

The African Federation for Emergency Medicine

Emergency Care Curriculum

Keystone Curriculum

General Principles of Emergency Care

- Triage theory and practice
- Initial approach to the unstable adult: ABC, including shock
- Initial approach to the unstable child: ABC, including choking and shock
- Initial approach to the trauma patient: ABC (including immobilisation)
- Approach to cardiopulmonary arrest
- Approach to the paediatric trauma patient
- Clinical reasoning in Emergency Medicine
- Principles of acute care diagnostics
- The emergency care team
- Talking with patients
- Pain management
- General principles of multi-casualty incidents: field and facility-based
- Principles of documentation
- Principles of the patient transfer system
- Handover
- ED differential, preliminary, and final diagnosis
- Introduction to local clinical protocols

Rapid Assessment of Common Life-threatening Complaints in Adults

- Abdominal pain
- Altered mental status and coma



Anaphylaxis and angioedema
Back pain
Burn
Chemical exposure
Chest pain (with sub-section on MI)
Difficulty in breathing (including pulmonary oedema)
Oedema
Emergency delivery
Fever
Headache
Seizure and status epilepticus
Syncope
Weakness (including stroke)
The ischaemic limb (including neurovascular extremity examination)

Rapid Assessment of Common Life-threatening Complaints in Children

Abdominal pain
Altered mental status and coma
Anaphylaxis and angioedema
Apnea
Approach to the crying or irritable child
Dehydration and volume resuscitation
Difficulty in breathing/Approach to respiratory distress in the child
Burn
Neonatal resuscitation
Oedema
Fever
Seizure and status epilepticus
Floppy baby / Weak child

Intro to Emergency Ultrasound

Ultrasound basics

Trauma

Hypotension: function and IVC

Dyspnoea: heart and lung

KEYSTONE SKILLS

Assessing airways patency

Airway repositioning manoeuvres

Approach to choking

C-spine immobilisation

Endotracheal intubation: procedure

Rapid sequence intubation: medications and methods

Cricothyroidotomy and tracheostomy replacement

Basic vascular access: IV, intraosseus

Advanced vascular access: central line, venous cutdown, arterial access

Pericardiocentesis

Defibrillation and cardioversion

ECG and Monitor Basics

Approach to the pulseless patient (basic life support)

Basic XR interpretation: cervical spine

Basic XR interpretation: chest

Basic XR interpretation: pelvis

Basic Ultrasound: dyspnea

Basic Ultrasound: trauma

Basic Ultrasound: hypotension

One-sentence patient summary

Handover

AFEM Emergency Care Curriculum

| BLOCK | DIDACTIC CORE | CORE INTERACTIVE MODULE | EXPANDED INTERACTIVE MODULE |
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*Skills presentations are identified by **BLUE** text

1: CARDIOVASCULAR

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| | <p>I Functional anatomy of the cardiac system, including conduction system Diagnosis of circulatory failure: Physical exam, labs, ultrasound Circulatory resuscitation: Fluids, pressors, and inotropes Introduction to bradyarrhythmias and tachyarrhythmias</p> <p>II Congestive cardiac failure: Acute exacerbation Congenital heart disease Valvular heart disease Peri-myocarditis and endocarditis</p> <p>III Hypertension Ischaemic heart disease: Angina and myocardial infarction Aortic aneurysm and dissection Deep venous thrombosis/Pulmonary embolus</p> <p style="text-align: right;">Skills Block: Cardiovascular system: Physical exam</p> | <p>Bradycardia and tachycardia cases</p> <p>Hypertension cases and acute management Ischaemic limb cases Advanced mitral valve disease Etiologies of cardiomyopathies Cardiac tamponade Essential cardiac pharmacology Self-study ECG cases</p> | <p>Bradycardia and tachycardia cases</p> <p>Hypertension cases and acute management Ischaemic limb cases Advanced mitral valve disease Aetiologies of cardiomyopathies Cardiac tamponade Essential cardiac pharmacology Self-study ECG cases Endomyocardial fibrosis Wide-complex tachycardia Evidence and risk in the treatment of pulmonary embolism Aortic valve disease cases Pulmonary hypertension</p> <p>Cardiovascular system: Physical exam Synchronized cardioversion Thrombolysis for MI and PE Advanced cardiac ultrasound Ultrasound-guided vascular access Pacing Advanced ECG interpretation DVT US Transcutaneous pacing</p> |
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2: DERM/HEME/RHEUM

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| <p>Dermatology (I)</p> | <p>How to describe a skin lesion</p> <p>Differential for types of lesions: Ulcerative, plaque, papular, vesicular, exfoliative (excluding purpura) Treatments for dermatologic conditions: Anti-bacterials, anti-fungals, immune modifiers, mechanical therapies Dermatologic manifestations of systemic disease</p> | <p>Skin lesions in adults</p> <p>Skin lesions in children</p> <p>Approach to breast lesions</p> | <p>Skin lesions in adults</p> <p>Skin lesions in children</p> <p>Approach to breast lesions</p> |

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| <p>Haematology (II)</p> <p>Rheumatology (III)</p> | <p>Life-threatening rashes Purpura Anaemia</p> <p>Sickle cell disease Bleeding disorders Blood products in the ED and transfusion reactions Approach to the inflamed or painful joint Lupus and vasculitides</p> | <p>Disseminated intravascular coagulation Anti-platelet and anti-coagulation agents Emergency complications of malignancies and chemotherapy Controversies in the treatment of sickle cell disease</p> <p>Skills Block: Physical examination: Shoulder Physical examination: Back Physical examination: Knee Arthrocentesis Advanced ultrasound: Joints</p> | <p>Disseminated intravascular coagulation Anti-platelet and anti-coagulation agents Emergency complications of malignancies and chemotherapy Controversies in the treatment of sickle cell disease</p> <p>Physical examination: Shoulder Physical examination: Back Physical examination: Knee Arthrocentesis Advanced ultrasound: Joints</p> |
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3: TRAUMA (6 weeks)

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| <p>I Approach to the trauma patient: Priorities in poly-trauma Special considerations in the paediatric and geriatric trauma patient Approach to the patient with head trauma Facial trauma</p> <p>II Eye trauma Neck trauma Spinal injuries Peripheral vascular injuries</p> <p>III Thoracic trauma Abdominal trauma Pelvic trauma Genitourinary trauma</p> <p>IV Burns and smoke inhalation Drowning Approach to paediatric fractures Non-accidental injury patterns</p> <p>V Upper limb fractures Lower limb fractures Upper extremity dislocations Lower extremity dislocations</p> <p>Skills Block:</p> | <p>Crush syndrome and rhabdomyolysis Abdominal injury cases</p> <p>Thoracic injury cases Hand injury and infection cases Lightning and electrical injuries Aortic injuries Blast injuries Mammalian bites Diagnosis and management of strains and sprains How to describe a fracture</p> <p>Examination of the injured knee Examination of the injured hand Dislocation reduction techniques: Shoulder and elbow Dislocation reduction techniques: Hip and knee</p> | <p>Crush syndrome and rhabdomyolysis Abdominal injury cases</p> <p>Thoracic injury cases Hand injury and infection cases Lightning and electrical injuries Aortic injuries Blast injuries Mammalian bites Diagnosis and management of strains and sprains How to describe a fracture Radiation injuries Wrist fracture Advanced lower limb fracture Strangulation injuries Evidence based volume resuscitation in trauma</p> <p>Examination of the injured knee Examination of the injured hand Dislocation reduction techniques: Shoulder and elbow Dislocation reduction techniques: Hip and knee</p> | |



Dislocation reduction techniques: Ankle, phalanges, other
 Wound management & suturing
 Stabilisation of pelvic fracture
 Splinting
 Escharotomy
 Advanced wound repair
 Burr holes
 XR interpretation: Upper extremity
 XR interpretation: Lower extremity
 XR interpretation: Spine
 XR interpretation: Skull
 CT interpretation: Head trauma

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 XR interpretation: Upper extremity
 XR interpretation: Lower extremity
 XR interpretation: Spine
 XR interpretation: Skull
 CT interpretation: Head trauma
 CT interpretation: Chest trauma
 Ultrasound of fractures and tendon injuries
 Thoracotomy

4: INFECTIOUS DISEASE

| Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| <p>I Approach to the patient with sepsis Malaria Fever in the immunocompromised patient HIV/AIDS emergencies</p> <p>II Age-based evaluation and empiric treatment of the child with fever</p> <p>Approach to the child with skin lesion or rash Meningitis Extra-pulmonary TB</p> <p>III Infectious diarrhoea and complications</p> <p>Parasitic infection of gastrointestinal tract Typhoid and cholera Hepatitis</p> <p>IV Spinal infections Urinary tract infections, including renal and schistosomiasis Soft tissue infection: Cellulitis and abscess Dermatoparasites</p> <p>V Rabies and tetanus Post-infectious inflammatory conditions Rheumatic fever</p> <p>Influenza, SARS and global epidemics Emergency facility response to highly communicable pathogens</p> <p style="text-align: right;">Skills Block:</p> | <p>Adult with fever cases Child with fever cases Malaria diagnostics and treatment guidelines Other childhood viral infections: Varicella, mumps, mononucleosis Septic joint</p> <p>Strep throat National burden of disease Current national vaccination schedule</p> <p>Incision and drainage Recognition of cutaneous infections Ultrasound of skin and soft tissue infections</p> | <p>Adult with fever cases Child with fever cases Malaria diagnostics and treatment guidelines Other childhood viral infections: Varicella, mumps, mononucleosis Septic joint</p> <p>Strep throat National burden of disease Current national vaccination schedule Controversies in the management of sepsis: volume, steroids, EGDT Kawasaki's disease Controversies in the treatment of meningitis Post-exposure prophylaxis in the health care worker Polio and botulism Tick-borne illness Toxic shock syndrome Haemorrhagic fevers Outbreak control Nosocomial infections: Pneumonia, CSF, joints, skin, blood Local anti-microbial resistance patterns and rational antibiotic use National and WHO treatment guidelines</p> <p>Incision and drainage Recognition of cutaneous infections Ultrasound of skin and soft tissue infections Ultrasound for TB and HIV</p> |



5: PAEDS/PSYCH/ HEENT

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| Paediatrics (I) | <p>Foreign bodies in children: Ears, nose, aspiration, and ingestion</p> <p>Approach to the child with abnormal gait or limp</p> <p>Approach to the malnourished child</p> <p>Positive pressure ventilation in the child</p> <p>Common problems in neonates</p> | <p>Special considerations in the paediatric physical examination</p> <p>Paediatric medical resuscitation</p> <p>Paediatric trauma resuscitation</p> <p>Neonatal resuscitation</p> | <p>Special considerations in the paediatric physical examination</p> <p>Paediatric medical resuscitation</p> <p>Paediatric trauma resuscitation</p> <p>Neonatal resuscitation</p> <p>SIDS</p> |
| | Skills Block: | Paediatric vascular access, including umbilical lines | Paediatric vascular access, including umbilical lines |
| Psychiatric Emergencies(II) | <p>Approach to the agitated patient: Acute psychosis and mania</p> <p>Evaluation of the suicidal or homicidal patient</p> <p>Medical clearance of the psychiatric patient</p> <p>Diagnosis and treatment of depression</p> <p>Management of acute anxiety</p> | <p>The psychiatric H&P</p> <p>Physical and pharmacologic restraint cases</p> <p>Management of acute anxiety</p> | <p>The psychiatric H&P</p> <p>Physical and pharmacologic restraint cases</p> <p>Management of acute anxiety</p> <p>Anti-depressant medications</p> <p>Toxicologic syndromes associated with psychiatric medications</p> <p>Somatisation and relationship to depression</p> <p>Medico-legal aspects of psychiatric care</p> <p>Assessing competence</p> |
| HEENT(III) | <p>Life-threatening ENT and oral infections</p> <p>Epistaxis</p> <p>Approach to the patient with stridor (adults and children)</p> <p>Differential diagnosis of head and neck mass (adults and children)</p> <p>Evaluation of the red eye</p> | <p>ENT infections cases (including PTA, RPA, mastoiditis, mediastinitis, sinusitis)</p> <p>Acute visual loss</p> <p>Cavernous sinus thrombosis</p> <p>Acute otitis and its complications</p> <p>Dental pain</p> <p>Dental injuries</p> <p>Salivary gland problems</p> <p>Orbital and peri-orbital cellulitis cases</p> <p>Vertigo: Diagnostic and therapeutic manoeuvres</p> | <p>ENT infections cases (including PTA, RPA, mastoiditis, mediastinitis, sinusitis)</p> <p>Acute visual loss</p> <p>Cavernous sinus thrombosis</p> <p>Acute otitis and its complications</p> <p>Dental pain</p> <p>Dental injuries</p> <p>Salivary gland problems</p> <p>Orbital and peri-orbital cellulitis cases</p> <p>Vertigo: Diagnostic and therapeutic maneuvers</p> <p>Head and neck mass cases</p> <p>Management of nasal and oral bleeding in the setting of mass</p> <p>The changing epidemiology of epiglottitis</p> <p>Glaucoma</p> |
| | Skills Block: | Physical examination of the HEENT system, including fundoscopy | Physical examination of the HEENT system, including fundoscopy |
| | | Dental procedures | Dental procedures |
| | | Nasal packing | Nasal packing |
| | | Incision and drainage of peri-tonsillar abscess | Incision and drainage of peri-tonsillar abscess |
| | | Foreign body removal: pharynx, ear, nose, eye | Foreign body removal: pharynx, ear, nose, eye |

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| | Repair of ear and nose wounds, including septal haematoma Dislocation reduction techniques: TMJ Ocular US | Repair of ear and nose wounds, including septal haematoma Dislocation reduction techniques: TMJ Ocular US Slit lamp examination Advanced airway management Lateral canthotomy |
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6: RESPIRATORY

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| | <p>I Functional anatomy of the respiratory system Acute respiratory failure, including ABG, indications for ventilations Approach to the mechanically ventilated patient Approach to haemoptysis</p> <p>II Pulmonary TB (diagnosis and therapy, including TB med complications) Pneumonia and its complications in adults, including empyema and effusion Pneumonia and other pulmonary infections in children Approach to the child with cough</p> <p>III Approach to the wheezing child Approach to the wheezing adult Nontraumatic pneumothorax Altitude and diving-related illness</p> <p style="text-align: right;">Skills Block:</p> | <p>Ventilation settings: Cases Foreign body aspiration</p> <p>Approach to choking Pleural effusion</p> <p>Physical examination of the pulmonary system XR interpretation: Chest (Advanced) CT interpretation: Chest (non-traumatic) Nebulisation and assessment of peak flow Thoracentesis</p> | <p>Ventilation settings: Cases Foreign body aspiration</p> <p>Approach to choking Pleural effusion Understanding TB diagnostics</p> <p>Altitude and diving cases</p> <p>Physical examination of the pulmonary system XR interpretation: Chest (Advanced) CT interpretation: Chest (non-traumatic) Nebulisation and assessment of peak flow Thoracentesis</p> |

7: GENITOURINARY and METABOLIC

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| | <p>I Urological stone disease Approach to testicular pain STD in men, including complications Approach to the patient with decreased urine output</p> <p>II Acute kidney injury Electrolyte disturbances: Diagnostics and therapeutics Acid-base disorders Hypoglycaemia in adults and in children Diabetic ketoacidosis and other hyperglycaemic conditions in adults Diabetic ketoacidosis in children</p> | <p>Sodium abnormalities Endocrine cases Approach to the acute scrotum Potassium abnormalities Calcium abnormalities</p> | <p>Sodium abnormalities Endocrine cases Approach to the acute scrotum Potassium abnormalities Calcium abnormalities Magnesium abnormalities Penile or vaginal discharge in children Acute indications for dialysis: Cases Chronic kidney disease Goals of care workshop</p> |



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| Thyroid and adrenal disorders Hyperthermia and hypothermia | Skills Block: | <ul style="list-style-type: none"> Interpretation of ABG and VBG ECG changes in metabolic conditions Interpretation of urinalysis: Dip and microscopy Bladder catheterisation, including suprapubic Ultrasound of the bladder Ultrasound of the kidneys | <ul style="list-style-type: none"> Interpretation of ABG and VBG ECG changes in metabolic conditions Interpretation of urinalysis: Dip and microscopy Bladder catheterisation, including suprapubic Ultrasound of the bladder Ultrasound of the kidneys |
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8: OBGYN/TOX

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| OB/GYN (I) | Trauma in pregnancy Pregnancy-related vaginal bleeding (excluding ectopic) | Approach to the non-pregnant patient with pelvic pain Approach to the non-pregnant patient with vaginal bleeding | Approach to the non-pregnant patient with pelvic pain Approach to the non-pregnant patient with vaginal bleeding |
| OB/GYN (II) | Diagnosis and treatment of ectopic pregnancy Eclampsia and hypertensive disorders of pregnancy Infections in pregnancy STD in women, including PID and other complications Evaluation of sexual assault victims | Hyperemesis Ovarian torsion Management of UTI in pregnancy | Hyperemesis Ovarian torsion Management of UTI in pregnancy Hypertensive disorders of pregnancy Comparison of surgical and medical interventions for ectopic pregnancy Foetal monitoring in pregnancy Classification of vulval and labial lesions Special considerations in the exam of sexual assault victims Assessment of foetal viability Drugs to avoid in pregnancy |
| | Skills Block: | <ul style="list-style-type: none"> Physical examination of the pregnant patient Bimanual and speculum exam Emergency delivery: Normal Emergency delivery: Abnormal Ultrasound in first and second-trimester pregnancy Ultrasound in third-trimester pregnancy Adnexal mass: Ultrasound Caesarean section | <ul style="list-style-type: none"> Physical examination of the pregnant patient Bimanual and speculum exam Emergency delivery: Normal Emergency delivery: Abnormal Ultrasound in first and second-trimester pregnancy Ultrasound in third-trimester pregnancy Adnexal mass: Ultrasound Caesarean section |
| Tox (III) | Approach to the patient with suspected toxicologic syndrome Cholinergic and anticholinergic poisoning Sympathomimetics and opioids Corrosive and caustic agents Toxic bites and stings | <ul style="list-style-type: none"> Toxidrome cases Acetaminophen and salicylate overdose Alcohol intoxication and withdrawal Sedative hypnotics: Barbiturates and benzodiazepines GHB (gamma-hydroxybutyrate) Antidotes: Sodium bicarbonate Other antidotes: Naloxone, Flumazenil, chelating agents, Digibind | <ul style="list-style-type: none"> Toxidrome cases Acetaminophen and salicylate overdose Alcohol intoxication and withdrawal Sedative hypnotics: Barbiturates and Benzodiazepines GHB (gamma-hydroxybutyrate) Antidotes: Sodium bicarbonate Other antidotes: Naloxone, Flumazenil, chelating agents, Digibind |



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| | Beta-blockers, calcium channel blockers, digoxin overdose Carbon monoxide Toxic bites and sting cases Organic alcohols Iron and lead poisoning Toxic plants and mushrooms Local rodenticides INH toxicity Quinine toxicity | Beta-blockers, calcium channel blockers, digoxin overdose Carbon monoxide Toxic bites and sting cases Organic alcohols Iron and lead poisoning Toxic plants and mushrooms Local rodenticides INH toxicity Quinine toxicity Methaemoglobinemia Seafood toxins Theophylline and other xanthenes |
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9: NEUROLOGIC

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| | <p>I Functional neuroanatomy, including brain, spine, peripheral and cranial nerves Approach to the patient with weakness Ischaemic stroke syndromes and management Spinal lesions</p> <p>II Dizziness, ataxia, and vertigo Approach to the paediatric neurologic exam Intracranial lesions in children New onset seizure</p> <p>III Syncope Delirium and dementia NMJ and peripheral nerve disorders Principles of analgesia and procedural sedation</p> <p style="text-align: right;">Skills Block:</p> | <p>Cranial nerve palsies</p> <p>Peripheral vs central vertigo Elevated ICP management Stroke cases</p> <p>Headache cases, including subarachnoid Headache in children</p> <p>The neurologic exam Brain death exam Lumbar puncture Interpretation of CSF analysis Regional blocks CT interpretation: Cranial (non-traumatic) Local anaesthetic nerve blocks</p> | <p>Cranial nerve palsies</p> <p>Peripheral vs. central vertigo Elevated ICP management Stroke cases Headache cases, including subarachnoid Headache in children Spinal cord syndromes Localising intracranial lesions based on neurologic exam Localising spinal lesions based on neurologic exam V-P shunt evaluation and care</p> <p>The neurologic exam Brain death exam Lumbar puncture Interpretation of CSF analysis Regional blocks CT interpretation: Cranial (non-traumatic) Local anaesthetic nerve blocks Principles of MRI interpretation</p> |

10: GASTROINTESTINAL

| | Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| | <p>I Approach to the abdominal pain Age-based approach to the child with abdominal pain Approach to the patient with abdominal mass</p> | <p>Mesenteric ischaemia Gallbladder disease Chronic liver disease, cirrhosis and portal hypertension</p> | <p>Mesenteric ischaemia Gallbladder disease Chronic liver disease, cirrhosis and portal hypertension</p> |



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| <p>II Gastrointestinal bleeding Approach to vomiting with and without diarrhoea in adults Approach to vomiting with and without diarrhoea in children Bowel obstruction in adults and children Hernia diagnosis and treatment</p> <p>III Pancreatitis Acute jaundice Appendicitis Peptic ulcer disease</p> | <p>GI bleeding in adults GI bleeding in children Oesophageal emergencies Anal and rectal disorders</p> <p>Skills Block: Physical examination of the GI system Gastric tube placement: NGT, OGT, and GT replacement Paracentesis XR interpretation: Abdomen CT interpretation: Abdomen Understanding hepatitis diagnostics Peritoneal fluid analysis Ultrasound for biliary disease Advanced ultrasound: Abdominal Appendectomy</p> | <p>GI bleeding in adults GI bleeding in children Oesophageal emergencies Anal and rectal disorders Diverticular disease Acute liver failure and hepatitis Inflammatory bowel disease Abdominal pain in the elderly Diagnostic considerations with Ascites and SBP Stuffers and packers GI foreign body cases Isolated emesis cases</p> <p>Physical examination of the GI system Gastric tube placement: NGT, OGT, and GT replacement</p> <p>Paracentesis XR interpretation: Abdomen CT interpretation: Abdomen Understanding hepatitis diagnostics Peritoneal fluid analysis Ultrasound for biliary disease Advanced ultrasound: Abdominal Appendectomy</p> |
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11: OUT-OF-HOSPITAL and DISASTER MEDICINE

| Didactic Core | Core Interactive Module | Expanded Interactive Module |
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| <p>General principles of pre-hospital care General principles of disaster medicine Transfer medicine (including interfacility communication) Mass gatherings</p> | <p>Pre-hospital disaster response Hospital-based disaster response Mechanical and structural collapse</p> | <p>Basic emergency first responder kit Aero-medical services Ethics in disaster response Complex humanitarian emergencies Chemical and biological incidents Recovering from a disaster</p> |