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CURRICULUM

A Model Curriculum for an Emergency Medical Services (EMS) Rotation for Emergency Medicine Residents

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ABSTRACT:

Audience: This EMS curriculum is designed for emergency medicine residents at all levels of training.

Introduction: Emergency medicine (EM) physicians have routine interaction with emergency medical services (EMS) in their clinical practice. Additionally, the American College of Graduate Medical Education (ACGME) mandates that all EM resident physicians receive specific training in the area of EMS.¹ Historically, EMS training for EM residents has been conducted in the absence of a standardized didactic curriculum. Despite advancements in the area of prehospital training, there remains wide inconsistency in EMS training experiences among EM residency training programs.² To our knowledge a standardized and reproducible EMS curriculum for EM residents does not exist.

Objectives: The aim of this curriculum is to provide a robust learning experience for EM residents around prehospital care and EMS that fulfills the ACGME requirements and which can be easily replicated and implemented in a variety of EM residency training programs.

Method: The educational strategies used in this curriculum include didactics, asynchronous learning through online modules and a focused reading list, experiential learning through ride-alongs, structured small group discussion, supervised medical command shifts, and mentored practice in organizing and delivering didactics to EMS providers.

Topics: History of EMS, medical oversight of EMS systems, direct and indirect medical command, EMS dispatch, disaster preparedness and management, quality improvement, EMS system designs, air medical services.



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Learner Audience:

Interns, Junior Residents, Senior Residents

Length of Curriculum:

This curriculum will run over a four-week period.

Topics:

History of EMS, medical oversight of EMS systems, direct and indirect medical command, EMS dispatch, disaster preparedness and management, quality improvement, EMS system designs, air medical services.

Objectives:

1. Learners will demonstrate understanding of the key principles of systems based practice of Emergency Medical Services
 - a. Residents will be able to identify the different levels of services and explain the differences in their scope of practice
 - b. Residents will be able to describe indirect medical control principles
 - c. Residents will be able to describe the communication structure within the prehospital system including EMS dispatch and communication protocols
 - d. Residents will be able to define quality assurance measures for EMS
2. Residents will gain observational experience with ground EMS ambulance transports
3. Residents will refine skills providing direct medical command during supervised medical command shifts
4. Residents will be able to describe the fundamentals of Disaster Management and Emergency Preparedness
5. Residents will develop and present educational didactics for prehospital providers

Brief introduction:

Emergency Medicine (EM) physicians have routine interaction with Emergency Medical Services (EMS) in their clinical practice. There are over 36 million EMS responses in the United States annually, with an estimated 28 million EMS transports.³

Traditionally, the majority of these transports will be to an Emergency Department where Emergency Medicine physicians will assume care. The American College of Graduate Medical Education (ACGME) mandates that all EM residents receive specific training in the area of EMS. Currently, a detailed and reproducible standardized curriculum does not exist.

In recent years, the American Board of Medical Subspecialties has recognized EMS as a subspecialty of Emergency Medicine. This subspecialty certification followed the Institute of Medicine (IOM) recommendation for the creation of subspecialty certification for EMS.⁴ This has led to the creation of ACGME accredited EMS fellowships and also greater standardization of EMS fellowship training curriculum. However, these curriculum changes for fellowship programs have not yet led to standardization of the EMS curriculum for EM residents. Currently, there is not a widely accessible detailed EMS curriculum to effectively train EM residents in a reproducible manner despite prior curriculum recommendations.⁵⁻⁹ While these have helped establish general EMS core concepts and principles, they have not detailed how to specifically teach these concepts to EM residents or how to reproduce a practical EMS rotation. In the decades since the introduction of these recommendations, the EMS training experiences remain widely inconsistent between EM residency training programs.

The aim of this curriculum is to provide an updated model for a structured EMS rotation for EM residents which provides a vigorous educational experience that fulfills the ACGME requirements and can be easily replicated and implemented at a variety of EM residency training programs. Ideally, this will lead to the standardization of EMS learning experiences among EM residency programs. This curriculum is intended for use by faculty members responsible for the development and implementation of EMS training of EM residents.

Problem identification, general and targeted needs assessment:

The American College of Graduate Medical Education (ACGME) mandates that all EM residents receive specific training in the area of EMS. Currently, there is not a widely accessible standardized, detailed EMS curriculum to effectively train EM residents in a reproducible manner. As a result, EMS training experiences remain widely inconsistent between EM residency training programs. Ultimately, the variable quality of training that is administered to EM residents in the areas of prehospital care and EMS may have a direct effect on patient care.

Goals of the curriculum:

The aim of this curriculum is to provide an updated model for a structured EMS rotation for EM residents that provides a vigorous educational experience that fulfills the ACGME



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requirements and can be replicated and implemented at a variety of EM residency training programs.

Objectives of the curriculum:

1. Learners will demonstrate understanding of the key principles of systems based practice of Emergency Medical Services
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5. Residents will develop and present educational didactics for prehospital providers

Educational Strategies: (See curriculum chart)

Please see the separate document of linked objectives and educational strategies

The curriculum fulfills the ACGME requirements pertaining to EMS for Emergency Medicine training programs.¹ This includes:

- IV.A.6.c) Residents must have experience in emergency medical services (EMS), emergency preparedness, and disaster management.
 - IV.A.6.c) (1) EMS experiences must include ground unit runs and should include direct medical command.
 - IV.A.6.c) (2) This should include participation in multi-casualty incident drills.
- IV.A.6.d) Residents should have experience teaching out-of-hospital emergency personnel.

Given the nature of EMS, a large portion of the educational experiences will take place in the prehospital setting. Therefore, this curriculum does require a pre-established relationship with a ground transport EMS agency as well as a 9-1-1-dispatch communications center or public-safety answering point. This may best be accomplished by working with the local EMS medical director physician(s), since the rotation director should

be an EM physician with experience and knowledge of the EMS system.

Residents will gain EMS field experience during scheduled ride-along shifts with a ground transport ambulance service, an ACGME requirement. This will include exposure to prehospital stabilization techniques and standing treatment protocols utilized by EMS providers. Resident learners are observers during this experience, and thus should not perform on-scene (direct) medical command duties during this experience. Residents should be provided with a copy of the local EMS protocols for review, which allows exposure to indirect medical control principles. A patient log and resident attendance sheet will be maintained. It should be noted that patient identifiers should not be recorded and all existing institutional Health Insurance Portability and Accountability Act (HIPAA) policies be strictly followed. The patient log allows the resident to document which standing EMS protocols were used by the prehospital providers and if additional medical control orders were needed during patient care. At the University of Wisconsin, residents were scheduled for 4 separate twelve-hour ride-along shifts with a large fire department based paramedic level transport service.

Residents also have the opportunity to practice and refine Direct Medical Command principles, another ACGME requirement. This is accomplished during scheduled Medical Command Shifts. These shifts are scheduled in the emergency department, under the supervision of the on-duty emergency medicine faculty physician responsible for performing direct (online) medical command. This most commonly will be performed by radio communication. The resident will be required to be familiar with the standing EMS protocols and basic radio etiquette techniques provided at the beginning of the rotation. While on these shifts the resident should have a primary focus on prehospital care, without the expectation to become heavily involved in EM patient care responsibilities. These shifts also allow dedicated time for the resident to practice EMS skills such as intravenous line placement and 12-lead electrocardiogram (ECG) placement under the direct supervision of EM faculty.

A separate observation shift in a local or regional 9-1-1-dispatch center to compliment the resident field experience is included. During this experience, residents will be assigned to work with an Emergency Medical Dispatcher to observe 9-1-1 calls with request for Emergency Medical Services. This offers an opportunity to gain a basic knowledge of Emergency Medical Dispatch protocols and systems based practice. At the University of Wisconsin residents were scheduled for a single 6-hour observation shift with an emergency medical dispatcher at the county public safety communication center.



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Resident physicians will also gain experience with out-of-hospital provider education, an ACGME requirement. This includes development and delivery of a 1-hour continuing education didactic lecture for EMS providers. A list of possible lecture topics is provided, which is consistent with continuing educational requirements established by the National Registry of Emergency Medical Technicians (NREMT). The choice of topics should be coordinated with the rotation director in advance. The lecture content should be aimed at the appropriate EMS provider level and be delivered to providers during a scheduled training session. Lecture topics should also be rotated frequently, as to not provide redundant teaching material. Residents are evaluated on this component by the rotation director, and also receive feedback on the content and delivery of the lecture.

The fundamentals of Disaster Management and Emergency Preparedness are attained through completion of web-based learning modules developed by the Federal Emergency Management Agency (FEMA). These modules are provided free of charge and can be readily accessed by any medical professional. This learning experience will provide the foundation for the universal principles of the Incident Command System (ICS-100) and National Incident Management System (IS-700). These are the same standardized training modules used to train public safety and EMS professionals nationwide. In combination with the assigned reading material, these asynchronous on-line learning modules provide a thorough exposure to Disaster Management and Emergency Preparedness.

Resident training in Disaster Management is further accomplished through participation in a multi-casualty incident drill, an ACGME requirement. This can be coordinated with existing hospital drills at the primary hospital site for practicality purposes. At our institution, residents attend one of the five hospital-wide drills that are scheduled throughout each year as part of hospital accreditation annual requirements. This component may occur asynchronous to the assigned rotation time-frame given that these drills do not occur every month.

In addition to the observational and clinical experiences, there are a variety of structured small group discussion and didactic sessions. There is an Introduction to EMS lecture designed to provide brief historical and high-yield information. Also included is a lecture covering Field Orientation and Ambulance Safety topics. These didactics are targeted for the resident learner and should be delivered by the EMS faculty rotation director at the start of the rotation. A small group discussion occurs midway through the rotation, which uses a case-based approach to cover EMS System Design and Quality Measures.

A tailored list of targeted EMS reading materials serves as a resource to guide resident studies. The reading list is a compilation of high-yield chapters from widely available and reputable Emergency Medicine and Emergency Medical Services textbooks designed for physician learners.¹⁰⁻²⁰

Learner evaluation rubrics are provided for each experience. The Evaluation Rubric Card should be used for the clinical and observational experiences, including ride-along, dispatch, and medical command experiences. There is also an evaluation rubric for the EMS provider education session. These individual evaluations can be aggregated and used by faculty to complete the mid-rotation and end-of-rotation evaluations. An example for the end-of-rotation rubric used at our institution is provided.

A Rotation Learner Packet is included, which is a single file comprised of several of the above documents which can be provided to the learner at the beginning of the rotation. This includes The Rotation Objectives and Requirements, Sample Schedule, Reading List, EMS Provider Teaching Session Topics, EMS Provider Teaching Evaluation, EMS Medical Command Shift Outline, Evaluation Rubric Card, Patient Log, and Attendance Sheet.

Associated Content:

- PowerPoint Slides: Introduction to EMS for EM Residents
- PowerPoint Slides: Field Orientation and Ambulance Safety
- Small Group Discussion Outline: EMS System Design and Quality Measures
- Rotation Evaluation
- Rotation Learner Packet:
 - I. Rotation Objectives and Requirements
 - II. Sample Schedule
 - III. Reading List
 - IV. EMS Provider Teaching Session Topics
 - V. EMS Provider Teaching Session Evaluation
 - VI. EMS Medical Command Shift Outline
 - VII. Evaluation Rubric Card
 - VIII. Patient Log
 - IX. Attendance Sheet

Evaluation and Feedback:

This curriculum was implemented at the University of Wisconsin Emergency Medicine Residency Training Program in July 2015. Over a two-year period, 19 resident learners successfully completed the curriculum and each completed an electronic rotation evaluation following conclusion of the rotation. Evaluation ratings were based on a standard 1 (poor)



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through 5 (excellent) Likert scale. The primary outcome of interest was the rating for “my overall educational experience in this rotation met my expectations and the learning objectives outlined at the beginning of the rotation” was 4.63 (SD 0.5). A total of 15 pre-implementation electronic evaluations were available for comparison. The mean rating among pre-implementation learners for the same outcome was 4.4 (SD 0.7). Comparison of the mean ratings between the two groups was measured using an unpaired t-test, which did not reveal a statistically significant difference ($p=0.272$). We conclude that implementation of a highly structured and reproducible EMS curriculum for emergency medicine residents was rated positively by learners.

As a result of additional written commentary feedback from residents, we will begin notifying residents at the beginning of the academic year of the date for their EMS teaching session in order to help with planning and preparation. Additionally, we have added a rotation debriefing session with EMS core faculty to provide summative feedback and reiterate key learning points from the four-week experience. Increasing the number of EMS ride-alongs during the rotation would also be a reasonable consideration, as the field experience component was highly rated.

Overall, the implementation of this EMS curriculum was successful at our institution and was received positively by resident learners. We feel that a reproducible, structured curriculum will lead to a more standardized EMS training experience for EM residents. This structured EMS curriculum for Emergency Medicine residents should be considered at other institutions.

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DIDACTICS AND HANDS-ON CURRICULUM

Topic	Recommended Educational Strategy	Educational Content	Objectives	Learners	Timing, resources Needed (Space, Instructors, Equipment, citations of JETem pubs or other literature)	Recommended Assessment, Milestones Addressed
EMS Systems Based Practice	<ol style="list-style-type: none"> 1. Didactic Session describing EMS Systems 2. Asynchronous Learning: reading material & online modules 	<ul style="list-style-type: none"> -History of EMS -Medical Oversight of EMS Systems -Indirect and Direct Medical Command -EMS Dispatch -Disaster Preparedness and Management -Quality Improvement -EMS System Designs -Air Medical Services 	<ul style="list-style-type: none"> -Learners will demonstrate an understanding of the principles of systems based practice of Emergency Medical Service -Learners will be able to describe the fundamentals of Disaster Management and Emergency Preparedness -Residents will develop and present educational didactics for prehospital providers 	PGY-3	<p>45 minutes (lecture) Instructors: 1 Equipment: PowerPoint (and projector/screen)</p> <p>Asynchronous Learning: Computer/Internet Access</p>	<p>Milestone: SBP2</p> <p>Assessment: Rotation Evaluation</p>



DIDACTICS AND HANDS-ON CURRICULUM

Topic	Recommended Educational Strategy	Educational Content	Objectives	Learners	Timing, resources Needed (Space, Instructors, Equipment, citations of JETem pubs or other literature)	Recommended Assessment, Milestones Addressed
EMS Operations	<ol style="list-style-type: none"> 1. Didactic Session 2. Clinical Experiences 3. Small Group Discussion 4. EMS Provider Teaching Session 	<p>-Patient care protocols and stabilization techniques</p> <p>-communication protocols</p> <p>-Learner leads patient-centered care team</p> <p>-Delivery of educational content for EMS providers</p> <p>-Ambulance and Provider Safety</p>	<p>- Residents will operate as a member of the prehospital team by assisting the EMS providers during ground-unit ambulance transports</p> <p>-Learners will operate as on-scene medical directors providing direct medical command during ground-unit transports</p> <p>- Residents will develop and present educational didactics for prehospital providers</p>	PGY-3	<p>30 minutes (lecture)</p> <p>Instructors: 1</p> <p>Equipment: PowerPoint (and projector/screen)</p> <p>Four 12-hour observational EMS Ride-along shifts with ground transport ambulance</p> <p>EMS Medical Command Shifts</p> <p>8 Hours in ED</p> <p>1 Instructor</p> <p>EMS Dispatch</p> <p>6-hour observation with Emergency Medical Dispatcher</p> <p>Small Group Discussion:</p> <p>Instructors: 1</p> <p>Materials: (see structured discussion worksheet)</p> <p>EMS Provider Teaching Session:</p> <p>Instructors: 1</p> <p>Equipment: PowerPoint (and projector/screen)</p>	<p>Milestone: ICS2</p> <p>Assessment:</p> <p>Learner-Led Teaching Presentation Evaluation</p>



DIDACTICS AND HANDS-ON CURRICULUM

Small Group Discussion Emergency Medical Services (EMS) System Design and Quality Measures

Instructions for Learners: Meet with EMS Rotation Faculty to discuss the clinical experience including EMS ride-along patient log and 9-1-1 Call Center observation shifts. Focus will be on system design and quality measures. Complete assigned reading material on EMS system development, quality measures, and be familiar with local EMS protocols. Bring completed patient log sheets, be ready to discuss your clinical experience and topics related to EMS Systems.

Instructions for Faculty: Use the following case examples to lead a structured small group discussion focusing on EMS system design.

Case 1: A 57-year-old male with past medical history of hypertension (HTN) and coronary artery disease calls 9-1-1 with chief complaint of chest pain. EMS is activated and arrives on-scene to find a male patient in moderate distress complaining of shortness of breath and chest pain. Vitals are obtained, with hypertension noted (180 systolic), heart rate (HR) 78, oxygen saturation 91% on room air. 12-lead electrocardiogram (ECG) is obtained showing “Acute Myocardial Infarction” with ST-elevation noted by paramedic providers. Intravenous (IV) access is established, aspirin and nitroglycerin sublingual spray given. EMS transport is initiated to emergency department (ED).

Discussion Questions/Answers:

1. What medical protocols are in-place locally for this specific case?
 - a. *Review EMS ST-elevation myocardial infarction (STEMI) protocol, emphasize importance of indirect medical control concepts.*
2. What role does EMS system design play in the care of this patient?
 - a. *Review field STEMI activation criteria locally and emphasize importance of transport destination decision (cardiac catheter capable facility vs non-capable facility).*
3. What are the potential pitfalls if proper EMS system designs are not in place?
 - a. *Discuss importance of patient centered care and potential for delay to definitive treatment.*
4. Who are the major stakeholders that should be involved in EMS System design for this case?
 - a. *Emphasize team approach between EMS agencies, hospitals (cardiology/STEMI coordinators), dispatch, flight programs.*
5. What is the EMS medical director’s role in system design for this case?
 - a. *Advocating for protocols/procedures to ensure highest quality medical care is delivered. Lead quality assurance (QA) efforts to review STEMI cases.*
6. How would you define and measure quality for this case?



DIDACTICS AND HANDS-ON CURRICULUM

- a. *Review figures 72.2 and 72.3, page 513 from NAEMSP Chapter 72 (vol. 1). Discuss QA measures and local EMS QA system design.*

Case 2: A 71-year-old female patient with past medical history of myocardial infarction (MI), HTN and diabetes mellitus type 2 is found to have right sided arm and leg weakness. Family called 9-1-1 after noticing these acute changes. Patient was last seen normal by family two hours prior to EMS arrival. EMS notes profound unilateral neuro deficits. Glucose normal. Vitals stable. ECG shows normal sinus rhythm. Patient alert and responsive. EMS transport is initiated to ED.

Discussion Questions/Answers:

1. What medical protocols are in-place locally for this specific case?
 - a. *Review EMS stroke protocol, emphasize importance of indirect medical control concepts*
2. What role does EMS System design play in the care of this patient?
 - a. *Review field Stroke activation criteria locally and emphasize importance of transport destination decision (stroke center vs. non-stroke hospital).*
3. What are the potential pitfalls if proper EMS system designs are not in place?
 - a. *Discuss importance of patient centered care and potential for delay to definitive treatment.*
4. Who are the major stakeholders that should be involved in EMS System design for this case?
 - a. *Emphasize team approach between EMS agencies, hospitals (neurology/stroke coordinators), dispatch, flight programs.*
5. What is the EMS medical director's role in system design for this case?
 - a. *Advocating for protocols/procedures to ensure highest quality medical care is delivered. Lead QA efforts to review stroke cases.*
6. How would you define and measure quality for this case?
 - a. *Discuss QA measures and local EMS QA system design. Open discussion.*

Case 3: A 31-year-old male patient, previously healthy, is involved in a motorcycle accident at highway speeds. EMS is called by bystanders. EMS providers arrive to find the patient unresponsive. He has a pulse and is found to be breathing spontaneously. Spinal precautions and airway management initiated. EMS transport is initiated to ED.

Discussion Questions/Answers:

1. What medical protocols are in-place locally for this specific case?
 - a. *Review EMS trauma protocols, emphasize importance of indirect medical control concepts.*
2. What role does EMS System design play in the care of this patient?
 - a. *Review field Trauma criteria locally and emphasize importance of transport destination decision (trauma center vs. non-trauma hospital).*
3. What are the potential pitfalls if proper EMS System designs are not in place?
 - a. *Discuss importance of patient centered care and potential for delay to definitive treatment.*
4. Who are the major stakeholders that should be involved in EMS System design for this case?



DIDACTICS AND HANDS-ON CURRICULUM

- a. *Emphasize team approach between EMS agencies, hospitals (trauma surgery/trauma coordinators), dispatch, flight programs.*
5. What is the EMS Medical Director's role in system design for this case?
 - a. *Advocating for protocols/procedures to ensure highest quality medical care is delivered. Lead QA efforts to review trauma cases.*
6. How would you define and measure quality for this case?
 - a. *Discuss QA measures and local EMS QA system design. Open discussion.*

Case 4: Have learner pick one patient encounter from his/her patient log. Have Learner present case.

Discussion Questions/Answers:

1. What medical protocols are in-place locally for this specific case?
 - a. *Review appropriate EMS protocol, emphasize importance of indirect medical control concepts.*
2. What role does EMS System design play in the care of this patient?
 - a. *Review importance of system design elements related to specific case.*
3. What are the potential pitfalls if proper EMS System designs are not in place?
 - a. *Discuss importance of patient centered care.*
4. Who are the major stakeholders that should be involved in EMS system design for this case?
 - a. *Emphasize team approach between EMS agencies, hospitals, dispatch, flight programs, etc.*
5. What is the EMS medical director's role in system design for this case?
 - a. *Advocating for protocols/procedures to ensure highest quality medical care is delivered.*
6. How would you define and measure quality for this case?
 - a. *Discuss QA measures and local EMS QA system design. Open discussion.*



Rotation Learner Packet

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- VI. EMS Medical Command Shift Outline
- VII. Evaluation Rubric Card
- VIII. Patient Log
- IX. Attendance Sheet



DIDACTICS AND HANDS-ON CURRICULUM

I. Rotation Objectives and Requirements

OBJECTIVES

By the end of this session:

1. Learners will demonstrate understanding of the key principles of systems based practice of Emergency Medical Services
 - a. Residents will be able to identify the different levels of services and explain the differences in their scope of practice
 - b. Residents will be able to describe indirect medical control principles
 - c. Residents will be able to describe the communication structure within the prehospital system including EMS dispatch and communication protocols
 - d. Residents will be able to define quality assurance measures for EMS
2. Residents will gain observational experience with ground EMS ambulance transports
3. Residents will refine skills providing direct medical command during supervised medical command shifts
4. Residents will be able to describe the fundamentals of Disaster Management and Emergency Preparedness
5. Residents will develop and present educational didactics for prehospital providers

ROTATION REQUIREMENTS

Description of Clinical Experiences:

- A. **Four (12-Hour) EMS ride-along observer shifts.** Each shift will be 12 hours in length and the resident will be assigned to a ground EMS transport ambulance unit as a field observer. Keep a **patient log** (without patient identifiers) and **attendance sheet** during each shift to be turned in following each shift. (see attachments)
- B. **One (6 hour) 9-1-1 Dispatch Observation shift.** This is a unique opportunity that allows the resident to gain understanding of a Public-Safety Answering Point (PSAP) center and directly observe the process by which Emergency Medical Dispatch (EMD) operates. This includes real-time observation of EMD protocols and best practices.
- C. **Two (8 hour) EMS Medical Command Shifts in the Emergency Department.** The resident will be required to be familiar with the standing EMS protocols and basic radio etiquette techniques. While on these shifts the resident should have a primary focus on prehospital care, without the expectation to become heavily involved in ED patient care responsibilities. When not actively engaged in direct medical command, dedicated time should be spent practicing EMS skills such as intravenous line placement and 12-lead ECG placement under the direct supervision of EM faculty.



DIDACTICS AND HANDS-ON CURRICULUM

Description of Didactic, Small Group & Asynchronous Requirements:

- A. Attend **Introductory Didactic Session**.
- B. Complete the **required reading** material. The reading materials will be made available at the start of the rotation. (see attachment)
- C. A **Small Group Discussion** lead by faculty will be scheduled. The focus will be EMS System Design and Quality Measures. Please bring a completed patient log, complete the assigned corresponding reading, and be prepared to discuss.
- D. Each resident will develop and present a 60-minute **EMS Provider Teaching Session** on a specific medical topic. The topics, times and dates will be coordinated in advance with the course director. Please see list of teaching topics. (see attachment)
- E. Take and pass the National Incident Management System (NIMS) 100 and 700 online training modules offered by the Federal Emergency Management Agency (FEMA). These offer an overview of universal incident command structure and principles used in **EMS and Disaster Medicine/Preparedness**. These are federally sponsored courses and are free of charge. Course websites listed below:

IS-100 – Introduction to Incident Command System

<https://emilms.fema.gov/IS100b/index.htm>

IS-700 – National Incident Management Systems (NIMS)

<https://emilms.fema.gov/is700anew/index.htm>

- F. Attend at least one **EMS administrative meeting** (2-4 hours) with the EMS Medical Director(s). This may include a local, county, region, state or agency specific EMS meeting.
- G. **Multi-Casualty Incident Drill**. Attend one of the five hospital-wide drills that are scheduled throughout each year as part of hospital accreditation annual requirements. This component may occur asynchronous to the assigned rotation time-frame given that these drills do not occur every month.

ROTATION POLICIES

Attendance

Please print the **EMS Rotation Attendance Sheet** to be signed during each of the clinical experiences. This must be turned into the Rotation Director at the duration of your rotation. (see attachment)



DIDACTICS AND HANDS-ON CURRICULUM

Dress Code

Professional dress code will be expected while performing this rotation. This includes closed toed shoes, long pants, and polo-style shirt.

Duty Hours

All ACGME duty hour regulations are to be maintained. All activities and work hours are to be logged in accordance with the residency program/ACGME requirements.

Remediation

If any of these objectives are not met, this will result in a meeting with the rotation director for development of an individual remediation plan.

Evaluation

Mid-rotation and end-of-rotation evaluations will be completed by the rotation faculty director and reviewed with the resident. The resident will also be evaluated during each of the EMS experiences, including ride-alongs, Medical Command Shifts, and the EMS Provider teaching session. (see evaluation rubric attachments)



DIDACTICS AND HANDS-ON CURRICULUM

II. Sample Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1					
	Orientation & Introduction Lecture w/ Faculty	EMS Ride-along: 7a-7p	9-1-1 Call Center Observation shift: 9a-3p	EMS Ride-along: 7a-7p	Asynchronous learning: Online Modules
Week 2					
	Medical Command Shift 7a-3p	EMS Ride-along: 7a-7p	Medical Command Shift 7a-3p	Teaching Session Prep	EMS Ride-along: 7a-7p
Week 3					
	Mid-Rotation Feedback w/ Faculty	Asynchronous learning: Reading Material	Small Group Discussion w/ Faculty	Teaching Session Prep	Teaching Session Prep
Week 4					
	EMS Admin Meeting: Local EMS Meeting w/ Faculty	EMS Provider Teaching Session	Asynchronous learning: Reading Material	Asynchronous learning: Reading Material	Exit Interview & Feedback w/ Faculty



DIDACTICS AND HANDS-ON CURRICULUM

III. Reading List

The following reading material will be made available at the start of the rotation:

1. Tintinalli Textbook¹:

Chapter 1: Emergency Medical Services

2. Emergency Medical Services Textbook²:

Volume 1:

Chapter 1: History of EMS

Chapter 72: Defining, measuring, and improving quality

Volume 2:

Chapter 1: Principles of EMS system designs

Chapter 2: Air medical services

Chapter 8: Medical oversight of EMS systems

Chapter 10: EMS dispatch

Chapter 28: Disaster preparedness and management

Chapter 35: Medical Support for Hazardous Materials

3. Additional (optional) Reading:

Volume 2²:

Chapter 37: Radiation & Radiation Injury

Chapter 39: Tactical EMS

Textbook References (see Curriculum Submission Form for chapter citations):

1. Tintinalli J, Stapczynski S, Ma OJ, Yealy D, Meckler G, Cline D, eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide*. 8th edition. McGraw-Hill; 2015.
2. Cone D, Brice J, Delbridge T, Myers JB, eds. *Emergency Medical Services: Clinical Practice and Systems Oversight*. 2nd edition. Wiley; 2015.



DIDACTICS AND HANDS-ON CURRICULUM

IV. EMS Provider Teaching Session Topics

Airway/Respiration/Ventilation:

- Ventilation
- Capnography
- Oxygenation

Cardiovascular:

- Post-Resuscitation Care
- Ventricular Assist Devices
- Stroke
- Cardiac Arrest
- Pediatric Cardiac Arrest
- Congestive Heart Failure
- Acute Coronary Syndrome

Trauma:

- Trauma Triage
- Central Nervous System (CNS) Injury
- Fluid Resuscitation

Medical:

- Special Healthcare Needs
- OB Emergencies
- Infectious Diseases
- Medication Delivery
- Pain Management
- Psychiatric and Behavioral Emergencies
- Toxicological Emergencies – Opioids
- Neurological Emergencies – Seizures
- Endocrine Emergencies – Diabetes
- Immunological Emergencies

Operations:

- At-Risk Populations
- Ambulance Safety
- Field Triage—Disasters/MCIs
- EMS Provider Hygiene, Safety, and Vaccinations
- EMS Culture of Safety
- Pediatric Transport
- Crew Resource Management
- EMS Research
- Evidence Based Guidelines



DIDACTICS AND HANDS-ON CURRICULUM

V. EMS Provider Teaching Session Evaluation

Resident Name: _____

Overview: Topic should be discussed and approved in advance with instructor. Presentation should be 45-60 minutes in length.

Rubric (out of 100 possible points)

Elements	Poor	Average	Good	Excellent	Value
Main elements	Presentation lacks the main elements and requirements (0-10 Points)	Presentation includes some of the main elements and requirements (10-20 Points)	Presentation includes most of the main elements and requirements (20-30 Points)	Presentation includes all of the main elements and requirements (30-40 Points)	40 Points
Analysis	Fails to analyze the main elements (0-10 Points)	Attempts to analyze the main elements (10-20 Points)	_____ Analyzes the main elements (20-30 Points)	Provides an in-depth analysis of the main elements (30-40 Points)	40 Points
Mechanics	Major errors related to organization, grammar, and style (0-5 Points)	Some errors related to organization, grammar, and style (5-10 Points)	Minor errors related to organization, grammar, and style (10-15 Points)	No errors related to organization, grammar, and style (15-20 Points)	20 Points
				Total Earned (out of 100 points)	
Comments				% Grade on Assignment	



DIDACTICS AND HANDS-ON CURRICULUM

VI. EMS Medical Command Shift Outline

Duration: 8 hours

Location: Emergency Department

Supervising Faculty: EM Faculty Physician on-duty

Objectives:

1. Residents will refine skills providing direct medical command during supervised medical command shifts
2. Residents will refine EMS skills and procedures in a supervised environment

Pre-requisites:

1. Complete corresponding required reading material
2. Review and demonstrate knowledge in local EMS protocols (indirect medical control)

Description:

The resident will be required to be familiar with the standing EMS protocols and basic radio etiquette techniques. While on these shifts the resident should have a primary focus on prehospital care, without the expectation to become heavily involved in ED patient care responsibilities. When not actively engaged in direct medical command, dedicated time should be spent practicing EMS skills such as intravenous line placement and 12-lead ECG placement under the direct supervision of EM faculty.

Evaluation:

Please provide the supervising faculty with an Evaluation Rubric Card.



DIDACTICS AND HANDS-ON CURRICULUM

VII. Evaluation Rubric Card

(EMS Ride-Along, 9-1-1 Communication Center Observation Shift & EMS Command/Skills Shift)

Resident Name: _____

Critical Elements	Poor	Average	Good	Excellent
Professionalism	The resident consistently demonstrated a pattern of unprofessional behavior	The resident at times demonstrated unprofessional behavior during the shift including tardiness and/or inappropriate dress	The resident demonstrated professionalism during the shift including timeliness and appropriate dress	The resident consistently demonstrated throughout the shift exemplary professionalism with all staff including timeliness and appropriate dress
Engagement	The resident was not engaged during the shift	The resident was engaged some of the time but did not ask appropriate questions	The resident was engaged for most activities and occasionally asked appropriate questions	The resident was engaged in all activities and asked thoughtful and inquisitive questions
Communication	The resident consistently exhibited poor communications with staff	The resident at times exhibited poor communications with staff	The resident regularly demonstrated good communication skills with staff	The resident consistently demonstrated excellent communication skills with all staff
Comments				



DIDACTICS AND HANDS-ON CURRICULUM

VIII. Patient Log

Resident Name: _____

#	Chief Complaint	Protocol Indicated	Patient Transported to ED?	Direct Medical Control Orders Needed?
ex	Chest Pain	Adult - Chest pain	Yes	No
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				



DIDACTICS AND HANDS-ON CURRICULUM

IX. Attendance Sheet

Resident Name: _____

Ride Along shifts (Four 12-hour Shifts Required)

Date / shift time	EMS service / Unit #	EMS Crew Chief (print name)	EMS Crew Chief (signature)

Dispatch Observation (One 4-hour shift required)

Date / observation time	Dispatcher (print name)	Dispatcher Signature