



University of Calgary – Emergency Medical Services (EMS) Certificate Program

EMS Certificate Program Requirements:

Emergency Medicine trainees undertaking EMS subspecialty training during their PGY4 year are required to meet the following criteria in order to qualify for the University of Calgary certificate of training in Prehospital care.

1. EMS Core Education - Course Work & Workshops (250 hours)

Completion of a minimum of 250 hours of Emergency Medical Services-related education.

The following course work is mandatory for completion of the program (100 hours):

- a. National EMS Medical Directors Course and Practicum (40 hours).
- b. Hazmat Life Support (or equivalent, such as CBRN First Response Training)
 - i. Online Basic Hazmat Life Support (10 hours)
 - ii. Advanced Hazmat Life Support (20 hours)
- c. Incident Command Systems
 - i. ICS100 Introduction to Incident Command Systems (10 hours)
 - ii. ICS200 Basic Incident Command Systems (20 hours)

An additional 100 hours of formalized course work must be completed over the course of the training year. Course selection is at the discretion of the trainee, and subject to approval by the program director. Options include, but are not limited to:

- a. Incident Command Systems
 - i. ICS300 Intermediate Incident Command Systems
 - ii. ICS400 Advanced Incident Command System
- b. Disaster Management Course – Asian Disaster Preparedness Centre (120 hours)
- c. Physician Leadership Courses – Physician Management Institute, Canadian Medical Association
- d. Wilderness Medicine Advanced Life Support (40 hours)
- e. Disaster Life Support
 - i. Basic Disaster Life Support
 - ii. Core Disaster Life Support
 - iii. Advanced Disaster Life Support

An additional 50 hours of self-study in the core content of emergency medical services is required (see course objectives for content details and examples)

2. Administrative Responsibilities

The trainee must complete a minimum of 50 hours of administrative work, either sitting as an active member in committee or completing supportive reports for the same.



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FRCPC and CCFP-EM Residency Program

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- a. The trainee will sit as an active member at the Calgary Zone EMS Directors Meeting
- b. The trainee will sit as an active member on two additional administrative committees including but not limited to:
 - i. AHS Provincial EMS Medical Directors Committee
 - ii. AHS Provincial Leadership Team Committee
 - iii. Calgary Zone Quality and Patient Safety Committee
 - iv. Calgary Emergency Department Disaster Management Committee

3. Educational Responsibilities

The trainee is responsible for both paramedic and resident education during their certificate training year. A minimum of 40 hours should be spent developing and presenting formalized educational content.

- a. The trainee must present a case study or core educational topic at the annual Calgary Zone EMS Education Symposium
- b. The trainee must develop and present the required academic half day EMS topics for that year for the Emergency Medicine residency program
- c. The trainee must participate in at least 2 days of paramedic SIM education
- d. Additional hours may be earned via content presented through:
 - i. EMS Telehealth rounds
 - ii. Circulated written or online educational modules
 - iii. SIM development
 - iv. Preceptoring EMT-Ps on shift in the Emergency Department

4. Clinical Responsibilities

During the subspecialty training year residents will continue to complete shifts in the emergency department as well as participate in pre-hospital clinical activities. The following are the required clinical responsibilities of the EMS trainee:

- a. Eight Emergency Department shifts per month (Any combination of adult and pediatric is acceptable)
- b. 100 hours of pre-hospital clinical activity
 - i. Truck, fixed or rotary wing, supervisor or clinical educator ride-alongs
 - ii. Online medical direction (as available)
 - iii. Mass gathering events
 - iv. Clinical exercises or responses

5. Research, Administrative or Educational Project

Completion of a formalized research, administrative, educational or quality assurance project in the field of Emergency Medical Services. The work should directly reflect the specialty of



pre-hospital medicine and provide benefit to either national, provincial or municipal emergency medical services organizations or the emergency medicine residency program. The trainee must initiate the project and topics are under the discretion of the program director.

6. Electives

- a. A maximum of **two blocks** elective time of the EMS training year can be substituted with educational features of other pre-hospital programs offered through the University of Calgary (Aero-medical or Disaster Medicine) as long as the hourly work initiative is equivalent and is approved by both program directors.
- b. A maximum of **one block** of elective time can be taken to explore other areas of emergency medicine during the subspecialty training year.

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Fellowship Learning Objectives

The following objectives are a direct reflection of those outlined in MacDonald, R. et al. The Development of a National Emergency Medical Services Curriculum Framework for Physicians in Canada. Prehospital Emergency Care 2008. 12 (3): 372-380

1.0 EMS History

- 1.1 Understand the history of EMS development both locally and nationally

2.0 EMS system design

- 2.1 Describe the interaction between EMS providers and allied professionals in public safety and first response (police, fire)
- 2.2 Understand the components of an EMS system
- 2.3 Discuss different system designs of EMS (single vs multi-tiered, fire based, volunteer, provincial vs. municipal)
- 2.4 Understand local, provincial and federal regulations and legislation that governs EMS scope of practice
- 2.5 Discuss the unique features of regionalized systems
- 2.6 Understand the challenges specific to rural EMS systems
 - 2.6.1 Longer response and transport times
 - 2.6.2 Resource allocation
 - 2.6.3 Education and maintenance of competency

3.0 EMS personnel / scope of practice

- 3.1 Understand the different patient care capabilities and responsibilities of different levels of EMS care providers (EMR, EMT, EMT-P, Critical Care Paramedics,



- Specialty Teams)
- 3.2 Know the local and national requirements for achieving and maintaining certification and licensure for levels of EMS responders
- 3.3 Discuss issues of healthy, safety and personal wellness for EMS providers
 - 3.3.1 Incident stress management
 - 3.3.2 Infection control
 - 3.3.3 Hazardous materials exposure
 - 3.3.4 Scene Safety
 - 3.3.5 Transport Safety
- 3.4 Describe the critical components of Canadian labour relations legislation and disciplinary procedures

4.0 EMS equipment

- 4.1 Know the equipment and drugs available to varying levels of EMS providers and systems
- 4.2 Discuss the function, appropriateness and risks of lights and sirens response
- 4.3 Understand controversies and appropriateness of different medications used in the pre-hospital settings
 - 4.3.1 Evidence based medicine
 - 4.3.2 Efficacy
 - 4.3.3 Relative risks
 - 4.3.4 Medico-legal considerations
 - 4.3.5 Physical limitations on scene
- 4.4 Understand different available emergency vehicles use in EMS
- 4.5 Know the special equipment required for the pre-hospital care of pediatric patients
- 4.6 Understand the local and provincial legislation for evaluating and approving new equipment and medication for varying levels of EMS providers

5.0 Communications/ dispatch

- 5.1 Understand the Medical Priority Dispatch System (MPDS)
- 5.2 Learn the critical components of emergency medical dispatching
 - 5.2.1 Personnel training
 - 5.2.2 Organization structure
 - 5.2.3 Call screening
 - 5.2.4 Priority dispatching
 - 5.2.5 Pre-arrival care
- 5.3 Know the communications equipment available to pre-hospital providers

6.0 Receiving facilities

- 6.1 Discuss local guidelines for transport to specialty centers (destination criteria)
- 6.2 Understand hospital designation for levels of care within Canada



7.0 Medical oversight

- 7.1 Learn local medical oversight and leadership structure
- 7.2 Understand the qualifications and responsibilities of an EMS Medical Director
- 7.3 Understand direct (online) and indirect (offline) medical control
- 7.4 Discuss and participating in the process of protocol development and review
- 7.5 Discuss policies and procedures governing:
 - 7.5.1 Communications and dispatch
 - 7.5.2 Scene Triage
 - 7.5.3 Clinical Care
 - 7.5.4 Transportation
- 7.6 Learn the critical process of quality assurance and improvement processes

8.0 Patient care

- 8.1 Learn the specific concerns and controversies relating to prehospital management of:
 - 8.1.1 Airway management
 - 8.1.2 Chest pain
 - 8.1.3 Spinal immobilization
 - 8.1.4 Cardiac arrest and resuscitation
 - 8.1.5 Field Triage
 - 8.1.6 Pain management
 - 8.1.7 Trauma
 - 8.1.8 Pediatrics
 - 8.1.9 Treat and Release
 - 8.1.10 Obstetrics and Gynecology
 - 8.1.11 Rescue/Extrication
 - 8.1.12 Special Care populations
 - 8.1.13 Bariatric
- 8.2 Discuss the overall effect of EMS on patient outcome
- 8.3 Discuss emerging EMS roles
 - 8.3.1 ED paramedics
 - 8.3.2 Community Paramedics
 - 8.3.3 Specialty Teams

9.0 Air ambulance operations

- 9.1 Discuss the development of fixed and rotary wing air medical transport
- 9.2 Learn the indications, contraindications, advantages and limitations of aeromedical transport vs. ground transport
- 9.3 Understand the physiologic considerations involved in aeromedical transport
- 9.4 Know aircraft safety procedures
- 9.5 Understand how to prepare a patient for air medical transport
- 9.6 Be familiar with the regulations and requirements for operation of an



- aeromedical system
- 9.7 Understand the differences between scene response, modified scene response and inter-hospital transfer

10.0 Mass gathering and disaster medicine

- 10.1 Learn the local disaster and regional response plan, specifically the EMS component and interagency assistance agreements
- 10.2 Learn the incident command structure
- 10.3 Discuss the process and critical components in the development of an EMS and hospital disaster management plan
- 10.4 Discuss special considerations associated with response to hazardous materials incidents
 - 10.4.1 Personal protective equipment
 - 10.4.2 Appropriate hazardous materials scene control
 - 10.4.3 Decontamination, treatment and transport
- 10.5 Learn the planning process for EMS coverage of a mass gathering event

11.0 Medical / legal considerations

- 11.1 Understand the legal responsibilities of different levels of EMS providers
 - 11.1.1 EMS agencies
 - 11.1.2 Prehospital providers
 - 11.1.3 Direct medical control physicians
 - 11.1.4 EMS Medical Directors
- 11.2 Understand and assist in the development for protocols dealing with high risk situations
 - 11.2.1 On scene health care providers
 - 11.2.2 Refusal of Care/Transport
 - 11.2.3 Termination of resuscitation
 - 11.2.4 Advance directives
 - 11.2.5 Incompetent patients
 - 11.2.6 Multiple Casualty Incidents
 - 11.2.7 Pediatric patients and consent
 - 11.2.8 Bypass and ambulance diversion
 - 11.2.9 Patient restraint
- 11.3 Understand the principles of risk management and its use to minimize malpractice exposure

12.0 Community involvement

- 12.1 Understand the importance of public education programs
 - 12.1.1 Public access defibrillation
 - 12.1.2 CPR training
 - 12.1.3 Injury Prevention
- 12.2 Discuss the concept of community care paramedics



13.0 Education

- 13.1 Understand the development of a paramedic training curriculum
- 13.2 Be involved in the training, continued education and evaluation of prehospital care providers
- 13.3 Discuss the accreditation of EMS training programs
- 13.4 Be involved in the use of human patient simulation training
- 13.5 Understand the concepts and differences of certification, licensing, skill acquisition and maintenance

14.0 Research

- 14.1 Understand the challenges of conducting research in an EMS setting
- 14.2 Understand evidence based medicine and the benefits and limitations of its application to prehospital care

15.0 Administration

- 15.1 Understand the budget and funding sources of local and provincial EMS agencies
- 15.2 Understand various components of labour relations
 - 15.2.1 Systems of compensation
 - 15.2.2 Healthy and Safety
 - 15.2.3 Disciplinary Activities
 - 15.2.4 Due Process
 - 15.2.5 Evaluation
- 15.3 Act as a liaison between EMS personnel and medical, nursing, and ancillary hospital staff

References

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