

# International Federation for Emergency Medicine model curriculum for emergency medicine specialists

The Core Curriculum and Education Committee for the International Federation for Emergency Medicine\*

## APPENDIX: EMERGENCY MEDICINE GOALS AND OBJECTIVES FOR TRAINING

### *Postgraduate year 1*

#### *Goals*

The goals of this rotation can be described by the ACGME general competencies:

1. Learn to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health (Patient Care)
2. Learn about established and evolving biomedical, clinical, and cognitive (eg, epidemiologic and sociobehavioural) sciences and the application of this knowledge to patient care (Medical Knowledge)
3. Develop the ability to appraise and assimilate scientific evidence and investigate, evaluate, and improve their patient care practices (Practice-Based Learning and Improvement)
4. Develop interpersonal and communication skills that result in effective information exchange and teaming with patients, patients' families, and professional associates (Interpersonal and Communication Skills)
5. Develop a commitment to carry out professional responsibilities, adhere to ethical principles, and

develop sensitivity to a diverse patient population (Professionalism)

6. Develop an awareness of, and responsiveness to, the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value (Systems-Based Practice)

#### *Objectives*

By the end of their first year, emergency medicine residents will

1. Demonstrate the ability to provide appropriate care to patients with nonemergent problems
  - a. Obtain an accurate and complete clinical and psychosocial history and perform a comprehensive physical examination
  - b. Develop appropriate differential diagnoses
  - c. Know the available investigative and therapeutic options
  - d. After review, implement an appropriate investigative and therapeutic plan
  - e. Develop and, after review, implement an appropriate written and verbal discharge plan
  - f. Demonstrate an awareness of the available information systems to support patient care and discharge planning

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- g. Demonstrate competency (including an understanding of the indications, contraindications, and techniques) in the core procedures used on nonemergent patients (eg, laceration repair, reduction in or immobilization of extremity injury, pelvic examination, slit-lamp examination)
  - h. Demonstrate an understanding of the concepts of disease prevention as it applies to emergency medicine
  - i. Properly document all historical, physical examination, and diagnostic test findings
2. Demonstrate a level-appropriate knowledge of the biochemical, clinical, epidemiologic, and social-behavioural basis of diseases seen in the emergency department
    - a. Demonstrate a basic understanding of the principles of evidence-based medicine
    - b. Demonstrate mastery of minor acute and non-emergent conditions
    - c. Demonstrate mastery of the principles of ACLS and ATLS
    - d. Demonstrate a level-appropriate understanding of the core curriculum
  3. Demonstrate the ability to appraise and assimilate scientific evidence and analyze and improve their own practice
    - a. Demonstrate the ability to critically assess their competency in managing minor acute and non-emergent cases
    - b. Demonstrate the ability to apply published studies to their own practice
    - c. Demonstrate the ability to use available information technology appropriate to the care of their patients
  4. Demonstrate effective interpersonal and communication skills with
    - a. Patients and their families
    - b. Other physicians
    - c. Other health care providers
  5. Demonstrate the professionalism required of a physician
    - a. Accept responsibility for continuity of patient care
    - b. Demonstrate respect for patients' privacy and autonomy
  - c. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities
  - d. Demonstrate a commitment to sound ethical principles regarding the care of patients
  - e. Demonstrate respect for the dignity of patients and colleagues as persons
6. Demonstrate a basic understanding of the role of the emergency department in the larger context of health care delivery
    - a. Demonstrate an understanding of the principles of a cost-benefit analysis
    - b. Know the relative costs of the various tests and treatment contemplated
    - c. Serve as an advocate for the patient in their dealing with the complexities of the health care system, specifically with regard to appropriate referral and follow-up

### *Course description*

The first year emergency medicine rotation is primarily geared toward learning the evaluation and management of minor acute and nonemergent conditions as well as assisting in the management of acute life-threatening conditions.

The resident will see all nonemergent patients in order of triage. After evaluating the patient, the resident will present the patient to the attending physician or senior emergency medicine resident on duty before initiating any diagnostic or therapeutic plans. Given that residents progress at different rates and faculty have different supervisory styles, it is understood that this description may be altered in certain cases at the discretion of the attending physician. All procedures will be done under the direct or indirect supervision of the attending physician on duty.

The resident is responsible for properly documenting all historical, physical examination, and diagnostic test findings and for ensuring that the attending physician has the opportunity to review and discuss the documentation.

First year residents will assist in major trauma cases and cardiac arrests.

Residents on this rotation will

- Perform the number of assigned work shifts each month as directed by the schedule distributed by the program coordinator

- Attend scheduled emergency medicine teaching conferences

### *Evaluation process*

The resident is formally evaluated by the attending faculty on a regular basis, with intervals determined by the program director. This evaluation is based on residents' proficiency in achieving the rotations' objectives as demonstrated by their ability and participation in the following resident functions:

1. Examine patients
2. Present patients to the attending on duty
3. Implement management plan
4. Demonstrate clinical experience gained on the rotation
5. Attend weekly emergency medicine conference
6. Perform noted procedures

### *Feedback mechanisms*

Each emergency medicine resident will perform the evaluation on completion of the rotation and comment specifically on didactic curriculum and training specific to the discipline. Feedback will occur at the prescheduled review, where the resident discusses the experience regarding procedures, teaching, supervision, and overall quality of the rotation. Feedback is also obtained via the mentor/advisee relationships. Immediate feedback is available if potential difficulties with the resident or the rotation are revealed. These will be investigated by the program director.

### *Resources and facilities*

Residents will have access to the electronic and other educational reference materials of the emergency department and of the residency program.

### *Postgraduate year 2*

#### *Goals*

The goals of this rotation can be described by the ACGME general competencies:

1. Learn to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health (Patient Care)
2. Learn about established and evolving biomedical, clinical, and cognitive (eg, epidemiologic and sociobehavioural) sciences and the application of this knowledge to patient care (Medical Knowledge)
3. Develop the ability to appraise and assimilate scientific evidence and investigate, evaluate, and improve their patient care practices (Practice-Based Learning and Improvement)
4. Develop interpersonal and communication skills that result in effective information exchange and teaming with patients, patients' families, and professional associates (Interpersonal and Communication Skills)
5. Develop a commitment to carry out professional responsibilities, adhere to ethical principles, and develop sensitivity to a diverse patient population (Professionalism)
6. Develop an awareness of, and responsiveness to, the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value (Systems-Based Practice)

### *Objectives*

By the end of their second year, residents will, in addition to the objectives achieved during the first year,

1. Demonstrate the ability to provide appropriate care to patients with emergent and life-threatening conditions
  - a. Obtain an appropriately focused history and perform an appropriately focused physical examination
  - b. Develop comprehensive differential diagnoses
  - c. Develop an investigative and therapeutic plan
  - d. Develop and, after review, implement an appropriate written and verbal discharge plan
  - e. Demonstrate competency (including an understanding of the indications, contraindications, and techniques) in the core procedures used on patients with emergent and life-threatening conditions (eg, endotracheal intubation, tube thoracostomy, defibrillation/cardioversion, etc.)
2. Demonstrate a level-appropriate knowledge of the biochemical, clinical, epidemiologic, and social-behavioural basis of diseases seen in the emergency department
  - a. Apply the principles of evidence-based medicine

- b. Demonstrate mastery of the emergent and life-threatening conditions that present to the emergency department
  - c. Demonstrate a level-appropriate understanding of the core curriculum
3. Demonstrate the ability to appraise and assimilate scientific evidence and analyze and improve their own practice
    - a. Demonstrate the ability to critically assess their competency in managing the emergent and life-threatening conditions that present to the emergency department
    - b. Use published studies to improve their own practice
    - c. Use available information technology appropriate to the care of their patients
  4. Demonstrate a level-appropriate understanding of the role of the emergency department in the larger context of health care delivery
    - a. Demonstrate the ability to divide his or her time and energies appropriately to provide optimal care for several patients concurrently
    - b. Develop plans for evaluation and treatment that, without compromising patient care, acknowledge the patient's particular health care system

### *Course description*

The number of months spent in the emergency department during the second year of the residency should be specified by the program director. The second year rotation is primarily geared toward learning the evaluation and management of emergent and life-threatening conditions. The resident will see all emergent patients in order of triage. Nonemergent patients will also be seen if no emergent patients are awaiting evaluation. After evaluating the patient, the resident may order radiographs and basic laboratory tests but must present the patient to the attending physician before ordering any more invasive or expensive tests or initiating major therapeutic interventions. The attending physician must be notified promptly of all unstable patients. Given that residents progress at different rates and faculty have different supervisory styles, it is understood that this description may be altered in certain cases at the discretion of the attending physician. All procedures will be done under the direct or indirect supervision of the attending physician on duty.

The resident is responsible for properly documenting all historical, physical examination, and diagnostic test findings and for ensuring that the attending physician has the opportunity to review and discuss the documentation.

Second year residents will assist in major trauma cases and cardiac arrests. They will run medical resuscitation cases in the absence of a higher level resident.

Second year residents will respond to emergency medical system (EMS) radio calls after having completed the required communications course.

Residents on this rotation will

- Perform the number of assigned work shifts each month as directed by the schedule distributed by the program coordinator
- Attend emergency medicine teaching conferences

### *Evaluation process*

The resident is formally evaluated by the attending faculty on a regular basis. This evaluation is based on residents' proficiency in achieving the rotations' objectives as demonstrated by their ability and participation in the following resident functions:

1. Examine patients
2. Present patients to the attending physician on duty
3. Implement a management plan
4. Demonstrate clinical experience gained on the rotation
5. Attend weekly emergency medicine conferences
6. Perform noted procedures

### *Feedback mechanisms*

Each emergency medicine resident will perform the evaluation on completion of the rotation and comment specifically on didactic curriculum and training specific to the discipline. Feedback will occur at the prescheduled review, where the resident discusses the experience regarding procedures, teaching, supervision, and overall quality of the rotation. Feedback is also obtained via the mentor/advisee relationships. Immediate feedback is available if potential difficulties with the resident or the rotation are revealed. These will be investigated by the program director.

### *Resources and facilities*

Residents will have access to all of the electronic and other teaching materials of the emergency department and of the residency program.

**Postgraduate year 3****Goals**

The goals of this rotation can be described by the ACGME general competencies:

1. Learn to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health (Patient Care)
2. Learn about established and evolving biomedical, clinical, and cognitive (eg, epidemiologic and socio-behavioural) sciences and the application of this knowledge to patient care (Medical Knowledge)
3. Develop the ability to appraise and assimilate scientific evidence and investigate, evaluate, and improve their patient care practices (Practice-Based Learning and Improvement)
4. Develop interpersonal and communication skills that result in effective information exchange and teaming with patients, patients' families, and professional associates (Interpersonal and Communication Skills)
5. Develop a commitment to carry out professional responsibilities, adhere to ethical principles, and develop sensitivity to a diverse patient population (Professionalism)
6. Develop an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value (Systems-Based Practice)

**Objectives**

By the end of their third year, residents will, in addition to the objectives achieved during the first 2 years,

1. Demonstrate the ability to provide appropriate care to patients
  - a. Listen to a history and physical examination presentation from a junior resident and provide appropriate feedback and guidance
  - b. Perform an appropriately focused history and physical examination, taking into consideration the previous evaluation of the junior resident
  - c. Implement an appropriate investigative and therapeutic plan
  - d. Implement an appropriate written and verbal discharge plan
  - e. Demonstrate understanding of the indications, contraindications, and techniques in uncommonly

performed but lifesaving procedures (eg, cricothyroidotomy, burr craniotomy) and mastery of all other core procedures

- f. Demonstrate an understanding of documentation as it applies to billing and reimbursement requirements
2. Demonstrate a level-appropriate knowledge of the biochemical, clinical, epidemiologic, and social-behavioural basis of diseases seen in the emergency department
  - a. Demonstrate mastery of all conditions that commonly present to the emergency department
  - b. Teach courses such as ACLS as a certified instructor
  - c. Demonstrate an understanding of the core curriculum
3. Facilitate the learning of others
  - a. Teach and appropriately supervise medical students and junior residents
4. Demonstrate an understanding of the role of the emergency department in the larger context of health care delivery
  - a. Triage patients and direct the attention of junior-level residents so as to provide optimal care for all patients in the emergency department. Plan and participate in a mass-casualty disaster drill

**Course description**

The third year rotation is primarily geared toward honing the clinical skills developed during the first 2 years and developing supervisory and administrative abilities. The resident will see emergent patients in order of triage. Nonemergent patients will also be seen if no emergent patients are awaiting evaluation. After evaluating the patient, the resident may initiate a diagnostic and therapeutic plan but should inform the attending physician promptly of all unstable patients. All patients must be presented to the attending physician prior to final disposition. Given that residents progress at different rates and faculty have different supervisory styles, it is understood that this description may be altered in certain cases at the discretion of the attending physician. All procedures will be done under the direct or indirect supervision of the attending physician on duty.



The resident is responsible for properly documenting all historical, physical examination, and diagnostic test findings and for ensuring that the attending physician has the opportunity to review and discuss the documentation.

Third year residents will run major trauma resuscitations and medical cardiac arrest cases.

Third year residents will respond to EMS radio calls. Residents on this rotation will

- Perform the number of assigned work shifts each month as directed by the schedule distributed by the program coordinator
- Attend emergency medicine conferences
- Provide didactic instruction for the medical students and junior residents as directed by the program director

#### *Evaluation process*

The resident is formally evaluated by the attending faculty on a regular basis. This evaluation is based on the resident's proficiency in achieving the rotations' objectives as demonstrated by his or her ability and participation in the following resident functions:

1. Examine patients
2. Present patients to the attending physician on duty
3. Implement a management plan
4. Demonstrate clinical experience gained on the rotation
5. Attend weekly emergency medicine conference
6. Perform noted procedures
7. Supervise junior residents and medical students
8. Manage multiple patients simultaneously
9. Maintain efficient flow of patients in the emergency department
10. Demonstrate didactic teaching skills
11. Demonstrate the ability to lead teams of health care workers
12. Demonstrate the ability to manage unstable and complex emergency cases

#### *Feedback mechanisms*

Each emergency medicine resident will perform the evaluation on completion of the rotation and comment specifically on didactic curriculum and training specific to the discipline. Feedback will occur at the prescheduled review, where the resident discusses the experience regarding procedures,

teaching, supervision, and overall quality of the rotation. Feedback is also obtained via the mentor/advisee relationships. Immediate feedback is available if potential difficulties with the resident or the rotation are revealed. These will be investigated by the program director.

#### *Resources and facilities*

Residents will have access to all the electronic and other teaching resources of the emergency department and of the residency program.

#### SAMPLE CURRICULUM FORMAT

Objective: To recognize the need for airway control and initiate airway management

##### *Curriculum Year 1*

Readings: basic life support manuals, basic first aid manuals (eg, American Heart Association advanced life support manual or equivalent manuals of the local community)

Performance indicators:

1. Obtain Basic Cardiac Life Support (BCLS), Advanced Cardiac Life Support (ACLS), and Advanced Trauma Life Support (ATLS) certification
2. Describe the anatomic differences between the adult and the pediatric airway
3. Demonstrate successful bag-valve-mask ventilation in adults and children
4. Demonstrate the ability to clear an obstructed airway
5. Demonstrate the application of various noninvasive airway adjuncts
6. Demonstrate an understanding of respiratory physiology in the indications for and the application of noninvasive ventilation

##### *Curriculum Year 2*

Readings: Pathophysiology of respiratory failure, techniques of airway management, introduction to anesthesia—rapid-sequence intubation procedures and pharmacotherapy

Performance indicators:

1. Demonstrate uncomplicated endotracheal intubation
2. List indications for intubation
3. List contraindications for intubation
4. Describe medications used for rapid-sequence intubation
5. Describe the physiology of artificial ventilation

6. Demonstrate an understanding of respiratory physiology in the management of invasive ventilation

*Curriculum Year 3 and/or Higher*

Readings: advanced techniques for airway management, advanced anesthesia practices, including failed airway rescue techniques and surgical airway management

Performance indicators:

1. Demonstrate the application of advanced anesthesia practice in patients requiring airway management

2. Demonstrate the application of various airway rescue techniques to difficult airway management, including laryngeal mask airways, needle jet ventilation, glidescope intubation, digital intubation, and surgical cricothyroidotomy

Outcome measures

At graduation, specialists will demonstrate the ability to manage a basic airway, perform endotracheal intubation in uncomplicated and complicated clinical situations, and clear and ventilate an obstructed airway. This will be assessed by simulation on a mannequin or using direct observation of skills by trained faculty.