



# Integrated EMS Curriculum for a Three-year Emergency Medicine Residency Program: Year One

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## Background

The Accreditation Council for Graduate Medical Education (ACGME) requires that an Emergency Medicine (EM) resident graduate with “experience in Emergency Medical Services (EMS), emergency preparedness and disaster management”. They note that this experience “should include ground unit runs and direct medical oversight” as well as “participation in multi-casualty incident drills”. When queried, curricula for a one-month EMS elective were found, but none for the specific model of a curriculum integrated over an entire three-year EM residency program. Maine Medical Center has a three-year EM residency program with an integrated EMS curriculum, developed by its Division of EMS, which met ACGME requirements. However, it is unclear if this curriculum is meeting the needs of the graduating residents as they enter practice or the needs of the EMS community.

## Objective

The purpose of this project was to review and revise Maine Medical Center’s three-year integrated EM residency EMS curriculum to meet the needs of the graduating residents, the EMS community as well as satisfy the ACGME requirements.



This project is part of the CAPSTONE project for the National Association of EMS Physicians/National Association of EMS Educators *EMS Educator Course*.

Conflict of Interest Disclosure: None  
Funding Source Disclosure: None

## Methods

A needs assessment was performed via surveys (Qualtrics<sup>®</sup><sup>XM</sup>) distributed electronically to our residency graduates (Classes 2016-2021) as well as the leadership from EMS services that routinely transport patients to our emergency department (n=50, with 43 responses). A gap analysis was then performed looking at our current curriculum and where there were unmet needs identified by the two groups, while still meeting the ACGME requirements. The results were collated into broad categories and utilized to revise the curriculum.

## Results

The table below represents the current three-year EMS curriculum. This is completed in the form of didactic lectures, checklists, meetings with EMS faculty as well as serving as an Assistant Medical Director for an assigned EMS service throughout all three years of residency.

| Current Curriculum  | PGY-1   | PGY-2  | PGY-3   |
|---|---|--|---|
| Lectures provided by EMS faculty <ul style="list-style-type: none"><li>Online Medical Control</li><li>Medical Direction</li><li>Protocols &amp; Protocol Development</li><li>QA/QI</li><li>Disaster/MCIs</li><li>Tactical EMS</li><li>Physician Field Response</li><li>Austere Medicine</li></ul> | ED/EMS month <ul style="list-style-type: none"><li>Assigned to EMS service as an Assistant Medical Director (with a Faculty Medical Director)</li><li>Ride time x 4</li><li>State EMS Protocol Review</li><li>Checklist of procedures to perform in the field</li><li>Tour City of Portland assets</li><li>LifeFlight of Maine shift(s) optional throughout residency</li></ul> | No dedicated EMS time <ul style="list-style-type: none"><li>Deliver 2 case-based lectures to EMS service</li><li>Maine EMS Medical Director Guidebook review</li><li>Review 1 Maine EMS protocol</li><li>Perform online medical control when they are the senior EM resident on overnight ED shifts, carries over to PGY-3 year.</li></ul> | EMS/Admin month <ul style="list-style-type: none"><li>Department, Regional &amp; State EMS Meetings</li><li>Airway Quality Improvement</li><li>Portland Fire Dept. homeless outreach shift</li><li>Maine EMS evidence-based protocol review</li><li>Deliver 2 case-based lectures to EMS service</li><li>Portland Fire Department Car 9 (fly-car) shift x 2; perform on-scene medical direction</li></ul> |

The next table represents results of the survey along with the ACGME requirements. From this, the gap analysis was created and the learning objectives were revised for the curriculum, starting with the PGY-1 year.

| EM Residency Graduates   | EMS Leadership   | ACGME  |
|--|--|--|
| <ul style="list-style-type: none"><li>ICS</li><li>EMS protocols</li><li>Scope of practice</li><li>Relationships with EMS</li><li>Communication (online medical control/hand-off)</li><li>QA</li><li>Field exposure</li><li>Interfacility transfer medicine (IFT)/protocols</li><li>More rural exposure</li></ul> | <ul style="list-style-type: none"><li>License Levels/education</li><li>Scope</li><li>Protocols</li><li>Spend more time in field – appreciate the dynamic environment; limited equipment, operational challenges</li><li>Value of EMS</li><li>Role of critical access hospitals and IFT</li><li>QA/QI /feedback</li></ul> | <ul style="list-style-type: none"><li>Experience in EMS, emergency preparedness and Disaster management<ul style="list-style-type: none"><li>Must include ground unit runs and should include direct medical oversight</li></ul></li><li>Include participation in multi-casualty incident drills</li></ul> |

## Learning Objectives for PGY-1 Year

### The Role of the EMS Clinician

- Name the four levels of EMS clinicians
- Differentiate the education requirements for each level of EMS clinician including didactic & clinical hours and content
- Recognize that the MEMS protocols account for the levels of clinicians and their scopes of practice
- Appreciate the knowledge and skills that each provider contributes to the EMS system. Relate that knowledge to the educational requirements, time in the field and various practice environments in which clinicians have practiced\*
- Understand that there is a National Scope of Practice document\*

### EMS Protocols

- Download the Maine EMS (MEMS) protocol application and formulary
- Familiarize yourself with the MEMS protocols and formulary\*

### Medical Control

- Describe the role of online medical control and reasons for utilization

### Quality Improvement

- Discuss the purpose of a Quality Improvement program at the EMS service level.

### Field Experience

- Complete the shift equipment checklist with your EMS service
- Demonstrate the ability to perform prehospital skills (patient assessments, spinal stabilization, splinting, cardiac monitoring, CPAP, IVs/IOs)
- Appreciate the dynamic environment in which EMS clinicians operate\*

\* Will carry over into PGY2/PGY3 year(s)

### Field Experience (cont.)

- Appreciate the limited resources that EMS clinicians have\*
- Demonstrate the safe practice of care in the prehospital environment (scene safety, clinician and patient safety)

### MCI

- Complete FEMA ICS-100 course
- Review the MCI plan for your EMS service
- Participate in an MCI drill\* (e.g., airport, school, hospital)

\* Will carry over into PGY2/PGY3 year(s)

## Implementation

Implementation will occur over the next academic year for the PGY-1 residents via a variety of methods, including in-person didactics, field experiences, online educational experiences, participation in education projects with PGY-2 & PGY-3 residents as well as regular meetings with EMS faculty mentors and an exit interview. Feedback from the residents, EMS services, EMS faculty and residency leadership will be solicited via the online survey tool.

## Discussion

The initial goal of this project was to revise the entire three-year residency EMS curriculum. However, it became clear during the *EMS Educator Course* that revising all three years was beyond the scope of this CAPSTONE project. The revision process has begun for the PGY-2 & PGY-3 years, but will not be implemented until the PGY-1s complete their revised curriculum as this is longitudinal experience. In general, the residents will have more responsibilities as they progress with the following goals: 1) EM residents develop a better understanding and appreciation of the EMS System and its role in the delivery of quality care to our patients and communities, 2) residents’ educational needs are met, and 3) the EMS community will be better served now and in the future by our residency graduates.