

Introduction to Emergency Medicine

Introduction to Emergency Medicine

Key concepts, roles, and foundational knowledge for clinicians and students

1. Definition & Scope

Aspect	Description
Emergency Medicine (EM)	A medical specialty focused on the rapid assessment, diagnosis, and treatment of acute illnesses and injuries that require immediate care.
Primary Goals	- Stabilize life-threatening conditions - Provide definitive or temporizing treatment - Determine need for admission, observation, or discharge
Setting	Emergency Departments (EDs), trauma centers, urgent care clinics, pre-hospital services (ambulances, air medical), disaster sites.

2. Core Principles

Principle	Practical Implication
ABCDE Approach	Systematic primary survey: Airway, Breathing, Circulation, Disability (neurologic status), Exposure/Environment.
Time-Critical Decision-Making	“Golden hour” concept – prioritize interventions that prevent irreversible damage.
Teamwork & Communication	Clear closed-loop communication, role assignment, and rapid handoffs (e.g., SBAR format).
Resuscitation Standards	Follow Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and Trauma Life Support (ATLS) algorithms.
Patient-Centered Care	Respect cultural, linguistic, and psychosocial factors; obtain informed consent when possible.

3. Typical Patient Flow in the ED

- Triage** – Quick assessment (e.g., ESI, CTAS) to assign urgency level.

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2. **Registration & Initial Assessment** – Vital signs, brief history, focused exam.
 3. **Primary Survey (ABCDE)** – Immediate life-saving interventions.
 4. **Secondary Survey** – Detailed history (OPQRST, ROS), full physical exam.
 5. **Diagnostic Workup** – Labs, imaging, point-of-care ultrasound (POCUS).
 6. **Management** – Pharmacologic, procedural, or surgical interventions.
 7. **Disposition** – Admit, observe, transfer, or discharge with follow-up plan.
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4. Common Clinical Categories

Category	Representative Conditions
Cardiovascular	Myocardial infarction, arrhythmias, hypertensive emergencies, cardiac tamponade.
Respiratory	Asthma exacerbation, COPD flare, pulmonary embolism, tension pneumothorax.
Neurologic	Stroke, seizures, traumatic brain injury, meningitis.
Trauma	Blunt/penetrating injuries, polytrauma, burns, orthopedic fractures.
Gastrointestinal	Acute abdomen, GI bleed, pancreatitis, bowel obstruction.
Infectious	Sepsis, meningitis, cellulitis, COVID-19 complications.
Psychiatric	Acute agitation, suicidal ideation, substance intoxication/withdrawal.
Pediatric	Febrile infants, bronchiolitis, dehydration, trauma in children.

5. Essential Skills & Procedures

Skill	When Used	Key Points
Airway Management	Airway compromise	• Rapid sequence intubation (RSI) • Video laryngoscopy • Supraglottic devices
Chest Tube Insertion	Pneumothorax, hemothorax	• Identify intercostal space (4th/5th mid-axillary)