and Assessment Methods:

1. Direct observation of acute wound management in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.2 Procedures

1.4.2.3 Trauma

1.4.2.3.7 Field Trauma Triage

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe situations which require the use of field trauma triage
2. Describe current field trauma triage systems used in various jurisdictions, identifying the benefits and limitations of each system
3. Determine the application of field trauma triage systems based upon the operational environment and response personnel
4. Describe the risks and benefits of field trauma triage in the prehospital environment
5. Specify the personnel, equipment, and supplies necessary to facilitate field trauma triage
6. Describe alternative personnel, equipment, and supplies for use in austere or resource constrained environments
7. Perform field trauma triage in the prehospital environment
8. Describe the monitoring and oversight of field trauma triage in the prehospital environment
9. Coordinate definitive care for patients who receive field trauma triage

Evaluation and Assessment Methods:

1. Direct observation of field trauma triage in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to acute spinal injuries
2. Identify the physical examination findings for acute spinal injuries in the prehospital setting
3. Specify acute spinal injuries which require application of spinal immobilization devices
4. Describe the risks and benefits of spinal immobilization devices in the prehospital environment
5. Specify the equipment and supplies to facilitate the application of spinal immobilization devices
6. Describe alternative equipment and supplies for use in austere or resource-constrained environments
7. Perform spinal immobilization (e.g. cervical collar, head blocks, long backboard, half back board, KED, improvised devices) in the patient with acute spinal injury in the prehospital environment
8. Describe post-procedure monitoring and management of the patient with spinal immobilization in the prehospital environment
9. Coordinate definitive care for the patient with spinal immobilization

Evaluation and Assessment Methods:

1. Direct observation of acute spinal immobilization in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to acute spinal injury
2. Identify the physical examination findings for acute spinal injury
3. Specify which trauma patients are candidates for selective spine immobilization
4. Describe the risks and benefits of selective spine immobilization in the prehospital environment
5. Specify the equipment and supplies to facilitate selective spine immobilization
6. Describe alternative equipment and supplies for use in austere or resource-constrained environments
7. Perform selective spinal immobilization in the prehospital environment
8. Describe monitoring and management of the patient with selective spine immobilization in the prehospital environment
9. Coordinate definitive care for the patient with selective spine immobilization

Evaluation and Assessment Methods:

1. Direct observation of selective spinal immobilization in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
   1.4.2 Procedures
   1.4.2.3 Trauma
   1.4.2.3.10 Controlled Hyperventilation for Management of Impending Brain Herniation in Head Trauma

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanisms of injury leading to traumatic brain injury
2. Identify the physical examination findings for traumatic brain injury in the prehospital setting
3. Specify which traumatic brain injury patients are candidates for controlled hyperventilation
4. Describe the risks and benefits of controlled hyperventilation for traumatic brain injury in the prehospital environment
5. Specify the equipment, supplies, and pharmacologic agents to facilitate controlled hyperventilation
6. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource constrained environments
7. Perform controlled hyperventilation in head injured patients in the prehospital environment
8. Describe monitoring and management of the patient with controlled hyperventilation in the prehospital environment
9. Coordinate definitive care for the head injured patient with controlled hyperventilation

**Evaluation and Assessment Methods:**

1. Direct observation of controlled hyperventilation of traumatic brain injury in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.4 Obstetrics
1.4.2.4.1 Normal delivery of a fetus

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the physical examination findings which indicate the need for vaginal delivery of a fetus
2. Specify which pregnant patients require prehospital vaginal delivery
3. Describe the risks and benefits of prehospital vaginal delivery
4. Recognize the inherent difficulties of prehospital vaginal delivery of a fetus including failure to progress, hemorrhage, hypothermia, hypoglycemia, aspiration and infection
5. Specify the equipment, supplies, and any pharmacologic agents for prehospital vaginal delivery
6. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
7. Perform prehospital vaginal delivery in the prehospital environment
8. Describe post-procedure monitoring and management of the patient and newborn after prehospital vaginal delivery
9. Coordinate definitive care for the patient and newborn after prehospital vaginal delivery

Evaluation and Assessment Methods:

1. Direct observation of vaginal delivery in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.2 Procedures

1.4.2.4 Obstetrics

1.4.2.4.2 Management of abnormal presentation of fetus

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize the signs and symptoms that indicate an abnormal presentation of a fetus including breech, shoulder dystocia, prolapsed cord, and hand or foot presentations
2. Specify which patients with abnormal presentation require emergent delivery in the prehospital setting, and which should be conservatively managed with and/or without ultrasound guidance or other guidance devices
3. Describe the risks and benefits of prehospital delivery of a fetus with an abnormal presentation with and/or without ultrasound guidance or other guidance device
4. Specify the equipment, supplies, and pharmacologic agents for prehospital delivery of a fetus with an abnormal presentation with and/or without ultrasound guidance or other guidance device
5. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
6. Be able to perform prehospital delivery of a fetus with an abnormal presentation with and/or without ultrasound guidance or other guidance device in the prehospital environment including breech, shoulder dystocia, meconium staining, prolapsed cord, and hand or foot presentations
7. Coordinate definitive care for the patient if prehospital delivery of a fetus with an abnormal presentation is not indicted with and/or without ultrasound guidance or other guidance device
8. Describe post-procedure monitoring and management of the patient and newborn after prehospital delivery of a fetus with an abnormal presentation with and/or without ultrasound guidance or other guidance device
9. Coordinate definitive care for the patient and newborn after prehospital delivery of a fetus with an abnormal presentation with and/or without ultrasound guidance or other guidance device

Evaluation and Assessment Methods:

1. Direct observation of complicated delivery in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
   1.4.2 Procedures
       1.4.2.4 Obstetrics
           1.4.2.4.3 Control of seizures in eclampsia

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanism of illness which may lead to eclampsia
2. Identify the physical examination findings which indicate impending seizure in eclampsia
3. Specify the equipment, supplies, and pharmacologic agents necessary for management of seizures in eclampsia
4. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
5. Perform seizure control techniques for eclamptic patients in the prehospital setting
6. Describe appropriate monitoring and management of the patient with seizures in eclampsia
7. Coordinate definitive care for the eclamptic patient with and/or without ultrasound guidance, advanced monitoring, or other guidance device

Evaluation and Assessment Methods:

1. Direct observation of seizure management in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, and receiving facility personnel
4. Retrospective chart review
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanism of illness or injury which may lead to post-partum hemorrhage
2. Identify the physical examination findings which indicate post-partum hemorrhage
3. Specify the equipment, supplies, and pharmacologic agents for management of post-partum hemorrhage in the prehospital environment
4. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
5. Be able to perform post-partum hemorrhage control with and/or without ultrasound guidance or other guidance device in the prehospital environment
6. Describe appropriate prehospital monitoring of the patient with post-partum hemorrhage with and/or without ultrasound guidance or other guidance device
7. Coordinate definitive care for the patient with post-partum hemorrhage with and/or without ultrasound guidance or other guidance device

Evaluation and Assessment Methods:

1. Direct observation of post-partum hemorrhage control in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
   1.4.2 Procedures
   1.4.2.4 Obstetrics
      1.4.2.4.5 Peri/post-mortem cesarean section

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the mechanism of illness or injury which may lead to peri/post-mortem cesarean section
2. Identify the physical examination findings which indicate the need for peri/post-mortem cesarean section in the prehospital environment
3. Specify which ill or injured patients require peri/post-mortem cesarean section with and/or without ultrasound guidance or other guidance devices in the prehospital setting
4. Describe the risks and benefits of field peri/post-mortem cesarean section with and/or without ultrasound guidance or other guidance device
5. Specify the equipment, supplies, and pharmacologic agents for peri/post-mortem cesarean section with and/or without ultrasound guidance or other guidance device
6. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource constrained environments
7. Be able to perform peri/post-mortem cesarean section with and/or without ultrasound guidance or other guidance device in the prehospital environment
8. Describe post-procedure monitoring and management of the patient and newborn after peri/post-mortem cesarean section as indicated
9. Coordinate definitive care for the patient and newborn after peri/post-mortem cesarean section as indicated

Evaluation and Assessment Methods:

1. Direct observation of peri/post-mortem cesarean section in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.5 HAZMAT
1.4.2.5.1 Decontamination

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the circumstances and incidents that require personal protective equipment
2. Identify the circumstances and events that mandate patient and patient care provider decontamination
3. Specify which exposed patients require field decontamination
4. Describe the risks and benefits of field decontamination
5. Specify the equipment, supplies, pharmacologic agents, and personnel required for field decontamination
6. Describe alternative equipment, supplies, pharmacologic agents, and personnel for use in austere or resource-constrained environments
7. Perform decontamination in the prehospital environment (e.g. hasty, technical, dry, wet)
8. Describe post-decontamination monitoring and management of the patient and personnel
9. Coordinate definitive care for the decontaminated patient
10. Collaborate with hazardous materials experts and decontamination teams to improve patient access to definitive care

Evaluation and Assessment Methods:

1. Direct observation of decontamination procedures in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, hazardous materials, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.5 HAZMAT
1.4.2.5.2 Resuscitation during decontamination

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the circumstances and incidents that require personal protective equipment
2. Specify which ill or injured patients require resuscitation during field decontamination
3. Describe the risks and benefits of resuscitation during field decontamination
4. Specify the equipment and supplies required for resuscitation during field decontamination
5. Describe alternative equipment, supplies, and pharmacologic agents for use in austere or resource-constrained environments
6. Perform resuscitation during decontamination in the prehospital environment
7. Describe post-decontamination monitoring and management of the resuscitated patient
8. Coordinate definitive care for the decontaminated resuscitated patient
9. Collaborate with hazardous materials experts and decontamination teams

Evaluation and Assessment Methods:

1. Direct observation of resuscitation during field decontamination in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health, hazardous materials, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.5 HAZMAT
1.4.2.5.3 Ethical dilemmas in HAZMAT situations

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify the ethical dilemmas inherent in a HAZMAT situation
2. Recognize the safety priority of prehospital providers in a HAZMAT situation
3. Specify the situations and scenarios in which providers must delay patient contact until HAZMAT infrastructure has been established
4. Outline the ethical factors to be considered in making triage and patient disposition decisions for patients suffering from nerve agent, chemical agent, vesicant, cyanide, pulmonary agent and riot control exposure
5. Compare and contrast the ethical impact of providing emergency medical care in the warm zone and itemize decisions about which interventions should be initiated in the warm zone
6. List some of the important medical conditions falling into the immediate, delayed, minimal and expectant categories and their ethical impact on the HAZMAT incident
7. Apply the principles of disaster triage during a HAZMAT incident

Evaluation and Assessment Methods:

1. Direct observation of ethical decision-making in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, ethicists, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.2 Procedures
1.4.2.6 Tactical Medicine

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Develop and provide medical support for law enforcement operations (e.g., wellness programs, workforce hardening, surveillance, intelligence gathering, tactical missions)
2. Collaborate with law enforcement officials and tactical teams
3. Identify important elements of the scene size-up associated with the tactical engagement
4. Be able to perform acute medical stabilization for law enforcement officers, bystanders, victims, and perpetrators under austere and unsafe conditions (e.g., during gunfire, utilizing existing concealment/cover)
5. Be able to perform airway interventions including the performance of cricothyrotomy and utilization of supraglottic devices in a hostile environment
6. Utilize hemorrhage control techniques (e.g., positioning, pressure points, direct pressure, tourniquets, hemostatic agents) under austere and unsafe conditions
7. Administer resuscitative fluids (e.g., colloids, crystalloids, hemoglobin-like agents) under austere and unsafe conditions
8. Perform casualty extraction safely and effectively
9. Apply the role of the ongoing assessment, oxygen therapy, continued intravenous fluid therapy and patient monitoring to casualty evacuation
10. Define the care associated with conventional casualties including general trauma care, projectile injury care, fluid resuscitation, pleural decompression, blast injury care, pain medication and antibiotic therapy
11. Describe the principles of triage and apply them to the tactical setting
12. Describe medical threat assessment and list major medical threats in the tactical setting
13. Summarize the difficulties of performing rapid sequence intubation in the tactical setting

Evaluation and Assessment Methods:

1. Direct observation of tactical medical support by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, law enforcement officials and tactical teams, and receiving facility personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
   1.4.2 Procedures
   1.4.2.7 Airline/Cruise Ship Medicine

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Develop and provide medical support for airline and marine operations (e.g., wellness programs, workforce hardening, surveillance, intelligence gathering, crew or passenger illness/injury)
2. Assess and manage acutely ill or injured crew/passengers aboard a stable or unstable craft
3. Recognize the inherent hazards, limitations, and unique aspects of medical care in the aviation and marine environments
4. Perform the following procedures aboard an aircraft or watercraft:
   a. Airway management including bag valve mask, endotracheal intubation, suction and various oxygen delivery devices
   b. Intravenous access and IV therapy
   c. Ongoing cardiac monitoring
   d. External cardiac pacing
   e. Immobilization devices and equipment
   f. Limited diagnostic point-of-care testing
   g. Cardiopulmonary resuscitation including advanced cardiac life support and defibrillation
   h. Minor surgical skills (i.e., suturing, incision and drainage of abscesses, etc…)
   i. Apply spinal motion restriction devices
   j. Administration of thrombolytics
5. Demonstrate the forensic and diagnostic utility of a sexual assault evidence collection kit aboard a watercraft
6. Communicate effectively with responding providers (medical helicopters, Coast Guard, Federal Aviation Authority, Military)
7. Establish a health, hygiene and safety program for medical personnel as well as passengers
8. Collaborate with aviation and marine agencies, vendors, and teams to ensure quality prehospital medical care

**Evaluation and Assessment Methods:**

1. Direct observation of medical support for aviation and maritime operations by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, aviation/marine agencies, receiving facilities
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.2 Procedures

1.4.2.8 Wilderness EMS

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Participate effectively in wilderness settings with a minimum of equipment and resources
2. Collaborate with wilderness teams and experts (e.g., US Department of Interior Forestry Service, Ski Patrol)
3. Provide acute medical assessment and stabilization in harsh environments such as extremes of weather or terrain
4. Perform the following procedures in a wilderness environment
   a. Airway management including bag valve mask, endotracheal intubation, suction and various oxygen delivery devices
   b. Intravenous access and IV therapy
   c. Immobilization devices and equipment
   d. Cardiopulmonary resuscitation including advanced cardiac life support and automated defibrillation
   e. Minor surgical skills (i.e., suturing, incision and drainage of abscesses, etc…)
   f. Reduction of fractures and/or dislocations in the absence of radiographic or sonographic devices
   g. Apply spinal motion restriction devices
5. Perform evacuation and rescue of patients from harsh environments
6. Assess the potential futility of resuscitative efforts in a wilderness setting and when it is appropriate to terminate resuscitation
7. Selectively apply spinal immobilization to patients with spinal injuries; recognizing the personnel and equipment required to perform this skill
8. Perform Foley catheter insertion for management of spinal trauma in the wilderness setting

Evaluation and Assessment Methods:

1. Direct observation wilderness medical support by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, wilderness experts/teams, receiving facilities
4. Retrospective chart review
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Respond and work effectively within the incident management structure during a disaster or critical event
2. Apply the principles of disaster triage
3. Assess and manage acutely ill or injured patients during a disaster or critical event
4. Recognize the hazards, limitations, and unique aspects of medical care during disasters or critical events
5. Communicate effectively and coordinate multi-disciplinary efforts with responding providers and agencies (e.g., Military, Federal agencies, other EMS personnel)
6. Collaborate with law enforcement officials, emergency managers, disaster response teams, and public health agencies

Evaluation and Assessment Methods:

1. Direct observation of medical support for disasters or critical events in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.3 Conscious Sedation

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Effectively weigh the risk and benefits of performing prehospital conscious sedation
2. Identify patients appropriate for prehospital conscious sedation to perform painful procedures
3. Utilize appropriate equipment, monitoring, and pharmacological agents to perform prehospital conscious sedation
4. Monitor and manage patient airways during prehospital conscious sedation
5. Administer agents for prehospital conscious sedation
6. Collaborate with other medical professionals during the administration of prehospital conscious sedation

Evaluation and Assessment Methods:

1. Direct observation of conscious sedation in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
  1.4.4 Flight Physiology
  1.4.4.1 Effect of Altitude on Patient Management

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe the altitude-related laws (e.g., Boyle’s Law, Dalton’s Henry’s Law, and Charles’ Law) which impact patient management during air medical operations
2. Describe the stresses of flight (e.g., hypoxia, barometric pressure, noise, vibration, thermal conditions, gravitational forces, humidification, third spacing, fatigue)
3. Determine the effect of altitude and stress on equipment, supplies, and pharmacologic agents utilized in air medical operations
4. Determine which patient illnesses require altitude considerations
5. Understand the effects of trapped gases in the body at increasing altitude
6. Describe altitude-related issues which impact patient management during air medical operations
7. Describe the physiological stresses of altitude which impact patient management during air medical operations
8. Perform patient management in the air medical environment

Evaluation and Assessment Methods:

1. Direct observation of patient assessment and management in the aviation environment by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
1.4.4 Flight Physiology
1.4.4.2 Effect of Altitude on Healthcare Provider

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe the altitude-related laws (e.g., Boyle’s Law, Dalton’s Henry’s Law, Charles’ Law) which impact the healthcare provider during air medical operations
2. Describe the stresses of flight (e.g., hypoxia, barometric pressure, noise, vibration, thermal conditions, gravitational forces, humidification, third spacing, fatigue) which impact the healthcare provider during air medical operations
3. Explain the effects of altitude hypoxia on deconditioned providers
4. Relate the delayed onset of decompression sickness
5. Explain complications of pre-existing medical conditions due to altitude
6. Develop methods to detect and eliminate the physical and physiologic aspects of altitude and stress of flight
7. Assess and prevent the effects of altitude and flight stress in the air medical provider

Evaluation and Assessment Methods:

1. Direct observation of assessment and prevention of altitude and stress impacts on the air medical workforce by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, air medical agency, occupational medicine physicians
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.5 Patient restraint – physical versus chemical

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Effectively weigh the risk and benefits of physically or chemically restraining a prehospital patient
2. Proficiently employ calming techniques (e.g., verbal, nonverbal, negotiation, empowerment) to defuse situations
3. Identify prehospital patients requiring restraint (e.g., physical, chemical)
4. Utilize appropriate equipment, personnel, and monitoring to perform prehospital physical restraint
5. Utilize appropriate equipment, personnel, monitoring, and pharmacological agents to perform prehospital chemical restraint
6. Collaborate with other professionals such as law enforcement, psychiatry/psychology to safely and effectively restrain a prehospital patient

Evaluation and Assessment Methods:

1. Direct observation of physical and chemical restraint in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.6 Age appropriate issues

1.4.6.1 Pediatrics

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize the specialized care required by pediatric patients
2. Effectively manage the airway of a pediatric patient in the field recognizing the controversies associated with the intubation of pediatric patients in the field
3. Utilize specialized equipment in the care of pediatric patient in the field (such as isolettes, umbilical vascular monitoring)
4. Understand the issues of consent of a minor for treatment in the field
5. Recognize an Apparent Life-Threatening Event (ALTE) and effectively monitor and manage a child with such an event
6. Recognize injury patterns and/or physical findings consistent with abuse/neglect and assure appropriate acute care and reporting to protective services
7. Utilize appropriate equipment, personnel, monitoring and pharmacological agents to care for pediatric patients with respiratory distress in the field
8. Utilize appropriate equipment, personnel, monitoring and pharmacological agents to care for pediatric patients with seizure in the field
9. Recognize seizure mimics in pediatric patients
10. Collaborate with parents, guardians, and other personnel such as teachers to safely and effectively care for a pediatric patient

Evaluation and Assessment Methods:

1. Direct observation of pediatric care in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.6 Age appropriate issues

1.4.6.2 Geriatrics

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize the specialized care required by geriatric patients
2. Recognize injury patterns and/or physical findings consistent with abuse/neglect and assure appropriate acute care and case reporting to protective services
3. Understand the physiologic parameters of geriatric patients and their impact on prehospital management
4. Utilize appropriate equipment, personnel, monitoring and pharmacological agents to care for geriatric patients in the field
5. Explain the approach to immobilization in the geriatric patient
6. Recognize the potential for polypharmacy in the geriatric population
7. Summarize the role of co-morbid conditions in the geriatric patient and their impact on prehospital emergency medicine
8. Collaborate with social services, assisted living personnel, nursing home personnel, hospice personnel, and family members to safely and effectively care for a geriatric patient

Evaluation and Assessment Methods:

1. Direct observation of geriatric care in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations
   1.4.7 Bariatric Issues

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Recognize the specialized care required by bariatric patients
2. Effectively manage the airway of a bariatric patient in the field recognizing the inherent difficulties associated with intubation in the field
3. Utilize specialized equipment in the care of bariatric patient in the field (such as hydraulic stretchers and specialized ambulances)
4. Understand the role of co-morbid conditions with obesity and their impact on prehospital emergency medicine
5. Identify technical difficulties of extrication of the bariatric patient
6. Utilize proper body mechanics when utilizing extrication techniques in the rescue and treatment of the bariatric patient
7. Predict the technical difficulties in resuscitation of the bariatric patient and develop a method to minimize these inherent difficulties
8. Collaborate with other professionals to safely and effectively care for a bariatric patient

Evaluation and Assessment Methods:

1. Direct observation of bariatric patient care in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.4 Special Clinical Considerations

1.4.8 End-of-Life Issues

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Collaborate with primary care physicians, hospice personnel and visiting nurse agencies to provide compassionate and appropriate care at the end of a patient’s life
2. Discuss the ethics of
   a. Do Not Resuscitate (DNR) orders
   b. Do Not Intubate (DNI) orders
   c. Advanced directives
   d. Physician Orders for Life-Sustaining Treatment (POLST)
   e. Medical Orders for Life-sustaining Treatment (MOST)
3. Develop an understanding of end-of-life choices in providing care to patients in the field
4. Explain the importance of prehospital advanced directives
5. Interact compassionately and knowledgeably with families of the dying patient
6. Provide compassionate care for family and friends of the dying patient

Evaluation and Assessment Methods:

1. Direct observation end of life care in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Coordinate care of the patient with families, friends, and loved ones
2. Recognize the need to manage bystanders while caring for patients
3. Assess and comprehend the effects of prehospital medical care on various demographics of patients
4. Work with patients, community advocates, and public and private officials to adapt medical policies to promote patient-centered quality medical care for all groups
5. Appreciate isolation syndrome and recognize this syndrome in the field
6. Educate emergency medical providers in issues of cross-cultural awareness
7. Serve as a patient advocate in the medical system and at the public level

Evaluation and Assessment Methods:

1. Direct observation of social interactions by program director or faculty
2. Performance in oral and written discussions
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
1.5 Special Clinical Considerations
1.4.10 Termination of Resuscitation

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Apply an evidence based knowledge of termination of resuscitation guidelines
2. Recognize patients appropriate for prehospital termination of resuscitation
3. Consider indications and contraindications to prehospital termination of resuscitation
4. Discuss the death of a patient with family and loved ones
5. Identify patients who require evaluation by the medical examiner
6. Decide who must complete the death certificate and ensure completion of all state-mandated procedures for certification
7. Provide compassionate care to families, loved ones, and friends in the setting of a futile resuscitation

Evaluation and Assessment Methods:

1. Direct observation of termination of futile resuscitative efforts in the prehospital setting by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review
2.0 Medical Oversight of EMS

The following are goals that are broadly applicable to medical oversight of EMS systems and as such are delineated here rather than within the body of each heading or subheading.

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Provide contemporaneous, direct medical oversight of on-scene emergency medical providers
2. Provide indirect medical oversight of emergency medical providers
3. Understand and apply evidence-based medical care when designing policies and protocols for prehospital providers
4. Develop and implement quality assurance and quality improvement systems to enhance the care of patients and promote patient safety in the prehospital setting
5. Utilize the latest evidence-based guidelines to develop appropriate patient transport and destination policies for an EMS system
6. Collaborate with EMS legal counsel and law enforcement agencies to develop policies and procedures pertinent to the legal issues of prehospital care
7. Specify the planning method to provide emergency services to a community
8. Discuss the need for standardization of quality management and education in an EMS system
9. Discuss the effect of declining reimbursements on EMS systems
10. Define the role of government in EMS systems
11. Discuss incident management and command of EMS systems
12. Discuss how EMS systems address issues of quality of care
2.1 Medical Oversight
  2.1.1 Medical Oversight of EMS Systems
  2.1.1.1 Direct Medical Oversight

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Provide contemporaneous, direct medical oversight of on-scene emergency medical providers by assessing patients remotely using audio or video communications
2. Provide direct medical oversight of emergency medical providers while on-scene and during transport of the acutely ill or injured patient
3. Coordinate with on-scene emergency medical providers to develop and execute a contemporaneous patient management plan
4. Provide direct prehospital patient care
5. Provide real-time collaboration with law enforcement, bystander healthcare providers, family members, and receiving facilities to establish an environment which optimizes safe and effective medical care by prehospital care providers

Evaluation and Assessment Methods:

1. Direct observation of contemporaneous, direct medical oversight skills while on-scene and during transport of patients by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty and allied health personnel
2.1 Medical Oversight
   2.1.1 Medical oversight of EMS systems
   2.1.1.2 Indirect Medical Oversight

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Provide retrospective and prospective indirect medical oversight of emergency medical personnel caring for the acutely ill or injured patient
2. Understand and apply evidence-based medical care to design organizational policies and treatment protocols for the care of patients in the prehospital environment
3. Develop and implement quality assurance and quality improvement systems to optimize the care of patients in the prehospital setting
4. Utilize the latest evidence-based guidelines to develop appropriate patient transport and destination policies for an EMS system
5. Collaborate with government leaders and executives to create, modify, and oversee system design of emergency medical services
6. Develop evidence-based guidelines for patient refusal policies and procedures
7. Provide initial and recurrent education to EMS personnel regarding the cognitive, psychomotor, and affective aspects of prehospital emergency care
8. Provide directed feedback to providers regarding their patient assessment and medical care skills

Evaluation and Assessment Methods:

1. Direct observation of prospective and retrospective indirect medical oversight skills for the care of acutely ill and injured patients by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, receiving facility personnel
4. Review of policies and protocols by program director or faculty
2.1 Medical Oversight

2.1.2 Legal Issues in EMS

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Determine when an individual becomes a patient of the EMS system
2. Understand and apply evidence-based guidelines for appropriate termination of resuscitation/care and pronouncement of death in the field
3. Understand and apply the difference between medical capacity and legal competency
4. Assess adult patients for the capacity to make informed medical decisions
5. Understand and apply the criteria necessary for informed consent of an adult patient in the prehospital setting
6. Understand and apply the criteria necessary for informed refusal of care by an adult patient in the prehospital setting
7. Understand and apply the criteria regarding the medical treatment and transportation of minor children in the absence of an adult with legal standing
8. Understand and apply the criteria regarding the medical treatment and transportation of emancipated minor children
9. Understand the legal requirements regarding the reporting of neglect, abuse, and endangerment of at-risk populations (e.g., minors, disabled, special needs people, geriatrics)
10. Collaborate with EMS legal counsel and law enforcement agencies to develop policies and procedures pertinent to the legal issues of prehospital care

Evaluation and Assessment Methods:

1. Direct observation of legal decision-making skills while on-scene and during transportation of patients by program director or faculty
2. Structured patient simulations
3. 360° feedback from faculty, allied health personnel, EMS legal counsel, receiving facility personnel
2.2 EMS Systems

2.2.1 Communications

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Complete a certification course for 9-1-1 telecommunicators
2. Describe the federal laws which regulate emergency communications
3. Describe the use of enhanced 911 systems to provide expedited access to emergency services
4. Discuss how effective communication impacts the quality of prehospital emergency medicine
5. Perform the following communications functions:
   a. Emergency call-taking
   b. Caller interrogation
   c. Administration of pre-arrival instructions
   d. Dispatch of EMS resources and support agencies (e.g., law enforcement, HAZMAT, utilities company)
   e. Quality assurance of communications center activities
   f. Establish an alternate site communications center in the event of a failure of the primary center (e.g., power outage, computer aided dispatch (CAD) failure)
6. Compare and contrast simplex and duplex radios
7. Outline the capabilities of VHF, UHF and 800 MHz frequencies
8. Understand the redundancies necessary to assure effective EMS communications (e.g., field radios, communications center generators, communications center CAD, alternative communications center locations)
9. Demonstrate competency in utilizing two-way radios for emergency communications
10. Explain how Automated Vehicle Locators (AVL)/Global Positioning Systems (GPS) -based tracking of units impacts allocation of resources

Evaluation and Assessment Methods:

1. Direct observation of EMS communications skills by fellowship director or faculty member
2. Performance on formal oral exam
3. Successful certification as an emergency medical dispatcher
4. 360° feedback from faculty, allied health personnel, 911 callers, patients and residents
5. Role-play or simulations
6. Quality assurance review of dispatch and pre-arrival instruction performance
2.2 EMS Systems
   2.2.2 Dispatch

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define emergency medical dispatcher
2. Describe the value of utilizing certified emergency medical dispatchers
3. List the advantages and disadvantages of a primary PSAP call transfer to a secondary PSAP
4. Describe the function and utility of pre-arrival instructions in emergency dispatch
5. Describe the function and utility of lights-and-siren response to life threatening emergencies
6. Outline the risks involved with lights-and-siren response
7. Discuss the concept of utilizing medical interrogation to prioritize the urgency and response personnel dispatched to a request for emergency services
8. Discuss how prioritization on response matches local needs with local resources
9. Outline sample pre-arrival instructions for cardiac arrest, emergency child birth, and seizures
10. Describe how response time criteria affect overall EMS system quality
11. Predict how historical call data affects EMS system status planning
12. Specify how unit hour utilization measures the efficiency of the EMS system
13. Define system status management
14. Compare and contrast static versus dynamic deployment in terms of utilization of resources
15. Discuss the use of fractile response time as it relates to the allocation of resources to improve EMS system quality
16. Summarize the use of emergency dispatch protocols
17. Discuss the concept of the 'first' first responder
18. List various EMS response metrics and discuss their potential impact on quality of care
19. Participate in quality assurance programs for EMS dispatch; to include system status management, call prioritization, pre-arrival instructions, and response times

Evaluation and Assessment Methods:

1. Direct observation of dispatch activities and medical oversight by fellowship director or faculty member
2. Successful certification as an emergency medical dispatcher
3. Performance on formal oral exam
4. 360° feedback from faculty, allied health personnel, 911 callers, and patients
5. Performance during role-play or simulations
2.2 EMS Systems

2.2.3 System Design

2.2.3.1 Fire Service

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of fire-based EMS services
2. Outline the funding source(s) for fire-based EMS services
3. Discuss the concepts and principles of utilizing one- and two-tiered configurations in fire-based EMS services
4. Discuss incident management and command of multiple casualty incidents by fire-based EMS services
5. Summarize the use of cross-trained/multi-role firefighters in medical emergencies
6. Discuss the concepts and principles of a “tiered” response; for example the use of the fire department for emergency response and a private or “third service” provider for patient transportation
7. Discuss how the fire service is equipped to simultaneously address the patient's medical needs, physical rescue, protection from the elements and the creation of a safe physical environment
8. Discuss the impact of the 1999 Fair Labor Standards Act on fire-based EMS services
9. Relate the financial impact of non-emergency transports on fire-based service revenue
10. Discuss the effect of declining reimbursements on fire-based EMS systems
11. Define the role of government in fire-based EMS systems
12. Discuss how fire-based EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance in a fire-based EMS system by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, fire service administrators, and elected officials
4. Performance during role-play or simulations
2.2 EMS Systems

2.2.3 System Design

2.2.3.2 Third Service

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of third service EMS systems
2. Outline the funding source(s) for third-service EMS systems
3. Discuss the concepts and principles of utilizing one- and two-tiered configurations in third-service EMS systems
4. Discuss the governance structure of the third service EMS agency and how it affects quality of patient care delivered
5. Discuss the financial concerns with a third service EMS system providing emergency services exclusive of non-emergency transports
6. Relate the financial impact of non-emergency transports on third service EMS system revenue
7. Discuss the effect of declining reimbursements on third service EMS system
8. Define the role of government in third service EMS system
9. Discuss incident management and command of third service EMS system
10. Discuss how third service EMS system address issues of quality of care

**Evaluation and Assessment Methods:**

1. Direct observation of administration, medical oversight and field performance in a third service EMS system by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, third service administrators, and elected officials
4. Performance during role-play or simulations
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of private sector EMS systems
2. Outline the funding source(s) for private sector EMS systems
3. Discuss the concepts and principles of utilizing one- and two-tiered configurations in private sector EMS systems
4. Synthesize the effect of multiple private sector ambulance services on the overall quality of emergency medical care
5. Relate the financial impact of non-emergency transports on private sector EMS system revenue
6. Discuss the effect of declining reimbursements on private sector EMS systems
7. Define the role of government in private sector EMS systems
8. Discuss incident management and command of private sector EMS systems
9. Discuss how private sector EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance in a private EMS service by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients and private EMS administrators, and taxpayers/shareholders
4. Performance during role-play or simulations
2.2 EMS Systems
2.2.3 System Design
2.2.3.4 Hospital-Based

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of hospital-based EMS services
2. Outline the funding source(s) for hospital-based EMS services
3. Discuss the concepts and principles of utilizing one- and two-tiered configurations in hospital-based EMS services
4. Relate the financial impact of non-emergency transports on hospital-based service revenue
5. Discuss the effect of declining reimbursements on hospital-based EMS systems
6. Define the role of government in hospital-based EMS systems
7. Discuss incident management and command of hospital-based EMS systems
8. Discuss how hospital-based EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight and field performance in a hospital-based EMS service by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, hospital-based EMS administrators, and hospital officials
4. Performance during role-play or simulations
2.2 EMS Systems

2.2.3 System Design

2.2.3.5 Law enforcement

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Outline the framework of a law enforcement based service model for provision of medical care
2. Define the role of the government oversight in the a law enforcement model
3. Discuss incident management and command of multiple casualty incidents by law enforcement-based services
4. Summarize the use of cross-trained/multi-role law enforcement officers in medical emergencies
5. Discuss the concepts and principles of incorporating law enforcement in a “tiered” response EMS model; for example use of law enforcement for first response and a private or “third service” provider for patient transportation
6. Collaborate with law enforcement and EMS agencies to develop joint response policies and procedures to assure scene safety for EMS personnel and medical back-up for law enforcement actions
7. Discuss the effect of declining reimbursements on law enforcement based EMS systems
8. Discuss how law enforcement based EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight and field performance in a law enforcement EMS service by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, law enforcement administrators, and elected officials
4. Performance during role-play or simulations
2.2 EMS Systems
   2.2.4 Urban EMS Systems

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define “urban” EMS system
2. In the urban setting, discuss the utilization, planning methods and impact of:
   a. EMS service model (e.g., fire-based, private, third service)
   b. EMS response mode (e.g., tiered, non-tiered)
   c. unions
   d. call volume
   e. request for non-emergency services
   f. disproportionate disease burden in specific socio-economic sectors/geographic locations
   g. emergency department overcrowding
   h. subspecialty care hospitals (e.g., trauma center, stroke center, PCI-capable, burn center)
3. Discuss the need for standardization of education and quality management in the urban EMS system
4. Relate the financial impact of non-emergency transports on urban EMS system revenue
5. Discuss the effect of declining reimbursements on urban EMS systems
6. Define the role of government in urban EMS systems
7. Discuss incident management and command of urban EMS systems
8. Discuss how urban EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance in an urban EMS system by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, receiving hospitals, EMS administrators, elected officials
4. Performance during role-play or simulations
2.2 EMS Systems

2.2.5 Rural EMS Systems

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define “rural” EMS system
2. Outline the funding source(s) for rural EMS services
3. Discuss the concepts and principles of utilizing one- and two-tiered configurations in rural EMS services
4. Discuss incident management and command of multiple casualty incidents by rural EMS services
5. Determine the challenges of rapid EMS response in a rural setting
6. Define the rural patient demographic served by the prehospital emergency physician
7. Relate the impact that the absence of enhanced 9-1-1 services may have on access to emergency medical services in the rural environment
8. Propose examples of public health initiatives which address public education from a rural perspective
9. Describe barriers to EMS access in a rural setting by the prehospital emergency physician
10. Compare and contrast the quality of EMS clinical care in the rural setting versus an urban setting
11. Discuss the need for standardization of education and quality management in the rural EMS system
12. Collaborate with rural EMS agencies, rural hospital ED personnel, EMS transport agencies, and tertiary care facilities to develop triage and transfer protocols to expedite optimal, time-sensitive medical care
13. Discuss the effect of declining reimbursements on rural EMS systems
14. Define the role of government in rural EMS systems
15. Discuss how rural EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance in a rural EMS service by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, EMS administrators, and primary/tertiary hospital personnel
4. Performance during role-play or simulations
2.2 EMS Systems
2.2.6 Wilderness EMS Systems

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define “search-and-rescue”
2. Define wilderness EMS
3. Identify concerns with delayed morbidity and mortality for patients in a wilderness setting (e.g., dehydration, hypothermia, starvation, compartment syndrome, deep venous thrombosis, renal failure, infection, sepsis)
4. Cite concerns with spinal motion restriction in an environment where standard EMS equipment may be absent or significantly delayed
5. Evaluate the complications of geographic remoteness, restricted logistics and severely limited access in the context of wilderness EMS systems
6. Illustrate the complications of significant delays in the delivery of care to the patient in a wilderness environment
7. Outline the effect of limited equipment and supplies on the delivery of care to the patient in a wilderness environment
8. Explain the effects of terrain, altitude, and weather on the delivery of emergency care in a wilderness environment
9. Describe the unique nuances to medical care in the wilderness environment (e.g., CPR, dislocations, wound care, open fractures, selective spinal immobilization)
10. Discuss the need for standardization of education and quality management in the wilderness EMS system
11. Collaborate with wilderness EMS agencies, EMS transport agencies, and tertiary care facilities to develop triage and transfer protocols to expedite optimal, time-sensitive medical care
12. Discuss methods to ensure continuity of care for the wilderness patient
13. Define the role of government in wilderness EMS
14. Discuss incident management and command of wilderness EMS
15. Discuss how wilderness EMS address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight and field performance in a wilderness EMS system by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, receiving facilities
4. Performance during role-play or simulations
2.2 EMS Systems
2.2.7 Volunteer

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define the volunteer EMS workforce and understand the unique demographics of emergency medical volunteers including:
   a. Age
   b. Number of providers
   c. Call volume
   d. Equipment, availability
   e. Geographic distribution
   f. Response models
   g. EMS education, initial and recurrent
   h. Funding sources
   i. Medical oversight models
2. Understand the psychology of volunteerism as it applies to prehospital providers
3. Formulate a needs assessment to retain and meet the needs of emergency medical volunteers
4. Discuss access to initial and continuing education for emergency medical volunteers
5. List provider attributes associated with excellent emergency medical volunteer services
6. Identify common challenges and propose solutions for emergency medical volunteer services
7. Discuss the effect of declining reimbursements on volunteer EMS systems
8. Define the role of government in volunteer EMS systems
9. Discuss incident management and command of volunteer EMS systems
10. Discuss how volunteer EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance in a volunteer EMS service by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, receiving facilities
4. Performance during role-play or simulations
2.2 EMS Systems

2.2.8 Inter-facility Transport

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Outline the funding source(s) for inter-facility transport services
2. Delineate the medical oversight required to ensure competency of an inter-facility transport team
3. Discuss the patient populations or clinical entities that may benefit most from inter-facility transport
4. Demonstrate a working knowledge of the expanded scope of procedures and monitoring required during inter-facility transport
5. Determine the optimal transport platform (e.g., ground ambulance, rotor craft, fixed wing, and watercraft) and medical crew configuration (e.g., physician-nurse, physician-paramedic, physician-respiratory therapist, nurse-nurse, nurse-paramedic, nurse-respiratory therapist and paramedic-respiratory therapist) for patients being transferred to definitive care facilities
6. Demonstrate expertise in the clinical care of patients during inter-facility transport
7. Discuss the effect of declining reimbursements on inter-facility transport service
8. Define the role of government in inter-facility transport service
9. Discuss how inter-facility transport service address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance during inter-facility transport by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, receiving facility personnel
4. Performance during role-play or simulations
2.2 EMS Systems

2.2.9 Military

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of military EMS systems
2. Describe the military environment and the impact it has on prehospital emergency medicine
3. Understand the priority of mission objectives when performing medical support functions for military and law enforcement operations
4. Describe the three echelons of care in the military theater
5. Describe the role of scene size-up, casualty extraction, and hemorrhage control for emergency care under fire
6. Demonstrate the initial and focused assessment, ABC’s, spinal motion restriction, relief of tension pneumothorax, intravenous fluid resuscitation, and cardiac arrest treatment in the military theater
7. Perform ongoing assessment, oxygen therapy, volume resuscitation, and patient monitoring during military casualty extraction/evacuation
8. Define the role of government in military EMS systems
9. Discuss incident management and command of military EMS systems
10. Discuss how military EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction, and field performance in the military EMS system by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, receiving facility personnel
4. Performance during role-play or simulations
2.2 EMS Systems
   2.2.10 Air Medical

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of air medical EMS services
2. Outline the funding source(s) for air medical emergency services
3. Define the goals of emergency air medical transport
4. Explain the rationale for patient transport utilizing rotor-wing versus fixed-wing aircraft
5. Relate how the staffing patterns of an air medical service affect the quality and level of care provided
6. Define visual flight rules (VFR)
7. Define instrument flight rules (IFR)
8. Summarize the Federal Aviation Administration (FAA) rules which govern the aviation aspects of air medical operations
9. Summarize the Federal and State EMS rules which govern the medical aspects of air medical operations
10. Analyze the decision making relative to transport from the scene by ground to the nearest facility versus transport via aircraft to a tertiary center
11. Discuss the effect of space limitations on patient care during air transport
12. Identify patients with illness or injury susceptible to barometric changes requiring restrictions in altitude
13. Explain environmental factors which may affect the ability of an air medical program to support ground EMS operations
14. Distinguish the types of special services (e.g., rescue/hoist, search) that helicopters may provide
15. Discuss the effects of radio frequency, electromagnetic fields, strobes, and infrared light sources may have on the safe operation of an aircraft
16. Proficiently deliver emergency medical care in the air medical environment
17. Participate in the oversight of air medical providers
18. Discuss the effect of declining reimbursements on air medical EMS systems
19. Discuss incident management and command of air medical EMS systems
20. Discuss how air medical EMS systems address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction, and field performance in an air medical service by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, air medical administrators, receiving facilities
4. Performance during role-play or simulations
2.2 EMS Systems
   2.2.11 Confined Space

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Summarize the history and development of confined space rescue services
2. Outline the funding source(s) for a confined space team
3. Define the goals of a confined space team
4. Summarize the federal rules and regulations which govern operations in a confined space
5. Demonstrate the components of medical oversight and initial/continuing education for a confined space team
6. Demonstrate a working knowledge of the unique aspects of packaging and evacuation for patients in confined spaces
7. Demonstrate a working knowledge of the delivery of medical care in a confined space
8. Define the role of government in confined space rescue services
9. Discuss incident management and command of confined space teams
10. Discuss how confined space teams address issues of quality of care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical oversight, and field performance in confined space operations by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, patients, and receiving facilities
4. Performance during role-play or simulations
2.2 EMS Systems
2.2.12 International

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Compare and contrast the components of the Anglo-American, Franco-German, Netherlands, Sarajevo and Japanese models of international EMS
2. List the factors which have contributed to the global development of prehospital emergency care
3. Identify the essential components of all prehospital emergency care systems
4. Define the difficulties in developing comparative EMS studies within and between countries
5. Collaborate with international EMS agencies and EMS professionals to promote the transference of research, knowledge, and best practices between countries

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction and field performance in international EMS systems by fellowship director or faculty member
2. Performance on formal oral exam
3. 360° feedback from faculty, allied health personnel, and patients
4. Performance during role-play or simulations
2.3 EMS Personnel

2.3.1 Scope of Practice

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the national standard levels of EMS education and training for prehospital providers
2. Understand the national standard EMS scope of practice for prehospital medical providers
3. Understand the role of the EMS medical director in developing education/training and scope of practice for advanced practice personnel within individual EMS agencies
4. Develop policies and protocols consistent with recognized prehospital scope of medical practice

**Evaluation and Assessment Methods:**

1. Direct observation of administration, medical direction and field performance with advanced practice personnel by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, EMS education program directors, and allied health personnel
2.3 EMS Personnel
   2.3.1 Scope of Practice
   2.3.1.1 Critical Care Paramedics

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the national standard levels of EMS education and training for critical care paramedics
2. Understand the national standard EMS scope of practice for critical care paramedics
3. Understand the role of the EMS medical director in developing education/training and scope of practice for advanced practice personnel within individual EMS agencies
4. Develop policies and protocols consistent with recognized critical care scope of medical practice

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction and field performance with critical care transport services by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, EMS education program directors, and allied health personnel
2.3 EMS Personnel
   2.3.1 Scope of Practice
   2.3.1.2 State vs. National

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the nationally defined levels of EMS education and training for prehospital emergency medical providers
2. Understand the nationally defined EMS scope of practice for each level of prehospital emergency medical provider
3. Differentiate between national and state requirements for prehospital scope of practice
4. Understand the role and responsibility of EMS medical directors as it relates to credentialing the practice of individuals practicing under their license
5. Develop policies and treatment protocols consistent with recognized levels of training/education and scope of practice for emergency medical providers
6. Collaborate with government officials (National Association of State EMS Officials), EMS accrediting bodies, EMS education program directors, and EMS professional societies to assure that education standards and scope of practice reflect current best practice for prehospital emergency care

Evaluation and Assessment Methods:

1. Direct observation of administration and medical direction related to scope of practice by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, EMS education program directors, allied health personnel
2.3 EMS Personnel
   2.3.1 Scope of Practice
   2.3.1.3 Field capabilities

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Apply national standards for education and scope of practice to the EMS environment for which the EMS physician is responsible
2. Understand the effect of EMS system variables which may affect the field capabilities of EMS practitioners to include:
   a) EMS service model (fire-based versus third service versus private)
   b) Response model (first responder versus tiered versus non-tiered)
   c) Population density/demographics
   d) Access and capacity/capability of healthcare facilities
   e) Volunteer versus career providers
   f) EMS funding resources
3. Develop policies and treatment protocols consistent with recognized levels of training/education and scope of practice for emergency medical providers
4. Collaborate with healthcare facilities and subspecialty physicians to establish field capabilities consistent with current best practice

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction, and field performance regarding field capabilities by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, EMS education program directors, receiving facilities, and allied health personnel
2.3 EMS Personnel
   2.3.1 Scope of Practice
   2.3.1.4 Military/federal government medics

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the standard levels of EMS education and training for prehospital providers in the military and federal government
2. Understand the standard EMS scope of practice for prehospital medical providers in the military and federal government
3. Compare and contrast civilian and military definitions of prehospital medical providers
4. Develop policies and protocols consistent with recognized prehospital scope of medical practice in the military and federal government
5. Collaborate with military and governmental EMS administrators, education program directors, and professional societies to assure that education standards and scope of practice reflect current best practice for emergency care in military/governmental settings

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction, and field performance in the military/governmental sector by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, military/federal EMS administrators, and allied health personnel
2.3 EMS Personnel

2.3.1 Scope of Practice

2.3.1.5 Nurses and physicians assistants in the field

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the national and state standards which address the practice of non-traditional EMS providers (e.g., nurses, physician assistants, respiratory therapists) in the prehospital environment
2. Compare and contrast unique but complimentary knowledge/skill sets of the EMS and non-EMS healthcare workers
3. Understand the role of nurses and physician assistants in the prehospital environment as it relates to special care needs of the EMS patient
4. Understand the role of the EMS medical director in developing education/training and scope of practice for nontraditional providers within individual EMS agencies
5. Develop policies and protocols for the non-traditional provider consistent with recognized prehospital scope of medical practice
6. Collaborate with EMS accrediting bodies, EMS education program directors, and EMS professional societies to assure that education standards and scope of practice reflect current best practice for nontraditional providers in prehospital emergency care

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction, and field performance with non-traditional EMS providers by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, EMS education program directors, EMS providers (traditional and nontraditional)
2.3 EMS Personnel
   2.3.2 Education
   2.3.2.1 Didactic

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Comprehend and apply adult learning theory in the education of EMS personnel
2. Understand the three domains of learning (cognitive, psychomotor, affective) and develop methods to assess student competence in each domain
3. Design didactic educational programs for EMS personnel utilizing the national EMS Core Content
4. Perform teaching, testing, and medical oversight functions in EMS education
5. Collaborate with EMS education program directors, EMS instructors, skills instructors, and field preceptors to assure entry level competency in students who complete EMS education programs

Evaluation and Assessment Methods:

1. Direct observation of teaching, testing, and medical oversight functions for the didactic components of EMS education by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, instructors, students, and EMS program graduates
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Design case-based educational programs for EMS personnel utilizing the national EMS Core Content
2. Perform teaching, testing, and medical oversight functions utilizing case-based elements in EMS education
3. Analyze and adapt patient cases for the purpose of quality assurance
4. Develop multidisciplinary case conferences (e.g., first responders, EMT/paramedic, emergency department teams, cardiologist, rehabilitation, home care) to assure understanding of the continuity of care necessary to optimize treatment and recovery of the acutely ill or injured patient
5. Collaborate with EMS education program directors, EMS instructors, skills instructors, and field preceptors to assure entry level competency in students who complete EMS education programs

Evaluation and Assessment Methods:

1. Direct observation of teaching, testing, and medical oversight using case-based formats in EMS education by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, instructors, students, and EMS program graduates
2.3 EMS Personnel
2.3.2 Education
2.3.2.3 Simulation

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Design simulation-based educational programs for EMS personnel utilizing the national EMS Core Content
2. Perform teaching, testing, and medical oversight functions utilizing simulation-based elements in EMS education
3. Analyze and adapt patient simulations for the purpose of quality assurance
4. Develop team simulation exercises to assure understanding of the continuity of care necessary to optimize treatment and recovery of the acutely ill or injured patient
5. Collaborate with EMS education program directors, EMS instructors, skills instructors, and field preceptors to assure entry level competency in students who complete EMS education programs

Evaluation and Assessment Methods:

1. Direct observation of teaching, testing, and medical oversight using simulation-based formats in EMS education by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, instructors, students, and EMS program graduates
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand issues related to work force re-entry of allied health personnel
2. Perform independent assessment of ability of provider to perform procedures and accurate patient assessment prior to re-entry
3. Develop a provider specific observation and evaluation program to ensure specific re-entry issues are addressed relative to the reason for provider leave of absence
4. Collaborate with EMS administrators to ensure that adequate observation and evaluation occur with provider re-entry and performance to ensure patient safety

Evaluation and Assessment Methods:

1. Direct observation of fellow assessment, testing, and medical oversight decision-making with respect to re-entry decisions by program director or faculty
2. Performance in oral discussions
2.4 EMS Personnel
   2.4.2 Education
   2.4.2.5 Distance Learning

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Implement distance learning technologies in EMS education utilizing the national EMS Core
2. Content
3. Perform teaching, testing, and medical oversight functions utilizing distance learning technologies in EMS education
4. Analyze and adapt distance learning technology to assess quality assurance in EMS education
5. Develop distance learning conferences to assure understanding of the continuity of care necessary to optimize treatment and recovery of the acutely ill or injured patient
6. Collaborate with EMS education program directors, EMS instructors, skills instructors, and field preceptors to assure entry level competency in students who complete EMS education programs

Evaluation and Assessment Methods:

1. Direct observation of teaching, testing, and medical oversight using distance learning in EMS
2. education by program director or faculty
3. Performance in oral discussions
4. Performance on written examinations
5. 360° feedback from faculty, instructors, students, and EMS program graduates
2.3 EMS Personnel

2.3.3 EMS Provider Health and Wellness

2.3.3.1 Occupational Health

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and employ concepts of occupational and preventive medicine in the emergency responder workforce
2. Understand local, state, and federal laws addressing occupational health and injury prevention in the workplace
3. Understand professional society guidelines for emergency personnel health and wellness
4. Perform and interpret fitness for duty evaluations
5. Recognize the effects of work and rest cycles on personnel
6. Understand the data demonstrating the inherent dangers of response in emergency vehicles
7. Collaborate with multi-disciplinary health providers to design comprehensive health and wellness programs and policies for the emergency responder workforce
8. Understand the medical director’s role in the prevention and intervention for responders to psychologically stressful events.

Evaluation and Assessment Methods:

1. Direct observation of administration, medical direction, and prehospital performance related to occupational health by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty and allied health personnel
2.3 EMS Personnel

2.3.3 EMS Provider Health and Wellness

2.3.3.2 Sleep deprivation

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the effects of shift work on the emergency responder workforce
2. Understand local, state, and federal laws addressing work and rest cycles in the workplace
3. Understand professional society guidelines for work and rest cycles in emergency personnel
4. Describe the effects of sleep deprivation on work performance and physical health of the emergency responder
5. Develop policies and processes to eliminate or minimize the effects of sleep deprivation in the emergency responder
6. Collaborate with multi-disciplinary health providers to design comprehensive health and wellness programs and policies for the emergency responder workforce

Evaluation and Assessment Methods:

1. Direct observation of health and wellness activities by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, allied health personnel, health and wellness experts
2.3 EMS Personnel

2.3.3 EMS Provider Health and Wellness

2.3.3.3 Emergency incident rehabilitation

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Assess physiologic parameters that serve as acute indicators of physical health
2. Assess psychological parameters that serve as acute indicators of mental health
3. Understand and employ professional society guidelines for on-scene safety and fitness
4. Conduct pre-entry and post-exit medical evaluations of emergency personnel
5. Detect and manage common injuries resulting from emergency response activities
6. Understand and implement principles of prevention and intervention for psychologically stressful events
7. Collaborate with multi-disciplinary medical personnel to develop evidence-based policies and protocols to protect personnel health while on-scene at emergency incidents

Evaluation and Assessment Methods:

1. Direct observation of emergency incident rehabilitation activities by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty and allied health personnel
2.4 System Management

2.4.1 System Finance

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply basic principles of accounting and finance in management of a public safety or medical organization
2. Work with administrators, financial specialists, and public and private officials to design and implement a EMS system budget
3. Utilize evidence-based best practices to promote cost-effective methods of prehospital medical care
4. Advocate for financial support of EMS systems at the local, state, and federal levels
5. Create and execute quality-centered prehospital medical protocols and policies given fiscal constraints

Evaluation and Assessment Methods:

1. Direct observation of EMS system finance activities by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, allied health personnel, EMS administrators, and financial officers
5. Review of budgetary compliance
2.4 System Management

2.4.2 Legislation and Government

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Comprehend and apply the fundamental principles underlying systems of government, regulation, and legislation
2. Understand the basic structure of government at the local, state, and federal levels
3. Apply knowledge of local, state, and federal law affecting prehospital medical care
4. Understand the process of developing regulation/legislation at the local, state, and federal levels
5. Understand and apply Robert’s Rules of Order
6. Advocate for support of emergency medical care at the local, state, and federal levels
7. Work with administrators and public officials to promote evidence-based quality-centered prehospital medical care
8. Collaborate with local, state, and federal policymakers to develop scientifically and legally sound healthcare regulation/legislation

Evaluation and Assessment Methods:

1. Direct observation of legislative and governmental action by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, allied health personnel, and government officials
2.4 System Management

2.4.3 Public Health

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and employ the fundamental principles of assessing and promoting health at the individual and population levels including the following:
   a. Epidemiology of disease
   b. Measurement of risk
   c. Characteristics of a test
   d. Sensitivity and specificity
2. Comprehend and utilize concepts of injury and disease prevention at the individual and population levels including the following:
   a. Principles of health behavior
   b. Principles of health education
   c. Principles of screening
3. Understand local, state, and federal law regarding public health
4. Understand the structure of local, state, and federal public health agencies
5. Comprehend the legal, ethical, and medical requirements for isolation and quarantine of patients and populations
6. Coordinate with local, state, and federal public health officials to design and implement policies and procedures to protect the public health
7. Collaborate with multi-disciplinary health providers to design health and wellness programs
8. Integrate prehospital medical care as part of a population-based strategy to promote health
9. Serve as an advocate for population health at the local, state, and federal levels

Evaluation and Assessment Methods:

1. Direct observation of public health assessments and promotion by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, allied health personnel, and public health officials
2.4 System Management

2.4.4 Patient Safety

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply fundamental principles and methods used in quality assurance processes to safeguard patient safety
2. Identify possible sources of critical safety issues at the individual, group, and environment levels
3. Apply systematic methods to eliminate or reduce sources of error in prehospital medical care
4. Analyze and design patient care policies and protocols based on system quality data and published scientific evidence and best practices
5. Serve as an advocate for quality-centered, evidence based patient care

Evaluation and Assessment Methods:

1. Direct observation of skills during activities in the medical direction environment by program director or faculty
2. Performance in oral and written discussions
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review of performance
2.4 System Management

2.4.5 Ethics in EMS

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define, understand, and apply the fundamental principles of ethics in medicine (respect for persons, beneficence, non-maleficence, justice)
2. Assess the ethical issues regarding end-of-life issues
3. Assess the ethical issues regarding the initiation and termination of resuscitation in the field
4. Understand the ethical principles involving the involuntary restraint and treatment of patients
5. Consult with healthcare ethicists to develop ethically and legally sound patient care policies and protocols

Evaluation and Assessment Methods:

1. Direct observation of skills during activities in the medical direction environment by program director or faculty
2. Performance in oral and written discussions
3. 360° feedback from faculty and allied health personnel
4. Retrospective chart review of performance
3.0 Quality Management and Research

3.1 Quality Management

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply common methods of data collection in prehospital patient care
2. Understand and apply fundamental principles and methods used in quality assurance and improvement processes
3. Develop and implement specific quality assurance and quality improvement systems
4. Analyze and design patient care policies and protocols based on system quality data and published scientific evidence and best practices

Evaluation and Assessment Methods:

1. Direct observation of quality management skills by program director or faculty
2. Performance in oral discussions
3. Performance on written examinations
4. 360° feedback from faculty, allied health personnel, and quality assurance officers
5. Retrospective chart review
3.0 Quality Management and Research

3.2 Research

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Apply basic epidemiologic principles in the study of the health of populations
2. Understand and apply common methods of statistical analysis
3. Understand the legal and ethical regulations concerning research and consent in the prehospital setting
4. Design and implement scientifically and ethically sound research protocols to advance knowledge of patient care in the prehospital environment
5. Collaborate with EMS agencies and EMS professionals to promote the transference of research, knowledge, and best practices between local, state, and national organizations

Evaluation and Assessment Methods:

1. Direct observation of research skills by program director or faculty
2. Design, data collection, and completion of a prehospital based research project
3. 360° feedback from faculty, allied health personnel, and research directors
4. Retrospective chart review of performance
4.0 Special Operations
   4.1 Mass Casualty Management
      4.1.1 Incident Command System

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Demonstrate proficiency in the use of the National Incident Management System including mastery of the Incident Command System for all size and types of mass casualty incidents
2. Rapidly initiate the Incident Command System and incorporate Medical Operations into the command structure to clinically evaluate and treat patients at a mass casualty incident with resources constrained by prehospital environment

Evaluation and Assessment Methods:

1. Direct observation of organizational skills and medical support of incident command systems during mass casualty incidents by program director, faculty supervisor, and allied health professional supervisors
2. Performance on structured patient simulations, real-time drills, computer based scenarios, and anatomic models
3. Written examination and certification in the Incident Command System
4. 360° feedback from faculty, allied health personnel, and patients
4.0 Special Operations
4.1 Mass Casualty Management
4.1.2 Triage

 Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Independently recognize mass casualty situations in the prehospital environment and initiate prehospital procedures for patient management at the incident
2. Rapidly initiate the Incident Command System and incorporate Medical Operations into the command structure to clinically evaluate patients at a mass casualty incident with resources constrained by prehospital environment
3. Formulate and execute a triage plan to sort patients based on injury severity, medical need, and prehospital resources
4. Demonstrate mastery of various mass casualty triage methods
5. Demonstrate mastery of triage methods for various types of mass casualty scenarios
6. Formulate and execute treatment plan for medical stabilization and transport of patients based on limited prehospital resources and austere conditions
7. Demonstrate an understanding of the limitations of medical practice in the prehospital environment when there is a mass casualty incident
8. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
9. Acquire knowledge of evidence based best practices for triage and treatment of patients at mass casualty incidents or in austere conditions in the prehospital setting

 Evaluation and Assessment Methods:

1. Direct observation of organizational and medical triage skills during mass casualty incidents by program director, faculty supervisor, and allied health professional supervisors
2. Performance of triage on structured patient simulations
3. 360° feedback from faculty, allied health personnel, and patients
4. Retrospective record review of various triage models and mass casualty scenarios
4.0 Special Operations

4.1 Mass Casualty Management

4.1.3 Mass Casualty Management

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Independently recognize mass casualty situations in the prehospital environment and initiate prehospital procedures for patient management at the incident
2. Rapidly initiate the Incident Command System and incorporate Medical Operations into the command structure to clinically evaluate patients at a mass casualty incident with resources constrained by prehospital environment
3. Formulate and execute a triage plan to sort patients based on injury severity, medical need, and available prehospital resources
4. Formulate and execute treatment plan for medical stabilization and transport of patients based on limited prehospital resources and austere conditions
5. Provide longitudinal care of the patient during transport in traditional and nontraditional vehicles from the point of initial contact to arrival at a definitive care facility
6. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
7. Understand the role of emergency management agencies at the local, state, and federal level and the medical resources available to these agencies
8. Understand how these medical resources are allocated in a mass casualty event to deliver clinical care and management to the incident
9. Understand the mission of the disaster response agencies at the national, state, and local levels and the mechanisms of activation for each during a mass casualty incident
10. Understand how these response agencies interacts with one another to deliver mass casualty patient care and resources
11. Demonstrate an understanding of the limitations of medical practice in the prehospital environment during a mass casualty incident
12. Develop a mastery of the Incident Command System used in EMS
13. Understand the alterations in procedural technique, treatment and equipment which may occur in the prehospital and hospital settings during a mass casualty incident as opposed to normal operations
14. Appropriately and safely perform procedures necessary for patient stabilization and treatment based on available personnel and resources in a mass casualty incident
15. Acquire knowledge of evidence based best practices for treatments of patients at mass casualty incidents or in austere conditions in the prehospital setting

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical care skills during mass casualty incidents by program director, faculty supervisor, and allied health professional supervisors
2. Performance of casualty management on structured patient simulations
3. 360° feedback from faculty, allied health personnel, and patients
4. Retrospective record review of casualty management
4.0 Special Operations

4.2 Chemical/Biological/Nuclear/Explosive (CBRNE)

4.2.1 Toxic Exposure/Poisoning/HAZMAT

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe the principles of scene safety as it relates to EMS response to toxins/poisons/HAZMAT events
2. Identify the common substances/chemicals/situations which may constitute a toxin/poison/HAZMAT response
3. Display a working knowledge of the local, state, and federal regulations regarding on scene operations during these events
4. Understand and apply the response principles related to contaminated environments
5. Detect and assess environments with toxins/poisons/HAZMAT
6. Select appropriate levels of personal protective equipment (PPE) in responding to these events
7. Assess and mitigate the effects of PPE on emergency responder health
8. Understand and overcome the difficulties in delivering medical care while wearing personal protective equipment (Level 1, 2, 3, 4)
9. Formulate and execute an appropriate treatment plan to manage patients in these environments
10. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
11. Collaborate with response agencies, poison control centers, and toxicologists to optimize event reporting, surveillance, patient management, and follow-up

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical skills during toxin/poison/HAZMAT incidents by program director or faculty
2. Direct observation of organizational and medical skills during simulated toxin/poison/HAZMAT incidents by program director or faculty
3. Oral examinations
4. 360° feedback from faculty, allied health personnel, patients, and response officials
5. Retrospective chart review
4.0 Special Operations
4.2 Chemical/Biological/Nuclear/Explosive (CBRNE)
4.2.2 Immediate Danger to Life and Health (IDLH environments)

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

At the completion of fellowship training, the prehospital physician will be competent to:

1. Describe the principles of scene safety as it relates to EMS response to IDLH environment
2. Identify the common substances/chemicals/situations which may constitute an IDLH response
3. Display a working knowledge of the local, state, and federal regulations regarding operations within contaminated environments
4. Understand and apply the response principles related to contaminated environments that pose an immediate danger to life and health
5. Detect and assess an environment with an immediate threat to life and health
6. Select appropriate levels of personal protective equipment (PPE) in responding to IDLH situations
7. Assess and mitigate the effects of PPE on emergency responder health
8. Understand and overcome the difficulties in delivering medical care while wearing personal protective equipment (Level 1, 2, 3, 4)
9. Formulate and execute an appropriate treatment plan to manage patients in these environments
10. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
11. Collaborate with response agencies, poison control centers, and toxicologists to optimize event reporting, surveillance, patient management, and follow-up

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical skills during IDLH incidents by program director or faculty
2. Direct observation of organizational and medical skills during simulated IDLH situations by program director or faculty
3. Oral examinations
4. 360° feedback from faculty, allied health personnel, patients, and response officials
5. Retrospective chart review
4.0 Special Operations
  4.2 Chemical/Biological/Nuclear/Explosive (CBRNE)
  4.2.3 Blast Injury

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe the principles of scene safety as it relates to EMS response to explosive/blast events
2. Identify the common elements and appearance of primary and secondary explosive devices
3. Understand and apply principles of explosive blast effects on the human body
4. Differentiate between primary, secondary, tertiary, and quaternary blast injuries
5. Recognize indicators of delayed manifestations of blast injury
6. Formulate and execute an appropriate treatment plan to manage blast injury patients in the prehospital setting
7. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
8. Collaborate with response agencies, law enforcement officials, and trauma centers to optimize event reporting, surveillance, patient management, and follow-up

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical skills managing blast injury by program director or faculty
2. Direct observation of organizational and medical skills managing simulated blast injury by program director or faculty
3. Oral examinations
4. 360° feedback from faculty, allied health personnel, and explosive/blast experts
5. Retrospective chart review
4.0 Special Operations
4.2 Chemical/Biological/Nuclear/Explosive (CBRNE)
4.2.4 Weapons of Mass Destruction (WMD) and Related Injury

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the principles and mechanisms of action of weapons of mass destruction
2. Differentiate between chemical, biological, radiological, nuclear, and explosive events
3. Distinguish between various patterns of injury and illness that result from WMD or terrorist activity
4. Recognize the potential for secondary devices when providing prehospital medical care at the site of a WMD or terrorist attack
5. Formulate and execute an appropriate treatment plan to manage patients subjected to WMD’s or terrorist activity
6. Recognize potential situations that place medical personnel at risk of injury or illness from WMD’s or terrorist activity
7. Understand crime scene investigation and evidence management and its effects on medical response to these events

Evaluation and Assessment Methods:

1. Direct observation of skills managing the medical response to a WMD/terrorist attack by program director or faculty
2. Direct observation of skills managing simulated WMD events by program director or faculty
3. Oral examinations
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review
4.0 Special Operations

4.2 Chemical/Biological/Nuclear/Explosive (CBRNE)

4.2.5 Hazardous Materials Incidents

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply the core concepts behind the planning for and response to chemical, biological, radiological, nuclear, and explosive events
2. Formulate and execute an appropriate treatment plan to manage patients subjected to hazardous materials
3. Interpret the effects of time, distance, shielding, and exposure in assessing victims of hazardous materials
4. Determine when the use of hazardous materials teams is needed
5. Understand and perform basic methods of identification of hazardous materials in the field
6. Understand and apply the principles of decontamination including differentiating between dry, wet, general, and secondary decontamination
7. Understand the pathophysiology of exposure to chemical, biological, radiological, nuclear, and explosive agents
8. Select appropriate medical antidotes and countermeasures based on knowledge of hazardous materials
9. Utilize appropriate hazardous materials databases and informational resources to assist in management of CBRNE events
10. Recognize and treat injuries and illness commonly sustained by responders to hazardous materials events
11. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
12. Collaborate with response agencies, law enforcement personnel, poison control centers, and toxicologists to optimize event reporting, surveillance, patient management, and follow-up

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical management skills during CBRNE responses by program director or faculty
2. Direct observation of organizational and medical management skills in simulated situations by program director or faculty
3. Oral examinations
4. 360° feedback from faculty, allied health personnel, response agencies, definitive care facilities
5. Retrospective chart review
4.0 Special Operations

4.3 Mass Gathering

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply fundamental principles and methods to plan and implement a comprehensive medical care system at mass gatherings and other special events
2. Understand and mitigate the unique challenges facing the provision of field medical care at mass gatherings/special events
3. Analyze previous event data to determine appropriate medical requirements for various types of events
4. Coordinate with event workers, emergency responders, and public officials to design large-scale medical care plans
5. Locate, design, and implement temporary medical treatment facilities
6. Determine the proper types and distribution of medical resources at mass gathering/special events
7. Develop and implement a comprehensive documentation and communications system to ensure coordinated delivery of medical care at mass gatherings/special events
8. Execute and supervise the delivery of medical care during mass gatherings/special events
9. Collect and analyze event data and apply quality improvement processes to improve medical response at future events
10. Determine the appropriate definitive care facility in accordance with clinical, operational and logistical exigencies
11. Collaborate with response agencies, event planners, public health departments, and definitive care facilities to optimize event reporting, surveillance, patient management, and follow-up

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical management skills at mass gatherings/special events by program director or faculty
2. Direct observation of organizational and medical management skills in simulated situations by program director or faculty
3. Oral examinations
4. 360° feedback from faculty, allied health personnel, patients, event planners, definitive care facilities
5. Retrospective chart review
4.0 Special Operations
4.4 Disaster Management
4.4.1 Incident Management System and National Response Framework

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe the phases of disaster response and the key activities within each phase
2. Describe the federal response to disasters and the laws, policies and directives which facilitate the provision of emergency assistance during these events
3. Describe the National Response Framework (NRF) and its component parts
4. Describe the National Incident Management System (NIMS)
5. Coordinate the use of NIMS during a disaster response
6. Perform incident command functions during a disaster exercise or response
7. Apply the principles of the National Response Framework, National Incident Management System, and Incident Command System
8. Become certified in the Federal Emergency Management Agency’s IS-100, 200, 300, 400, 700, and 800 courses

Evaluation and Assessment Methods:

1. Direct observation of skills during actual incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. Performance on standardized testing provided by the Federal Emergency Management Agency
5. 360° feedback from faculty and allied health personnel
6. Retrospective chart review
4.0 Special Operations
4.4 Disaster Management
4.4.2 Catastrophic Events

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe the federal response to disasters and the laws, policies and directives which facilitate the provision of emergency assistance during a disaster
2. Understand the criteria used by state and federal governments for declaring a disaster
3. Comprehend the local and federal systems for responding to disasters
4. Understand the principles and legal authority of state Emergency Management Assistance Compacts
5. Work with public and private officials in designing disaster medical response plans
6. Serve in operational and supervisory/incident command positions as a medical asset in disaster response
7. Apply scientific literature and collected data to implement quality improvement processes for disaster medical care
8. Describe lines of communication from the local authority to the federal government when disaster assistance is needed
9. Perform incident command functions during a disaster exercise or response
10. Utilize scientific research principles to collect and examine data to advance disaster medicine practice and response
11. Describe the role of the Emergency Management Assistance Compacts in disaster assistance

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical skills during disaster incidents by program director or faculty
2. Direct observation of organizational and medical skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
4.0 Special Operations
4.4 Disaster Management
4.4.3 Health and Medical Resources

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand the local and state resources available for disaster medical response, including local response teams and state National Guards
2. Understand the federal resources available for disaster medical response, including the National Disaster Medical System, United States Public Health Service, Federal Emergency Management Agency, and United States military
3. Utilize governmental notification and command structures to request local, state, and federal disaster medical support
4. Coordinate with local and national community and volunteer organizations to provide disaster medical support
5. Understand the volunteer organizations such as the Red Cross, Regional Medical Response Corp, and Veterinary Medical Assistant Teams (VMAT), roles and ability to provide disaster response support
6. Coordinate with volunteer, local, state, and federal public health officials to provide disaster medical support
7. Describe the National Response Framework and its component parts including the Emergency Support Function 8, the National Disaster Medical System (NDMS), and the Disaster Medical Assistance Team (DMAT)
8. Perform medical support for a NDMS agency and DMAT during a disaster exercise or response
9. Coordinate local emergency planning, triage, evacuation, and relocation functions with DMAT during a disaster response
10. Describe the use of regional medical reserve corps (MRC) to support disaster response
11. Perform medical support of MRC during a disaster exercise or response
12. Describe Emergency Support Function 9 and the Urban Search and Rescue (US&R) system
13. Perform medical support for US&R during an exercise or response
14. Describe the National Response Framework and its component parts
15. Describe the use of domestic military assets to support civilian disaster response

Evaluation and Assessment Methods:

1. Direct observation of skills during disaster events by program director or faculty
2. Direct observation of skills during activities in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
1. Special Operations
   4.4 EMS Special Operations
   4.5.1 Tactical

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify important elements of the scene size-up associated with the tactical engagement
2. Describe the principles of triage and apply them to the tactical setting
3. Demonstrate the role of the initial and focused assessment, ABC’s, spinal motion restriction, relief of tension pneumothorax, intravenous fluid resuscitation, and cardiac arrest treatment in tactical field care
4. Demonstrate patient movement, and hemorrhage control in emergency medical care under fire
5. Summarize the difficulties of performing rapid sequence intubation in the tactical setting
6. Explain the concept of permissive hypotension as it deals with penetrating torso injuries of the tactical environment
7. Describe the ballistic injury process, including direct injury, cavitation, temporary cavity, permanent cavity and zone of injury
8. Define the prehospital care associated with conventional casualties including general trauma care, projectile injury care, fluid resuscitation, pleural decompression, blast injury care, pain medication and antibiotic therapy
9. Describe the effects of flame and incendiary weapons and how casualties are managed
10. Outline the factors to be considered in making triage and patient disposition decisions for patients suffering from nerve agent, vesicant, cyanide, pulmonary agent and riot control exposure
11. Compare and contrast the advantages and disadvantages of providing emergency medical care in the hot and warm zones; describe the decision items utilized to determine which interventions should be initiated in the hot and warm zones
12. Describe the medical threat assessment and list the major medical threats in the tactical setting
13. List minor ambulatory care complaints the prehospital physician is likely to encounter in the tactical environment

Evaluation and Assessment Methods:

1. Direct observation of skills during tactical incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
4.0 Special Operations
4.5 EMS Special Operations
4.5.2 Casualty Evacuation

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply fundamental principles and methods used to prioritize patients for evacuation from the site of injury or illness to definitive care facilities
2. Understand the various medical transport methods available for patient evacuation by ground, air, and water
3. Understand and apply the special management techniques required to prepare and manage patients before, during, and after evacuation
4. Describe the elements used to prioritize patient evacuation from a disaster area
5. Perform a community assessment for patient evacuation in advance of a disaster event
6. Describe conventional EMS and unconventional transport assets utilized for patient evacuation from a disaster area
7. Apply knowledge of evacuation principles to implement a systematic patient evacuation plan
8. Analyze and design casualty evacuation policies and protocols
9. Describe the unique aspects of care for patients in environments with low or no light
10. Describe the unique aspects of packaging and evacuation for patients in confined spaces
11. Describe the unique aspects of care for patients with potential for delayed/prolonged evacuation
12. Describe the unique aspects of packaging and evacuation for patients with potential for delayed/prolonged evacuation

Evaluation and Assessment Methods:

1. Direct observation of evacuation skills in the mass casualty environment by program director or faculty
2. Direct observation of evacuation skills during activities in simulated mass casualty situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Define “Confined Spaces”
2. Describe the function of confined space medicine under austere, dangerous, prolonged, limited access, dark, and dusty conditions
3. Generalize the difficulties with inadequate help, tight space, limited cache of equipment, poor access to patient’s body and difficulty getting equipment into space on patient access and care
4. Describe the approach to medical problems such as crush syndrome, hazardous materials injury, and airway dust impaction in a confined setting
5. Relate the building and ground characteristics that might lead to a situation where patients are trapped or confined
6. Paraphrase the concept of the “Golden Day” with regard to accessing patients in a confined setting
7. Summarize the use of pain control measures in the confined setting
8. Participate in expedited extrication and providing stabilization of vital signs, immobilization of fractures, pain control, and specialized extrication techniques unique to the confined space setting
9. Explain the effects of carbon monoxide production, dust, fatigue, fatigue, and dehydration on rescuers and patients
10. List examples of difficulties in the medical treatment of injured persons in:
    a. Mines, caves and tunnels
    b. Collapsed buildings
    c. Collapsed elevated roadways and other man-made structures
    d. Farm silos
    e. Manholes and sewers
    f. Utility tunnels and crawl spaces
11. Name sources of potential secondary collapse
12. Itemize personal protection devices important to the confined space rescue
13. Locate sources of carbon monoxide in the rescue area which may affect patient care
14. Discuss the concerns with mobility in the confined space
15. Understand and apply concepts of providing medical care in the confined space and urban search and rescue environments
16. Determine injuries or illnesses of the victim to anticipate medical and extrication needs prior to accessing the patient
17. Determine any problems which will require alteration in the approach to accessing the patient
18. Recognize potential threats to patients and emergency responders in the confined space or urban search and rescue scene
19. Select appropriate personal protective equipment for responding to confined space/urban search and rescue incidents
20. Identify environmental constraints (atmosphere/toxic gasses) which impact patient care in the confined space
21. Perform environmental monitoring within and adjacent to the confined space to assess risk
22. Utilize specialized medical equipment for the rescue and treatment of entrapped patients
23. Understand and mitigate the barriers to provision of medical care caused by the confined space/urban search and rescue environment
24. Develop processes for triage, treatment, packaging, and evacuation which take into account low or no light environments
25. Develop processes for triage, treatment, packaging, and evacuation which take into account the potential for prolonged extrication or prolonged scene time
26. Identify the physical examination findings for crush injury, crush syndrome and compartment syndrome
27. Describe the treatment and monitoring necessary for these clinical entities in the confined space environment
28. Select and execute appropriate methods of vascular access in the entrapped patient
29. Select and apply appropriate methods of airway management in the entrapped patient
30. Formulate and execute a field treatment plan for patients with crush injury and crush syndrome
31. Recognize and treat injuries and illness commonly sustained by responders to confined space/urban search and rescue events

Evaluation and Assessment Methods:

1. Direct observation by program director or faculty of skills at actual events
2. Direct observation by program director or faculty of skills at simulated events
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review
4.0 Special Operations
4.5 EMS Special Operations
4.5.4 Provision of Care in Oxygen Depleted Environments

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Identify environmental constraints (atmosphere/toxic gasses) which impact patient care in the confined space
2. Perform environmental monitoring within and adjacent to the confined space to identify and assess health risks
3. Describe actions to eliminate or minimize austere conditions in the confined space
4. Describe PPE and respiratory support devices for use in austere conditions
5. Develop avenues of emergency egress and establish safe haven rally points within the confined space and the staging area
6. Develop processes for triage, treatment, packaging, and evacuation which take into account the environmental constraints of the confined space
7. Specify the equipment, supplies, and pharmacologic agents which improve the environment of the confined space
8. Perform triage, treatment, packaging, and evacuation in the austere conditions of the confined space
9. Coordinate with local emergency planners and response agencies to minimize the austere effects of the confined space environment

Evaluation and Assessment Methods:

1. Direct observation of skills during actual incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
4.0 Special Operations
  4.5 EMS Special Operations
    4.5.5 Airline/Cruise Ship Medicine

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply concepts of providing medical care onboard a cruise ship
2. Understand and mitigate the limitation of medical care in the cruise ship environment
3. Utilize principles of public health and preventive medicine to maximize the health of passengers and crew
4. Formulate and execute treatment plans for ill or injured crew or passengers onboard a cruise ship
5. Develop decision models to expedite evacuation of acutely ill or injured patients to definitive care facilities taking into account:
   a. patient acuity and needs
   b. shipboard medical resources
   c. care resources at established ports of call
   d. location of closest appropriate care facilities (land-based medical facilities)
   e. methods of evacuation and their availability
   f. potential for diversion of ship
6. Determine the appropriate criteria for institution of isolation/quarantine of passengers and crew
7. Understand and apply principles of delivering in-flight medical care
8. Understand and mitigate the limitations and hazards of medical care in the commercial airline environment
9. Comprehend the principles of flight physiology
10. Utilize the available airline medical resources
11. Determine appropriate criteria for diversion of an aircraft for medical reasons
12. Formulate and execute a treatment plan of the in-flight patient
13. Identify environmental constraints (spatial, illumination, acoustic, humidity, thermal, toxic, infectious, and atmospheric) which impact patient care during air and maritime operations
14. Describe actions to eliminate or minimize hazardous conditions during air and maritime operations
15. Develop processes for triage, treatment, packaging, and evacuation which take into account the environmental constraints of the air and marine environment
16. Specify the equipment, supplies, and pharmacologic agents which mitigate environmental hazards during air and maritime operations
17. Perform environmental monitoring in the air and marine environment
18. Perform triage, treatment, packaging, and evacuation during air and maritime operations
19. Identify environmental constraints (infectious and atmospheric) which impact public health during air and maritime operations
20. Describe actions to eliminate or minimize public health hazards during air and maritime operations
21. Coordinate with local emergency planners, response agencies, and public health authorities to prevent and/or treat disease during air and marine operations
22. Develop processes to identify, investigate, and report public health outbreaks during air and marine operations

Evaluation and Assessment Methods:

1. Direct observation by program director or faculty of skills at actual events
2. Direct observation by program director or faculty of skills at simulated events
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
 Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe disaster situations which may result in limited access or availability of definitive care
2. Describe the provision of critical care for prolonged time in a resource constrained environment
3. Develop processes for triage, treatment, and resource conservation
4. Perform patient triage and critical care in a resource constrained environment
5. Coordinate local emergency planning with the provision of critical care in a resource constrained environment

Evaluation and Assessment Methods:

1. Direct observation of skills during actual incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
4.0 Special Operations
   4.5 EMS Special Operations
      4.5.6 Equipment

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Describe disaster situations which may result in a limited care environment
2. Describe the essential equipment, supplies, pharmaceuticals, and personnel needed to treat patients in the limited care environment
3. Develop processes for triage, treatment, and resource conservation in the limited care environment
4. Perform patient triage and treatment in a limited care environment
5. Coordinate local emergency planning to obtain essential equipment, supplies, and personnel to operate in a limited care environment

Evaluation and Assessment Methods:

1. Direct observation of skills during actual incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
4.0 Special Operations
4.5 EMS Special Operations
4.5.7 Direction for Diversion of Aircraft/Ship

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Discuss the diversion of an aircraft or ship based upon the medical condition of a patient (passenger)
2. Identify key elements to consider when making diversion decisions
3. Develop processes for triage, treatment, packaging, and evacuation which take into account the key elements and patient condition
4. Specify the equipment, supplies, pharmacologic agents, and personnel needed to assure appropriate care during and after diversion
5. Perform diversion decision-making for patients during air and marine transport
6. Coordinate with local emergency planners, transport agencies, and diversion destinations in the evacuation of patients from aircraft and ship

Evaluation and Assessment Methods:

1. Direct observation of skills during actual incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review
4.0 Special Operations
4.5 EMS Special Operations
4.5.9 Resuscitation in an Unstable Craft

Goals and Objectives: At the completion of fellowship training, the trainee will be competent to:

1. Discuss the prioritization of resuscitative care activities in the unstable environment
2. Identify key elements to consider when making resuscitative care decisions
3. Develop processes for expedited treatment, packaging, and evacuation which take into account the key elements, patient condition, and unstable environment
4. Specify the equipment, supplies, pharmacologic agents, and personnel needed to assure appropriate care
5. Perform resuscitative efforts in an unstable environment
6. Coordinate with local emergency planners and response agencies to optimize and expedite resuscitation in the unstable environment

Evaluation and Assessment Methods:

1. Direct observation of skills during actual incidents by program director or faculty
2. Direct observation of skills in simulated situations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
Special Operations

4.6 EMS Special Operations

4.5.10 Wilderness EMS Systems

**Goals and Objectives:** At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply concepts of providing medical care in austere wilderness environments
2. Detect and mitigate challenges to medical care delivery in the wilderness
3. Utilize specialized equipment designed for extrication, transport, and medical care in the wilderness environment
4. Recognize and treat common injury patterns unique to wilderness environments
5. Apply basic wilderness survival skills to safely operate in a wilderness environment
6. Design and implement non-traditional methods for immobilization, transport, and care of patients in austere environments
7. Recognize and mitigate the effects of the elements on patients exposed to the environment
8. Implement extended care plans for patients in environments remote from medical facilities
9. Develop specialized policies and protocols for wilderness medicine providers

**Evaluation and Assessment Methods:**

1. Direct observation by program director or faculty of skills at actual events
2. Direct observation by program director or faculty of skills at simulated events
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review
4.0 Special Operations
4.5 EMS Special Operations
4.5.11 Patient Transport

Goals and Objectives: At the completion of fellowship training, the EMS physician will be competent to:

1. Understand and apply the concepts of rapid and efficient patient transportation to routine and specialty emergency medical operations to include:
   a. Urban, rural, frontier environments
   b. Specialty operations (tactical, wilderness, HAZMAT)
   c. Air medical services
   d. Cruise ship medical services
2. Detect and mitigate challenges to medical care delivery during patient transportation
3. Utilize specialized equipment designed for mobile medical care
4. Anticipate, recognize and treat worsening or deteriorating patient conditions which may occur during transportation
5. Recognize and mitigate the effects of the transportation environment on patients to include:
   a. Temperature
   b. Humidity
   c. Vibration
   d. Altitude
   e. Weather
   f. Noise
   g. Toxins/Noxious gasses
6. Implement extended care plans for patients with transportation delays or failures
7. Design and implement non-traditional methods for patient transportation during mass gathering or mass casualty events
8. Apply public health and safety principles to medical care during patient transportation

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical skills during routine patient transportation by program director or faculty
2. Direct observation of organizational and medical skills during specialized patient transportation by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance
4.0 Special Operations
   4.5 EMS Special Operations
   4.5.12 Telemedicine

Goals and Objectives: At the completion of fellowship training, the trainee will be competent to:

1. Understand and apply principles of delivering medical care from another location
2. Recognize and compensate for difficulties in assessing a patient from a separate location
3. Utilize various voice and video communications methods to assess and manage patients at another location
4. Coordinate with local medical providers to develop and implement management plans of patients from remote locations
5. Understand the legal issues involved in delivering medical care from another location
6. Create policies and protocols for appropriate use of telemedicine resources

Evaluation and Assessment Methods:

1. Direct observation of organizational and medical skills utilizing telemedicine by program director or faculty
2. Direct observation of organizational and medical skills in telemedicine simulations by program director or faculty
3. Performance in oral discussions
4. 360° feedback from faculty and allied health personnel
5. Retrospective chart review of performance