

CURRICULUM 2008-2009

DIDACTIC

Didactics during the fellowship year will cover all areas pertinent to the core training goals. References and reading assignments will be provided to allow for mastery of these goals during the course of the training year. Lectures and discussion will supplement clinical guidance to ensure completeness of instruction. Evaluation of comprehension and retention may take the form of written evaluation to ensure goals are met and to prepare the fellow for potential future subspecialty examinations.



I. EMS Overview

- A. Describe contributions to the development of EMS by each of the following:
 1. Military prehospital care activities
 2. 1966 National Academy of Sciences-National Research Council white paper
 3. White House EMS demonstration projects
 4. 1973 EMS Act and 1976 and 1979 amendments
 5. Preventive health services block grants
 6. Current national and local legislation
 7. Development of CPW resuscitation techniques
 8. EMT training curriculum development
 9. Ambulance standards development
 10. 1986 EMS-C funding and demonstration grants
- B. List contributions of EMS systems development in each of the areas of cardiac, trauma, burn, spinal cord, poison, and neonatal care.

II. EMS Systems Design

- A. List components of an EMS system and EMS system models as defined by the EMS Act of 1973.
- B. Discuss the general concepts in design options for EMS system structure, including the general philosophy of each system design.
- C. Outline the EMS administrative/operational/political design for the state, regional, and local EMS structures.
- D. Describe the enabling legislation and rules and regulations that govern EMS activities in the state.
- E. Describe unique needs of special systems of care such as trauma, cardiac, pediatrics, toxicology, psychiatric, neonatal/ high-risk obstetrics, volunteer systems, and first-responder systems.

III. EMS Personnel

- A. Outline the national (Department of Transportation) and state requirements (including number of hours) for initial training and continuing education for dispatchers, firstresponders, EMT-A (basic), EMT-I (intermediate), EMT-P (paramedic) and critical care personnel (CCP, CCRN).
- B. Compare and contrast the patient care capabilities and responsibilities (including basic and advanced life support techniques) for first-responders, EMT-A (basic), EMT-I, EMT-P, CCP and CCRN.
- C. Review and summarize the medical conditions and situations for which protocols, policies, and procedures for EMS providers at all levels are needed.
- D. Describe the importance and structure of EMS crisis intervention and stress management programs.

- E. Summarize the critical components of labor relation activities, including appropriate disciplinary procedures.
- F. Summarize and develop programs to address infectious disease and health safety problems.

IV. Medical Control

- A. Outline the medical control authority structure for the local system, including qualifications and responsibilities for the medical director.
- B. Define the scope of EMS practice for the local area.
- C. Define the clinical implications of medical control and distinguish between on-line and off-line medical control, and
 - 1. Describe situations in which on-line medical control exists.
 - 2. List off-line medical control activities.
- D. List responsibilities taken when a physician assumes on-scene medical control.
- E. Outline the procedure for development of EMS protocol, policy, and procedure development.
- F. Discuss the concepts of quality assurance and quality improvement as they relate to EMS.
- G. Outline the procedure for complaint handling within the EMS system.
- H. Outline the disciplinary procedure, including due-process mechanism, for the system.
- I. Outline the mechanism for handling scene non-EMS physician interactions (physician intervener).
- J. Outline the interaction with the EMS system and the general medical community.
- K. Outline each of the protocols, policies, and procedures for the local EMS system.
- L. List important items of information about a prehospital emergency patient that should be radioed to the base station emergency physician.
- M. List changes in patient's condition about which the base station physician should be informed.

V. Communications

- A. Outline the EMS access procedures for your area.
- B. List differences between 911 and enhanced 911 systems.
- C. List differences between simplex and duplex radios and between UHF and VHF capabilities.
- D. List the advantages and disadvantages of cellular telephones and radio communications as relating to voice and telemetry communications, including cost factors of the systems.
- E. List differences between base hospital and resource hospital.
- F. List the components of medical interrogation.
- G. List the differences between priority dispatching and call screening.
- H. Describe three critical components of emergency medical dispatching.
- I. Outline sample post-dispatch instructions for cardiac arrest and emergency childbirth.

VI. EMS Equipment/Vehicles

- A. Describe the function and safe use of ambulance emergency response equipment, including siren, lights, and flares.
- B. Outline the types of EMS vehicles available (types of transporting vehicles, nontransporting vehicles, rescue vehicles).
- C. List the equipment necessary for a unit to function as a basic life support or advanced life support unit, according to state requirements.
- D. Describe the operation of each of the radios on the EMS vehicle.
- E. Outline the drugs currently in use in the local EMS system.
- F. Discuss which drugs are appropriate for use in the prehospital setting, including efficacy, relative risks, and medico-legal considerations.
- G. Outline the proper use of medical, rescue, and extrication equipment.
- H. Outline a method for evaluation and approval of new EMS equipment and techniques.

I. Given a brief clinical scenario, outline the appropriate use of particular equipment, including extrication equipment, backboards, traction splints, military antishock trousers, suction equipment, oxygen equipment, airway equipment, stretchers, radios (squad, basic life support, telemetry), and drug box contents.

J. Discuss special requirements for pediatric equipment.

VII. EMS Agencies

A. Outline the structure and interrelationship of appropriate local, regional, state, and national medical and political EMS agencies.

B. Discuss the types of EMS provider agencies (municipal, private, and volunteer), including the advantages and disadvantages of each type.

VIII. EMS Receiving Facilities

A. Distinguish between vertical and horizontal categorization of facilities, outline advantages and disadvantages of both systems, and describe the EMS system's needs, role, and authority in the categorization process.

B. Compare and contrast categorization, designation, and verification.

C. Outline special considerations regarding categorization of the following specialty centers: trauma, ICUs, pediatric, poison control, spinal cord, neonatal/perinatal, burn, and psychiatric.

IX. Air Medical

A. List indications/contraindications for and advantages/disadvantages in the use of air medical transport.

B. Describe physiologic changes that may occur during air medical transport and list medical conditions in which air medical transport may be contraindicated.

C. Outline aircraft safety equipment and their proper use.

D. Outline aircraft safety procedures for ground operations as well as inflight problems.

E. Outline special considerations of air medical transport that pose problems with patient care (eg, aircraft space, noise preventing auscultation).

F. Recite how to prepare a proper landing zone, package a patient for transport, and assist in loading that patient in the aircraft.

G. Outline the integration and interaction of an air medical program within the EMS system for both scene responses and interfacility transfers.

X. Legal Considerations

A. Discuss the concept of vicarious liability and how it applies to EMS activities.

B. List two persons legally responsible for actions of EMS personnel in the field.

C. Outline a protocol for handling the following high-risk situations in the field:

1. Intervening physician
2. Refusal of care
3. Do not resuscitate terminally ill patients
4. Incompetent patients
5. Communicable disease exposure
6. Destination decisions
7. Transfer policies
8. Multiple patients/triage
9. Pediatric patients (consent)

D. Describe the Omnibus Reconciliation Act legislation and its impact on EMS activities.

E. Outline a risk management program to minimize malpractice exposure.

XI. Mass Gathering/Disaster

- A. Outline the principles of disaster management.
- B. Define and outline the incident command structure.
- C. Outline the interaction between EMS and other components of a disaster response (police, fire, public health, public utilities).
- D. Outline the structure of federal, state, and local resources available for disaster response.
- E. Describe the National Disaster Medical System and its application in international, national, regional, and local disaster responses.
- F. Outline the components of an EMS disaster response.
- G. Define the meaning of the word triage.
- H. Outline the major components of triage.
- I. Outline the main categories of civilian triage priorities and give examples of each.
- J. Outline pitfalls to successful triage.
- K. Outline the components that must be addressed in the development of
 1. An area-wide EMS disaster plan
 2. A hospital disaster plan
- L. Outline special considerations for the planning of EMS coverage for special events such as sporting events (eg, major stadium events, motor vehicle races, boat races), concerts, airshows.
- M. Outline the interaction of all public safety agencies (police, fire, EMS, public utilities, governmental administrative bodies) at local, state, and federal levels during a disaster response.
- N. Special considerations regarding hazardous materials:
 1. Outline a general protocol for ensuring the proper response to a potential hazardous materials exposure, including proper protection of personnel.
 2. List reference sources available to provide guidance in ensuring proper protection, decontamination, and treatment of patients exposed to hazardous materials such as
 - a. Chemical exposure
 - b. Radiation exposure
 3. Outline special considerations including physiologic effects on the patient and EMS provider for hazardous materials exposure such as
 - a. Chemical exposure
 - b. Radiation exposure

XII. Funding

- A. Outline the budget for your local EMS agency and identify current funding sources for EMS activities from local, state, and national sources.
- B. Outline necessary components of a grant application.
- C. Outline current reimbursement issues regarding prehospital care.
- D. Identify grant sources typically available for prehospital care program operations, training, and research.

XIII. Community Involvement

- A. Outline a program for the development of public education issues addressing the following:
 1. EMS services--availability, level of services, access
 2. CPR and first aid training
 3. Health care issues
- B. Outline a program for media education and media interaction during EMS events.
- C. Outline funding sources available in the community for EMS and health-related activities and procedures to access those funds.

XIV. Education

- A. Outline general principles in adult education. Compare and contrast with primary educational methods.
- B. Outline a program for the evaluation of EMS educational programs.
- C. Discuss unique aspects of education about pediatric issues (eg, low volume, high emotional investment).

XV. Research

- A. Outline the importance of each of the following research concepts, with particular emphasis on the relationship and uniqueness to EMS:
 - 1. Literature review
 - 2. Research design and methodology
 - 3. Data collection
 - 4. Statistics
 - 5. Institutional Review Board overview
 - 6. Consent issues (including deferred consent)
- B. Outline techniques for effective oral and written presentations.
- C. Outline funding sources available for EMS-related research.

XVI. Operations Management

- A. Develop a business plan incorporating a long-range strategic plan for developing or improving an aspect of the EMS service.
- B. Outline common techniques of negotiating and participate in negotiation training or study.
- C. Outline the development and conduct of an effective problem-solving session incorporating diverse stakeholders.
- D. Outline the components of financial management of an EMS system to include budget development (capital and operations), cost systems, budget target tracking, income sources, and other relevant aspects of management accounting.
- E. Describe labor relations requirements in managing a professional workforce of EMS providers, to include systems of compensation, personnel law, health and safety issues, wrongful discharge, due process, evaluation, and letters of recommendation (also, see section III).
- F. Describe the development and use of management information systems in managing EMS system operations.

XVII. Prehospital Clinical Care Issues

- A. Identify clinical entities of proven EMS efficacy.
- B. Identify clinical entities in which EMS care is controversial.
- C. Define the scope of clinical practice for your local EMS system.
- D. Discuss the effect of the entire health care system (including EMS activities) on overall patient outcome.

CLINICAL AND ADMINISTRATIVE

A large portion of the training experience will consist of clinical and administrative participation in active EMS systems. The fellow will be provided training under the direct and indirect supervision of the fellowship director during the training year. Training environments will include a variety of perhospital service environments and may include private and municipal based EMS, fire and areomedical programs. The fellow will attend local government CQI meetings as well as REMSCO and REMAC meetings. The fellow will work closely with the Regional Medical Director to gain a in depth

understanding of local and state EMS law and system structure. Elective experiences will be selected by the fellow on approval of the fellowship director.

- Participation in field supervision of EMS and Fire personnel and in the physician field response program.
- Participation in institutional, community, and governmental work groups that influence or govern EMS-related activities.
- Participation in on- and offline protocol development, modification and direction for ground and aeromedical systems.
- Participation in disaster, weapons of mass destruction, and hazardous materials (hazmat) preparedness.
- Participation in departmental, institutional, paramedic training, and community teaching programs as approved by the program director.

RESEARCH

- Developed proposal timeline and budget together with documented supervision by fellowship director/research advisor.
- Completion and submission of an abstract for competitive review for presentation at a national scientific meeting.
- Completion and submission of a publishable paper, as judged by fellowship director/research advisor, to a peer-reviewed journal.

ELECTIVES

Elective(s) will be chosen at the beginning of the year and will be approved by the fellowship director. When appropriate, electives may also require the approval of the Chair of the Department of Emergency Medicine. Elective length may vary depending on the agreed upon goals and based on intensity of the proposed experience.

- International EMS elective: The fellow may have the opportunity to travel abroad on an educational, service or research elective. This may coincide with current Department sponsored trips to St. Lucia, China or India. The fellow may also propose another destination. The program director must approve a detailed elective proposal prior to submission to the Chair.
- Disaster Response / Domestic Preparedness elective: The fellow may choose to pursue additional government sponsored training in the area of disaster medicine. The program director must approve a detailed elective proposal prior to submission to the Chair.
- Tactical Medicine elective: The fellow may seek additional tactical support training as it applies to medical response and evacuation. The program director must approve a detailed elective proposal prior to submission to the Chair.
- Wilderness Medicine elective: The fellow may participate in an introductory or advanced wilderness medicine training experience. The program director must approve a detailed elective proposal prior to submission to the Chair.

COURSES / MEETINGS

The fellow is required to attend the NAEMSP Medical Directors' Course and Practicum (or equivalent as defined by the program director) and at least one other local or national EMS or disaster medicine meeting. Meetings listed below are recommended. The fellow may choose to attend alternative meetings with approval from the fellowship director.

- National Association of EMS Physicians: The annual meeting for the EMS Physician professional organization is highly recommended for all fellows.
- Air Medical Transport Conference (AMTC): Sponsored by the AAMS and endorsed by the AMPA, this is an excellent choice for fellows with a strong interest in air medical transport.
- “A Gathering of Eagles” (EMS State of the Sciences Conference): The U.S. Metropolitan Municipalities EMS Medical Directors Consortium (The “Eagles” Coalition) is comprised of most of the jurisdictional EMS Medical Directors for the nation's 20 - 25 largest cities 9-1-1 systems as well as the FBI and the U. S. Secret Service. This conference helps to expose the fellow to current research as well as the thoughts and opinions of leaders in the field of EMS & Disaster medicine. Those with an interest in large EMS system operations and the political aspects of EMS should consider this meeting.

References:

Krohmer JR, Swor RA, Benson N, Meador SA, Davidson SJ. Prototype core content for a fellowship in emergency medical services. *Ann Emerg Med.* 1994 Jan;23(1):109-14.

Society for Academic Emergency Medicine. EMS Fellowships. SAEM Website. Available at:
<http://www.saem.org/saemdnn/Home/Communities/Fellows/Fellowship/EMS/tabid/188/Default.aspx>