

Curriculum for M.D Emergency Medicine

1. Principles of Emergency Medicine

Definitions and Background

Demonstrate knowledge of the following definitions.

- a) Emergency medicine
- b) Emergency department
- c) Emergency physician

History of Emergency Medicine

- a) Demonstrate knowledge of history of Emergency Medicine.
- b) Demonstrate knowledge of history of emergency medicine in other Countries.

Triage

Demonstrate knowledge of the principles of the following

- a) Definition
- b) Philosophy of triage
- c) Triage Scale
- d) Potential limitations of triage

Epidemiology

Demonstrate knowledge of common patterns of attendances in adults and children to an A/E Department

Patient encounters

- Demonstrate capacity to effectively identify and explore issues in an emergency patient, including patient's view.
- Demonstrates capacity to effectively seek out and integrate relevant information from other sources, such as a patient's family, caregivers and other professionals.
- Demonstrate capacity to effectively deliver information to a patient and family, colleagues and other professionals. In a humane manner and in such a way that it is understandable and culturally appropriate.
- Demonstrate effective clinical problem solving and judgment to address a

- patient's emergency problems, including interpreting available data and
- integrating information to generate differential diagnoses and
- management plans.
- Demonstrate capacity to implement an effective Emergency management
- plan in collaboration with patient and their family.

Community Liaison

Demonstrate knowledge of the principles of liaison between the A/E and the following:

- a) General practice
- b) Community agencies
- c) Disease prevention

Demonstrate knowledge of the principles and practice of disease prevention as it relates to emergency medicine.

Crisis Management

Demonstrate knowledge of how to manage the effects of the following events on patients, their friends and relatives and staff

- a) Deceased patients
- b) Violence
- c) Victim management
- d) Child and elder abuse
 1. Neglect, failure to thrive
 2. Physical abuse
 3. Sexual abuse
 4. Psychological Abuse

2. RESUSCITATION

Airway

- a) Basic airway maintenance techniques
- b) Oxygen delivery systems
- c) Bag mask ventilation
- d) Intubation and rapid sequence induction
- e) Alternative/different airway techniques

- laryngeal mask
 - other
- f) Needle/surgical cricothyroidotomy
- g) Tracheostomy
- h) Tracheal suctioning

Airway Management

- a) Elective intubation
- b) Confirming Endotracheal tube position
- c) Laryngeal mask airway
- d) Capnography
- e) Pulse oximetry
- f) Extubation
- g) Ventilators
- Used in EDs
 - Other
 - Non-invasive ventilation

Life Support

- a) Cardiac arrest
- b) Basic life support
- c) ACLS drugs and algorithms
- d) Defibrillation
- e) Special arrest situations
- Paediatric
 - Trauma M
 - Hypothermia
 - Out-of-hospital

Vital sign measurement

- a) Clinical vital signs (BP, pulse, R & R, temp)
- b) Non-invasive electronic monitoring
- c) Invasive monitoring

Shock

- a) Intravenous fluid composition and therapy
- 1) High volume intravenous infusion techniques

- 2) Auto transfusion
- b) Peripheral venous access
 - 1. Accessing indwelling vascular devices
 - 2. Vascular access techniques in infants & children
- c) Central venous access
 - 1. Subclavian
 - 2. Internal jugular
 - 3. Femoral
 - 4. Cubital
- d) Central venous pressure measurement
- e) Alternative venous access
 - 1. Intraosseus
 - 2. Peripheral venous cut down
- f) Inotropes
- g) Pressors
- h) Arterial puncture and cannulation
- i) Endotracheal drug delivery
- j) MAST suit

Coma

- a) Care of the comatose patient
- b) Brain death

Age-specific differences

Be able to describe the anatomical and physiological differences that might affect resuscitation in the following groups

- a) Neonatal
- b) Infant
- c) Paediatric
- d) Elderly

3. ANAESTHETICS

General Anaesthetic Techniques

- a) Intravenous induction and maintenance agents
- b) Muscle relaxants
 - 1. Depolarising
 - 2. Non-depolarising
- c) Inhalational anaesthetic agents (including nitrous oxide)

- d) Drugs for conscious sedation

Local Anaesthetic Techniques

- a) Local anaesthetic pharmacology and toxicity
- b) Regional nerve blocks
 1. Digital
 2. Wrist
 3. Brachial plexus
 4. Femoral
 5. Facial
 6. Foot
- c) Intravenous regional anaesthesia
- d) Local anaesthetic adjuncts and alternatives

Pain Management

- a) Acute pain management
 1. Methods of delivery
 2. Adjuncts
- b) Chronic pain management
- c) Pain scores

Procedural Analgesia and Sedation

4. MEDICINE

Cardiovascular

1. Clinical examination of the cardiovascular system
2. Interpretation of symptoms and clinical signs of the cardiovascular system
3. Acute coronary syndromes (ACS)
 1. Approach to the patient with chest pain
 2. Prehospital management
 3. Low-risk chest pain
 4. Stable angina
 5. Unstable angina
 6. Myocardial infarction
 7. Right ventricular myocardial infarction
 8. Thrombolysis in myocardial infarction
 9. Left ventricular failure and Cardiogenic shock in the setting of myocardial infarction
 10. Interventional cardiology in acute coronary Syndromes

11. Pharmacological agents used in acute coronary Syndromes
 12. Interpreting the ECG in the setting of acute coronary Syndromes
 13. ST elevation in the absence of myocardial Infarction
 14. An understanding of the major trials in acute coronary syndromes
 15. Current research in ACS
 16. Chest pain pathways
 17. Chest pain units
4. Syncope
 1. Differential diagnosis
 2. Identification of at-risk groups
 3. Management and disposition
 5. Congestive cardiac failure
 6. Valvular disorders
 1. Aortic
 2. Mitral
 3. Tricuspid
 4. Pulmonary
 5. Conditions that are associated with valvular disorders
 7. Disorders of the myocardium
 1. Cardiomyopathy
 2. Aneurysm
 3. Atrial septal defect
 4. Ventricular septal defect
 5. Dextrocardia
 8. Disorders of the pericardium
 1. Acute Pericarditis
 2. Constrictive Pericarditis
 3. Pericardial effusion
 4. Pericardial Tamponade
 5. Pericardiocentesis
 9. Cardiogenic shock
 10. Hypertension
 1. Urgencies
 2. Emergencies
 3. Pharmacological agents used to treat hypertension
 11. Disturbances of cardiac rhythm
 1. Mechanisms of arrhythmias
 2. Bradycardias
 - sinus Bradycardia
 - heart block
 - other bradycardias

3. Tachycardia
 - narrow complex regular
 - narrow complex irregular
 - wide complex regular
 - wide complex irregular
 - Torsade des pointes
 - ventricular fibrillation
4. Ectopy
 - narrow complex
 - wide complex
5. Accessory pathways
 - Wolff-Parkinson-White syndrome
 - other
6. Electrophysiological testing
7. Drugs associated with cardiac arrhythmias
8. Pharmacological agents used to treat arrhythmias
9. International guidelines for the management of arrhythmias
12. Implantable cardiac devices (ICDs)
 1. Implantable pacemakers
 2. Implantable defibrillators
 3. Complications of ICDs
13. External and internal emergent cardiac pacing
14. Disorders of the peripheral vasculature
 1. Deep venous thrombosis
 2. Pulmonary embolism
 3. Mesenteric ischaemia
15. Cardiac transplantation
16. Endocarditis
17. Tumours
18. Congenital heart disease

1. Cyanotic heart disease
19. Rheumatic fever

Respiratory

1. Clinical examination of the respiratory system
2. Interpretation of symptoms and clinical signs of the signs of the respiratory system
3. Respiratory failure
4. Upper airway obstruction
5. Infectious diseases
 1. Croup
 2. Bronchitis
 3. Pneumonia
 4. Empyema
6. Aspiration
7. Acute lung injury/respiratory distress syndrome
8. Asthma
9. Pneumothorax
10. Inter-costal catheter insertion
11. Pneumomediastinum
12. Chronic obstructive pulmonary disease
13. Pleural effusions
14. Needle thoracocentesis
15. Haemoptysis
16. Cavitating lung lesions
17. Isolated "coin" lesions on chest x-ray
18. Disorders of the chest wall
19. Disorders of the mediastinum
20. The respiratory effects of obesity
21. Sleep apnoea
22. Lung transplants
23. Neoplastic disorders
24. Congenital/neonatal
 1. Bronchopulmonary dysplasia
 2. Cystic fibrosis

Gastrointestinal

1. Clinical examination of the gastrointestinal system
2. Interpretation of the symptoms and clinical signs of the gastrointestinal system

3. Gastrointestinal bleeding
 - Indications for urgent Gastroscopy
 - Techniques used with Gastroscopy to control haemorrhage
 - Pharmacological agents used in management toxicological agents
 - Oesophageal varices
 - Balloon Tamponade of Gastro oesophageal varices
 - Peptic ulceration
 - Angiodysplasia of the colon
4. Oesophageal disorders
 - Infectious disorders
 - Oesophagitis
 - Gastroesophageal reflux
 - Motor abnormalities
 - Mallory-Weiss syndrome
 - Stricture and Stenosis
 - Tracheo-oesophageal fistula
 - Neoplastic disorders
5. Peptic ulcer disease and gastritis
6. Feeding tube management
7. Inflammatory bowel disease
8. Irritable bowel syndrome
9. Infectious disorders and gastroenteritis
10. Hepatic disorders
 - Jaundice
 - Interpretation of liver function tests
 - Hepatic failure
 - Hepatitis
 - Other infectious disorders of the liver
 - Vascular disorders
 - Liver transplant patient
 - Alcoholic liver disease
 - Hepato-renal syndrome
 - Portal hypertension
11. Abdominal Paracentesis

Neurological

1. Clinical examination of the neurological system
2. Interpretation of symptoms and clinical signs of the neurological system
3. Disorders of the cranial nerves
 - Facial nerve paralysis

- Other
4. Headache and facial pain
 - Pharmacological agents
 - Indications for imaging (CT, MRI)
 - Migraine
 - Cluster headache
 - Tension headache
 - Raised intracranial pressure
 - Temporal Arteritis
 - Neuralgia
 - TMJ syndrome
 5. Cerebrovascular accident (CVA)
 - Transient ischaemic attacks
 - RINDS
 - Thrombotic CVA
 - Embolic CVA
 - Haemorrhagic CVA
 - Cerebellar CVA
 - Thombolysis in CVA
 - CVA and hypertension
 - Syndromes of CVA
 - Anterior cerebral artery
 - Middle cerebral artery
 - Posterior inferior cerebellar artery syndrome
 - Lacunar syndrome
 - Midbrain, pontine and brainstem syndromes
 - Stroke units
 6. Altered mental state
 - Coma
 - Acute brain syndrome
 - Dementia
 - Memory disorders
 7. Approach to ataxia and gait disturbances
 8. Seizures
 9. Status Epilepticus
 10. Dystonic reactions
 11. Lumbar puncture
 12. Interpretation of CSF fluid biochemistry, cell count and microbiology
 13. Infectious disorders of the CNS and PNS
 - Meningitis
 - Encephalitis

- Abscess
 - Tuberculosis
 - Toxoplasmosis
 - Cryptococcal infection
 - HIV
14. Guillain-Barre syndrome
 15. Multiple sclerosis
 16. Myasthenia gravis & Eaton- Lambert syndrome
 17. Botulism
 18. Diphtheria
 19. Tetanus
 20. Motor neurone disease
 21. Peripheral neuropathy
 22. Disorders of the peripheral nervous system
 - Peripheral nerve lesions
 - Brachial plexus syndrome
 23. Myopathy
 24. Periodic paralysis
 25. Parkinson's disease
 26. Hydrocephalus
 - Complications of the central nervous system devices
 - Disorders of the spinal cord
 - Medical problems in patient with spinal injury
 - Paraneoplastic disorders of the CNS and PNS

Endocrine

- a) Clinical examination of the endocrine system
- b) Interpretation of symptoms and clinical signs of the endocrine system
- c) Hypoglycaemia
- d) Diabetic Ketoacidosis
- e) Diabetic with unstable blood glucose
- f) Alcoholic Ketoacidosis
- g) Hyperosmolar hyperglycaemic nonketotic syndrome
- h) Adrenal disorders
 - Acute adrenal insufficiency (adrenal crisis)
 - Congenital adrenal insufficiency
 - Cushing's disease
 - Conn's syndrome
 - Pheochromocytoma
- i) Thyroid disorders

- Urgencies associated with thyroid disorders
- Thyroid storm
- Hypothyroid crisis
- j) Pituitary disorders
 - Panhypopituitarism
- k) Parathyroid disorders

Haematological

- a) Clinical examination of the haematological system
- b) Interpretation of symptoms and clinical signs of the Haematological system
- c) Interpretation of haematological investigations
- d) Anaemia
- e) Abnormal haemoglobins
- f) Disorders of haemostasis and coagulation
- g) Anticoagulant agents
- h) Antiplatelet agents
- i) Neutropenia
- j) Thrombocytopenia
- k) Thrombocytosis
- l) Disorders of white cells
- m) Myelodysplastic disorders
- n) Paraproteinaemia
- o) Blood transfusion and component therapy
- p) Transfusion reactions

Oncology

1. Clinical examination in patients suspected of having a malignancy
2. Interpretation of symptoms and clinical signs associated with malignancy
3. Complications of chemotherapeutic agents
4. Complications related to local tumour involvement
 1. Acute spinal cord compression
 2. Upper airway obstruction
 3. Malignant pericardial effusion
 4. Superior vena cava syndrome
 5. Pan coast's syndrome
5. Hyperviscosity syndrome
6. Complications related to myelosuppression
 1. Febrile neutropenia
 2. Immunosuppression and opportunistic infections

3. Thrombocytopenia and haemorrhage
7. Malignancies specific to organ systems
8. Paraneoplastic syndromes

Renal

- a) Clinical examination of the renal system
- b) Interpretation of symptoms and clinical signs of the renal system
- c) Pyuria
- d) Interpretation of urine dipstick results
- e) Interpretation of urine microscopy and culture
- f) Infectious disorders
 1. UTI
 2. Prostatitis
 3. Pyelonephritis
 4. Infected obstructed kidney
- g) Acute renal failure
- h) Chronic renal failure
- i) Hyperkalaemia in renal failure
- j) Renal dialysis
 1. Peritoneal
 2. Intermittent haemodialysis
 3. Continual renal replacement therapies
 4. Complications of renal dialysis
- k) Renal transplant
- l) Haemolytic uremic syndrome
- m) Rhabdomyolysis
- n) Polycystic kidney disease

Rheumatology

- a) Clinical examination of the rheumatological system
- b) Interpretation of symptoms and signs of the rheumatological system
- c) Arthrocentesis
- d) Rheumatoid arthritis
- e) Osteoarthritis
- f) Crystal arthropathies
- g) Urgencies and emergencies in systemic rheumatic disease
- h) Thoracic and lumbar pain
- i) Neck pain
- j) Shoulder pain

- k) Tunnel syndromes
 - 1. Carpal tunnel
 - 2. Ulnar tunnel
 - 3. Tarsal tunnel
- l) Complications of drugs used on rheumatic disease

Dermatology

- a) Clinical examination of the dermatology system
- b) Interpretation of symptoms and clinical signs of the dermatological system
- c) Examination and description of a lump, lesion ulcer of the skin, or rash
- d) Dermatitis and eczema
- e) Urticarial and allergic rashes
- f) Viral exanthems
- g) Macular rashes
- h) Maculo-papular lesions
 - 1. Erythema multiforme
 - 2. Erythema nodosum
 - 3. Others
- i) Papular and nodular rashes
- j) Petechial and purpuric rashes
- k) Vesicular and bullous rashes
 - 1. Pemphigus
 - 2. Pemphigoid
 - 3. Staphylococcal scalded skin syndrome
 - 4. Stevens-Johnson syndrome
 - 5. Toxic epidermal necrolysis
 - 6. Herpetic infections
 - 7. Others
- l) Ulceration
- m) Cellulitis
- n) Dermatological manifestations of underlying systemic disease
- o) Dermatological manifestations of neoplastic disorders

Infectious disorders

- a) Clinical examination in patients with infectious disease
- b) Interpretation of symptoms and signs in patients with infectious disease
- c) Blood cultures
- d) Universal and standard precautions
- e) Protection of staff from infectious disease

- f) Isolation of patients with infectious disease
- g) Infection control in the ED
- h) Body fluid exposure
- i) Vaccination in the ED
- j) Infectious disease surveillance
- k) Infectious disease outbreaks
- l) Reportable communicable diseases
- m) Contact management of patients with serious infectious disease
- n) Antibiotic use in the ED
- o) Outpatient antibiotic therapy
- p) Febrile infant management
 - 1. Bacteraemia
- q) Systemic inflammatory response syndrome
- r) Sepsis, severe sepsis and septic shock
- s) Multiple organ dysfunctions
- t) Toxic shock syndrome
- u) Infections in the returned traveller
 - 1. Malaria
 - 2. Dengue fever
 - 3. Haemorrhagic fevers
 - 4. TyphoidOthers
- v) Bacterial
 - 1. Food poisoning
 - 2. Meningococemia
 - 3. Disseminated gonococcal infection
 - 4. Tuberculosis and other mycobacterial infections
 - 5. Gas gangrene
 - 6. Necrotising fasciitis
 - 7. Fournier's gangrene
 - 8. Diphtheria DIS G
 - 9. Haemophilus influenzae
- w) Sexually transmitted infections
- x) Viral
 - 1. HIV DIS H
 - 2. Infectious mononucleosis
 - 3. Influenza/parainfluenza
 - 4. Herpes simplex
 - 5. Herpes zoster
- y) Mycoplasma infections
- z) Fungal infections
 - 1. Protozoal infections

2. Tick-borne infections
3. Infection from a marine source
4. Infection in the burns patient
5. Biologic weapons

Immunology

- a) Clinical examination of the patient with a suspected immunological disorder
- b) Interpretation of symptoms and signs of the immunological systems
- c) Hypersensitivity
 1. Allergic reactions
 2. Anaphylactoid reactions
 3. Anaphylaxis
 4. Angioedema
 5. Drug allergies
- d) Collagen vascular disease
 1. Raynaud's syndrome
 2. Reiter's disease
 3. Scleroderma
 4. Systemic lupus Erythematosus
- e) Vasculitis
 1. Polyarteritis nodosa
 2. Wegener's granulomatosis
- f) Kawasaki's disease
- g) Sarcoidosis
- h) Complication of immunosuppressant agents

Metabolic

- a) Volumes and composition of the
 1. Total body water
 2. Intracellular fluid
 3. Extracellular fluid
 4. Plasma
 5. Blood
- b) Electrolytes
 1. Hypokalaemia
 2. Hyperkalaemia

3. Hyponatraemia
4. Hypernatraemia
5. Hypocalcaemia
6. Hypercalcaemia
7. Hypermagnesaemia
8. Hypomagnesaemia
9. Hyperphosphataemia
10. Hypochloraemia
11. Hyperchloraemia
12. Inappropriate ADH syndrome
13. Interpretation of the electrocardiograph in electrolyte disturbance

Acid Base Disorders

- a) Interpretation of arterial blood gases
 1. Alveolar gas equation
 2. A-a gradient
- b) Metabolic acidosis
- c) Metabolic alkalosis
- d) Respiratory acidosis
- e) Respiratory alkalosis
- f) Anion gap
- g) Osmolar gap
- h) Indications for the administration of sodium bicarbonate

Neonates and Infants

- a) Apnoea of prematurity
- b) Hyperbilirubinaemia
- c) Feeding problems
- d) Congenital heart disease
- e) Diaphragmatic hernia DIS G Congenital syndromes
- f) Gastroesophageal reflux
- g) Metabolic disease
- h) Necrotising enterocolitis
- i) Respiratory distress
- j) Seizures
- k) Infections/sepsis
 1. Occult bacteraemia
- l) Sudden infant death syndrome

5. SURGICAL

Trauma

- a) Epidemiology of trauma
- b) Mechanisms of injury
- c) Principles of management of trauma
- d) Trauma team concepts
- e) Trauma scoring systems
- f) Glasgow Coma Score
- g) Imaging modalities in trauma
- h) Assessment and management of multiple trauma
- i) Spinal immobilisation techniques
- j) Head trauma
 - 1. Assessment and management of head trauma
 - 2. Scalp lacerations
 - 3. Skull fractures
 - 4. Extradural haematoma
 - 5. Subdural haematoma
 - 6. Intracerebral haematoma
 - 7. Diffuse axonal injury
 - 8. Penetrating head injury
 - 9. Minor head injury
 - 10. Post concussive syndrome
 - 11. Emergency department drainage of traumatic intracranial haematomas
- k) Chest trauma
 - 1. Assessment and management of chest trauma
 - 2. Pneumothorax
 - 3. Haemothorax
 - 4. Pulmonary contusion
 - 5. Myocardial contusion
 - 6. Fractured ribs
 - 7. Fractured sternum
 - 8. Flail chest
 - 9. Pericardial Tamponade
 - 10. Tracheobronchial rupture
 - 11. Oesophageal perforation
 - 12. Diaphragmatic rupture
 - 13. Great vessel injury
 - 14. Penetrating thoracic injury
 - 15. Emergency department thoracotomy

16. Traumatic asphyxia

l) Abdominal trauma

1. Assessment and management of abdominal trauma
2. Diagnostic peritoneal lavage
3. Splenic injury
4. Hepatic injury
5. Renal injury
6. Pancreatic injury
7. Hollow viscus injury
8. Great vessel injury
9. Penetrating abdominal injury
10. Abdominal compartment syndrome

m) Genitourinary trauma

1. Assessment and management of genitourinary trauma
2. Ureteric injury
3. Urethral injury
4. Bladder injury
5. Penile rupture
6. Testicular trauma
7. Penetrating genitourinary injury

n) Pelvic trauma

1. Assessment and management of pelvic trauma
2. Major pelvic fracture
3. Exsanguinating pelvic injury

o) Spinal cord injury

1. Assessment and management of spinal cord injury
2. Spinal cord syndromes
3. SCIWORA

p) Neck trauma

1. Assessment and management of neck trauma
2. Penetrating neck injury
3. Laryngotracheal injury
4. Vascular injury
5. Nerve injury

q) Maxillofacial trauma

1. Assessment and management of maxillofacial trauma
2. Facial lacerations
3. Nasal fractures
4. Mandibular fractures
5. Le Fort fractures
6. Zygomatic fractures
7. Orbital injury

8. Temporal bone fractures
 9. Dental trauma
 10. Tooth avulsion
 11. Intraoral lacerations
- r) Extremity trauma
1. Assessment and management of extremity trauma
 2. Traumatic amputation
 3. Arterial injury
 4. Compartment syndromes
 5. Crush syndrome
- s) Trauma in pregnancy
1. Assessment and management of trauma in pregnancy
 2. Obstetric complications of trauma
 3. Uterine rupture
 4. Perimortem caesarean section
- t) Trauma in children
1. Assessment and management of trauma in children
 2. Paediatric aspects of trauma management
 3. Non-accidental injury

Burns

- a) Evaluation of the patient with burns
- b) Early management of severe burns
- c) Burn wound care
- d) Management of minor burns
- e) Inhalation injury
- f) Chemical burns
- g) Electrical burns
- h) Tar burns
- i) Sunburn
- j) Oral burns
- k) Escharotomy

Dental

- a) Normal dental development
- b) Dental infections without upper airway obstruction
- c) Dental infections with possible upper airway obstruction

Thoracic

- a) Spontaneous pneumothorax
- b) Pneumomediastinum
- c) Mediastinitis
- d) Oesophageal perforation
- e) Mediastinal masses
- f) Oesophageal foreign body
- g) Tracheobronchial foreign body
- h) Congenital
 - 1. Diaphragmatic hernia
 - 2. Oesophageal
 - 3. Tracheobronchial
 - 4. Vascular ring

Abdominal

- a) Assessment and management of abdominal pain
- b) Pancreatitis
- c) Cholelithiasis
- d) Cholecystitis
- e) Cholangitis
- f) Non-traumatic splenic rupture
- g) Bowel obstruction
 - 1. Post-surgical adhesions
 - 2. Malrotation
 - 3. Volvulus
 - 4. Congenital pyloric Stenosis
 - 5. Intussusception
 - 6. Insertion of a Nasogastric tube
- h) Diverticular disease
- i) Meckel's diverticulum
- j) Perforated viscus
- k) Acute appendicitis
- l) Peritoneal adhesions
- m) Ischaemic colitis
- n) Peritonitis
- o) Retroperitoneal haematoma
- p) Intra-abdominal/retroperitoneal abscesses
- q) Hernias
- r) Tumours

Anorectal

- a) Haemorrhoids
- b) Perianal haematoma
- c) Anal fissure
- d) Anorectal abscesses
- e) Pilonidal disease
- f) Rectal bleeding
- g) Rectal prolapse
- h) Idiopathic anal pain
- i) Radiation proctitis
- j) Proctoscopy and Sigmoidoscopy
- k) Rectal foreign bodies

Vascular

- a) Peripheral ischaemia
- b) Arterial occlusion
- c) Venous occlusion
- d) Intestinal ischaemia
- e) Thoracic dissection
- f) Intra-abdominal aneurysms
- g) Aortic disorders
 - 1. Aortic aneurysms
 - 2. Aortic dissection
- h) Mycotic aneurysms
 - 1. Intra-arterial drug injection

Orthopaedic and Hand

- a) General principles of fracture management
- b) Paediatric considerations in orthopaedics
 - 1. Salter-Harris classification
 - 2. Injuries about the elbow
 - 3. The child with a limp
 - 4. Bone dysplasia
 - 5. Connective tissue syndrome
 - 6. Inflammatory arthritis
 - 7. Injury rehabilitation
 - 8. Metabolic bone abnormalities
 - 9. Osgood Schlatter disease
 - 10. Perthe's disease

11. Slipped capital femoral epiphysis
 12. Transient synovitis
 13. Developmental hip dislocation
- c) Casting techniques
1. Short arm POP
 2. Long arm POP
 3. Short arm backslab
 4. Scaphoid POP
 5. Bennett's fracture POP
 6. Volar splint
 7. U Slab
 8. Short leg POP
 9. Long leg cylinder
- d) Splintage techniques including splintage procedures
1. Application of a broad arm sling
 2. Application of a collar and cuff
 3. Application of a figure-of-8 bandaging
 4. Application of a knee immobiliser
 5. Application of a Donway/ Hare splint
 6. Application of a Thomas splint
 7. Pelvic stabilisation techniques
- e) Fractures
1. Clavicle
 2. Scapula
 3. Proximal Humerus
 4. Elbow
 5. Forearm bones
 6. Wrist
 7. Carpal bones
 8. Spine
 9. Pelvis and hip
 - Pelvic fractures
 - Sacral fractures
 - Coccygeal fractures
 - Femoral neck fractures
 10. Hip and femur
 - Femoral shaft fractures
 - Supracondylar fractures
 - Condylar fractures
 - Fractured patella
 - Tibia and fibula

- Ankle
 - Classification of ankle fractures
- Foot
 - Talar fractures
 - Calcaneal fractures
 - Tarsal bone fractures
 - Metatarsal fractures
 - Phalangeal fractures

f) Dislocations

1. Shoulder
2. Acromioclavicular joint
3. Elbow
4. Pulled elbow
5. Carpal–metacarpal bones
6. Phalanges
7. Cervical spine
 - Atlantoaxial
 - Facet joint
8. Hip
9. Knee
10. Patella
11. Ankle
12. Foot
13. Tarsal
14. Metatarsal
15. Phalangeal

g) Soft tissues

1. Shoulder
 - Rotator cuff tears
 - Bursitis
 - Tendinitis
2. Elbow
 - Bursitis
 - Tendinitis
3. Knee
 - Bursitis
 - Ligament injury
 - Cruciate injury
 - Menisceal injury
 - Bakers cyst
 - Ankle

- Ligament injury
- Foot
 - Foot injury

h) Hand injuries

1. Metacarpal fractures/dislocations
2. Phalangeal fractures/dislocations
3. Lacerations
4. Nail injuries
5. Extensor tendon injuries
6. Mallet finger
7. Boutonniere deformity
8. Other
9. Flexor tendon injuries
10. Infections
11. Paronychia
12. Infective tenosynovitis DIS H
13. Other
14. Foreign bodies
15. Amputations
16. Nerve injuries
17. High pressure injection injuries
18. Crush injury
 1. Overuse syndromes
 2. Osteomyelitis
 3. Septic arthritis
 4. Complex regional pain syndrome type 1 (Sudeck's atrophy)

Neurosurgical

- a) Intracranial aneurysms
- b) AV malformations
- c) Subarachnoid haemorrhage
- d) Cerebral tumours
- e) Shunt complications
- f) Management of elevated intracranial pressure
- g) Intracranial abscesses
- h) Cerebral venous thrombosis
- i) Spinal epidural abscess
- j) Intravertebral disc disease
- k) Spinal Stenosis

Urology

- a) Renal colic
- b) Urinary catheter insertion
- c) Suprapubic catheter insertion
- d) Urinary retention
- e) Obstructive Uropathy
- f) Vesico-ureteric reflux
- g) Assessment and management of haematuria
- h) Urethritis
- i) Balanitis
- j) Prostatic hypertrophy
- k) Tumours
- l) Acute scrotum
 1. Epididymitis
 2. Orchitis
 3. Testicular torsion
 4. Torsion of the testicular appendage
- m) Priapism
- n) Phimosis/Paraphimosis

ENT

- a) Ear
 1. Auroscopes
 2. Otagia
 3. Otitis media
 4. Otitis Externa
 5. Aural toilet/wick insertion
 6. Cholesteatoma
 7. Perforated tympanic membrane
 8. Chondritis/perichondritis
 9. Mastoiditis
 10. Labyrinthitis
 11. Meniere's disease
- b) Nose
 1. Epistaxis
 - Anterior packing
 - Cautery
 - Posterior packing
 - Balloon placement

2. Sinusitis
- c) Throat/oropharynx
 1. Ludwig's angina
 2. Stomatitis
 3. Pharyngitis
 4. Tonsillitis
 5. Peritonsillar abscess
 6. Retropharyngeal abscess
 7. Epiglottitis
 8. Laryngitis
 9. Tracheitis
 10. Post-tonsillectomy bleed
- d) Foreign bodies
 1. Nasal
 2. Aural
 3. Upper airway
 4. Pharyngeal

Eye

- a) Use of the slit lamp
- b) Ophthalmoscopes
- c) Measurement of intraocular pressure
- d) Evaluation of the red eye
- e) Evaluation of the painful eye
- f) Sudden visual loss
- g) External eye
 1. Blepharitis
 2. Dacryocystitis
 3. Conjunctivitis
 4. Corneal abrasions
 5. Corneal ulcers
 6. Keratitis
 7. Foreign bodies
 8. Conjunctival
 9. Corneal
 10. Spontaneous subconjunctival haemorrhage
 11. Amblyopia
 12. Ocular burns
 13. Caustic
 14. Flash burns

15. Thermal
- h) Anterior pole
 - 1. Glaucoma
 - 2. Uveitis
 - i) Posterior pole
 - 1. Retinal detachment
 - 2. Vitreous haemorrhage
 - 3. Retinal haemorrhage
 - 4. Retinal vascular occlusions
 - 5. Optic neuritis
 - j) Orbit
 - 1. Cellulitis
 - 2. Orbital
 - 3. Pre-orbital
 - 4. Endophthalmitis
 - 5. Ocular trauma
 - 6. Blunt
 - 7. Penetrating

Wound management

- a) Classification of wounds
- b) Surgical wound management
- c) Basic wound closure techniques
- d) Wound dressings Wound infections
- e) Chronic ulcers
- f) Special wounds
 - 1. Puncture wounds
 - 2. Bites and stings
 - 3. Blast injury
 - 4. Degloving injury
 - 5. Amputations

Plastics

- a) Plastic surgical techniques
 - 1. Grafts
 - 2. Flaps
 - 3. Advanced wound closure

Breast

- a) Carcinoma of the breast
- b) Mastitis
- c) Breast abscess

6. OBSTETRICS AND GYNAECOLOGY

Pregnancy

- a) Normal pregnancy
 - 1. Antenatal screening
 - 2. Physiological changes
 - 3. Foetal development
- b) High risk pregnancy
- c) Complications of pregnancy
 - 1. Hyperemesis Gravidarum
 - 2. Miscarriage
 - 3. Anembryonic pregnancy
 - 4. Septic abortion
 - 5. Ectopic pregnancy
 - 6. HELLP syndrome (haemolysis, elevated liver enzymes, low platelets)
 - 7. First trimester bleeding
 - 8. Haemorrhage, ante partum
 - 9. Abruptio Placentae
 - 10. Placenta Previa, vasa Previa
 - 11. Other
 - 12. Infections, including urinary tract infection
 - 13. Fevers
 - 14. Isoimmunisation
 - 15. Pregnancy-induced hypertension, pre-Eclampsia
- d) Normal labour and delivery
- e) Complications of labour
 - 1. Foetal distress
 - 2. Premature labour
 - 3. Premature rupture of membranes
 - 4. Other
- f) Complications of delivery
 - 1. Mal-presentation
 - 2. Mal-position
 - 3. Nuchal cord
 - 4. Prolapsed cord

5. Rupture or inversion of uterus
 6. Retained placenta
 7. Other
- g) Post-partum complications
1. Haemorrhage, postpartum
 2. Primary
 3. Secondary
 4. Endometriosis
 5. Retained products of conception
- h) Drugs in pregnancy

Gynaecology

- a) Vagina and vulva
1. Bimanual and vaginal speculum examination
 2. Vaginitis/Vulvovaginitis
 3. Foreign body
 4. Bartholin cyst/abscess
 5. Other
- b) Uterus
1. Dysmenorrhoea
 2. Dysfunctional uterine bleeding
 3. Cervicitis, endocervicitis
 4. Endometriosis
 5. Tumours
 6. Leiomyoma
 7. Gestational trophoblastic disease
 8. Other
 9. Prolapse
- c) Ovaries
1. Cysts and cyst complications
 2. Mittelschmerz
 3. Tumours
 4. Ovarian hyper stimulation syndrome
- d) Infections
1. Pelvic inflammatory disease
 2. Fitz-Hugh-Curtis syndrome
 3. Tubo-ovarian abscess
 4. Herpes simplex
 5. Human papilloma virus
- e) Contraception

1. Complications
 2. Post-coital
- f) Sexual assault

7. PSYCHIATRY

Evaluation

- a) History
- b) Physical examination
- c) Investigations

Organic brain syndrome Violent/agitated behaviour

- a) Prevention
- b) Safety issues
- c) Restraint options and management

Deliberate self-harm

Depression

Anxiety disorders

- a) Phobias
- b) Panic disorder
- c) Post-traumatic stress disorder
- d) Obsessive–compulsive disorder
- e) Hypochondriacs
- f) Other

Psychoses

- a) Acute and chronic
- b) Bipolar affective disorder
- c) Schizophrenia
- d) Mania and hypomania
- e) Other

The “challenging” ED patient

- a) Personality disorder
- b) Malingering

- c) Frequent presenter
- d) Conversion disorder
- e) Pain disorder
- f) Somatization disorder
- g) Munchausen's by proxy
- h) Management strategies
- i) Other

The mental health patient in the

- a) Triage
- b) Appropriate psychiatric assessment area
- c) Community teams
- d) Psychiatry liaison nurse as part of the ED team
- e) In-patient psychiatry services
- f) Psychiatric facilities/units
- g) ED staff issues – appropriate training, debriefing

Therapy

- a) Pharmacology of therapeutic agents
 1. Benzodiazepines
 2. Anti-psychotics
 3. Antidepressants
 4. SSRIs
 5. Sedatives
 6. Other
- b) Non-pharmacologic therapy
 1. ECT – complications
 2. Other

Involuntary detention

- a) Legal aspects of mental health care

8. TOXICOLOGY

General principles

- a) Prehospital care
- b) Epidemiology and prevention of poisoning

- c) Management issues
 - 1. Emesis
 - 2. Gastric lavage
 - 3. Activated charcoal
 - 4. Cathartics
 - 5. Whole bowel irrigation
- d) Risk assessment/prediction of toxicity
- e) Toxidromes

Analytical toxicology

- a) Principles
- b) Drug testing and screening

Chemical dependency and substance abuse

- a) Drug abuse
- b) Drug dependence
- c) Drug withdrawal
- d) Tolerance

Antidotes

- a) Anticholinergic
- b) Chelating agents
- c) Benzodiazepine antagonists
- d) Calcium
- e) Cyanide treatment
- f) Desferioxamine
- g) Fuller's earth
- h) Glucagon
- i) Methylene blue
- j) Opioids antagonists
- k) Physostigmine
- l) Pyridoxine
- m) Oximes
- n) Protamine
- o) Vitamin K
- p) Folinic acid
- q) Oxygen – normobaric
- r) Oxygen – hyperbaric

Anti-inflammatory agents and analgesic poisoning

- a) Paracetamol
- b) NSAIDs
- c) Salicylate
- d) Gout drugs
- e) Opioids

Antimicrobial poisoning

- a) Antibiotics
- b) Antifungal
- c) Antiparasitic
- d) Antiseptics
- e) Antiviral
- f) Anti-tuberculous

Autonomic agent poisoning

- a) Anticholinergic
- b) Antihistamines
- c) Serotonergic drugs
- d) Cholinergic
- e) Ergot alkaloids
- f) Methylxanthines
- g) Sympathomimetic

CNS drugs and muscle relaxant poisoning

- a) Alcohols
- b) Anticonvulsants
- c) GHB and related compounds
- d) Anti-Parkinsonian drugs
- e) Psychiatric drugs
 - 1. Antipsychotic agents
 - 2. Antidepressants
 - 3. Lithium
- f) Hallucinogens
- g) Sedatives, hypnotics, anxiolytics
- h) Smooth muscle relaxants

Cardiovascular

- a) Antiarrhythmics
- b) Anticoagulants
- c) Anti-hypertensive

Environmental toxicology

- a) Plant ingestions

GI agents

- a) Antacids
- b) Antidiarrhoeals
- c) Laxatives

Industrial toxicology

- a) Metals
 - 1. Arsenic
 - 2. Lead
 - 3. Mercury
 - 4. Metal fumes
 - 5. Other
- b) Toxic gases
 - 1. CO
 - 2. Chlorine
 - 3. CO₂
 - 4. Cyanide
 - 5. Hydrogen sulphide
 - 6. Hydrocarbons
 - 7. Phosgene
- c) Hydrogen fluoride/hydrofluoric acid
- d) Nitrites

Pesticides, herbicides and Rodenticide poisoning

- a) Organophosphates
- b) Carbamates
- c) Glyphosate
- d) Paraquat
- e) Naphthalene/camphor
- f) Strychnine

- g) Phosphine
- h) Super Warfarin

Pharmacology principles

- a) Techniques for drug removal
- b) Drug delivery vehicles/diluents
- c) Drug interactions
- d) Adverse drug reactions
- e) Pharmacokinetics
- f) Demonstrate knowledge of pharmacokinetic principles, including drug absorption, distribution, metabolism and clearance

Vitamins, minerals, bone and endocrine agents

- a) Hypoglycaemic agents
- b) Electrolytes and minerals
- c) Iron
- d) Steroids
- e) Thyroid drugs
- f) Vitamins
- g) Hormones

9. ENVIRONMENTAL

Heat

- a) Heat stroke
- b) Heat stress/exhaustion
- c) Drug related hyperthermia

Cold

- a) Hypothermia
- b) Frostbite

Venomous bites and stings

- a) Snakes
- b) Spiders
- c) Hymenoptera – bees, wasps, ants
- d) Jellyfish
- e) Stinging fish

- f) Blue-ringed octopus
- g) Other

Aquatic

- a) Near drowning
- b) Decompression illness
- c) Barotrauma
- d) Toxic marine ingestions

Electricity

- a) Electric shock
- b) Lightning strike

Aviation

- a) Acute mountain sickness
- b) High altitude cerebral oedema
- c) High altitude pulmonary oedema

Exercise-associated illness

10. RADIOLOGY IN EMERGENCY MEDICINE

Physics

Safety issues/requirements

Limitations of modalities

- a) Plain x-ray
- b) Ultrasound
- c) CT scan
- d) MRI
- e) Nuclear medicine

Indications, techniques and interpretation of common studies in emergency medicine

- a) Plain radiology
 1. Trauma series (chest, pelvis, cervical spine)
 2. Chest
 3. Abdomen

4. Limbs
 5. Spine
 6. Cervical
 7. Thoracic
 8. Lumbo-sacral
 9. Skull and facial skeleton
 10. Soft tissue
- b) Contrast radiology
1. Angiography
 2. Cerebral
 3. Cardiac
 4. Limb
 5. Abdominal
 6. Pulmonary
 7. IVP
 8. Cystography and urethrography
 9. GIT
- c) Computed tomography (CT)
1. Brain
 2. C-spine
 3. Thoracic and lumbar spine
 4. Chest
 5. CT pulmonary angiography
 6. Abdomen
 7. CT urography
 8. Limbs and joints
 9. Facial bones
- d) Magnetic resonance imaging (MRI)
1. Brain
 2. Spine
 3. Other
- e) Nuclear medicine
1. Ventilation/perfusion scans
 2. Bone scans
 3. Cardiac scans
 4. Infection and inflammation scans
 5. GIT scans
- f) Ultrasound
1. Focussed abdominal sonography in trauma (FAST)
 2. Vascular doppler and duplex
 3. Abdominal
 4. Pelvic, including pregnancy

5. Limb
6. Echocardiography

Medical precautions in radiology

- a) Complications (including contrast agents)
- b) Pregnancy and shielding
- c) The unstable patient – transfer and monitoring in radiology

11. LEGAL

Duty of care

- a) Individual doctor Demonstrate knowledge of the term “duty of care”
- b) Hospital
 1. Demonstrate knowledge of the role of the practitioner within a health service in providing care on behalf of the health service

Medical error

- Demonstrate knowledge of the concept of medical error.
- Demonstrate knowledge of the key definitions of medical error.
 - Negligence
 - systems versus individual failure
 - Preventability
 - root cause analysis

Consent

Demonstrate knowledge of the following concepts in relation to consent

- a) Legal definition of “emergency”
- b) Capacity to consent
 1. Children and adolescents
 2. Intellectually disabled
 3. Mentally ill
 4. Impaired by drugs or alcohol
 5. Impaired by physical illness
- c) Valid consent
- d) Implied consent
- e) Verbal consent
- f) Written consent
- g) Refusal to consent

- h) Documentation of the process of consent

Chemical examiner Investigations

- a) Reporting to Chemical examiner
 - Demonstrate knowledge of the requirements of coronial notification
- b) Expert opinion
 - Demonstrate knowledge of the competencies required to provide expert witness, the reason for the provision of service, and the obligation required once a service is rendered to the court.

Involuntary detention under a Mental Health Act

Demonstrate knowledge of the following concepts in relation to involuntary detention in the ED.

- a) Definition of mentally ill
- b) Effects of drugs or alcohol
- c) Criteria for detention
- d) Physical restraint and sedation
- e) Emergency treatment
- f) Police powers
- g) Death in detention

Privacy and confidentiality

- a) Principles of privacy
 - Demonstrate working knowledge of relevant legislation
- b) Patient confidentiality
 - Demonstrate principles of application into the clinician's practice.

Reporting

Demonstrate a working knowledge of the following concepts in relation to reporting in the ED.

- a) Child abuse/child at risk
- b) Domestic violence
- c) Infectious diseases
- d) Violent injuries
- e) Occupational health and safety
- f) Mental health patients
- g) Medical conditions and driving
- h) Firearms registration

Medico-legal reports

Demonstrate knowledge of the components of a medico-legal document and the ethical and legal responsibility associated with generation of such documents.

Documentation and the Medical Record

- Demonstrate knowledge of the components of a medical record
- Demonstrate knowledge of the importance of the medical record in patient care
- Demonstrate knowledge of the legal aspects of medical record entries
- Demonstrate knowledge of how to write a medical record

Legal aspects of death and dying

- Demonstrate knowledge of the legal aspects of death and dying
 - a) Death certificate
 - b) Living wills
 - c) End-of-life decisions and advance directives
 - d) Brain death
- Demonstrate knowledge of the principles of forensic evidence collection and sources of additional information
 - a) Forensic evidence
 - b) Chain of evidence
 - c) Drug and alcohol testing

Impaired health practitioner

- Demonstrate knowledge of the following concepts
 - a) Recognition
 - b) Common causes
 - c) Legal responsibilities of reporting
 - d) Sources of assistance for the practitioner

Medical registration authority

- Demonstrate knowledge of the role of medical registration authorities

12. CLINICAL RISK MANAGEMENT

High risk areas

- Demonstrate knowledge of types of clinical situation in the ED
- associated with a high incidence of adverse outcomes

Telephone advice and triage

- Demonstrate knowledge of the medico legal aspects of telephone advice Demonstrate knowledge of the importance of documentation of a non face- to-face encounter (including follow up)

Consultation

- Demonstrate knowledge of the concepts of vertical and horizontal consultation

Transfer of responsibility

- Demonstrate knowledge that patient care is a continuum and of techniques that ensure that the standard of patient care is maintained at time of referral and handover of care/treatment
- Demonstrate knowledge of the issues of interface care between one service/ individual practitioner and another

Disposition

- Demonstrate knowledge of patient disposition from the ED in the following areas
 - a) Discharge/transfer
 - b) Follow up
 - c) Referral

Leaving against medical advice

- Demonstrate knowledge of the outcomes associated with LAMA NCI Ex
- Demonstrate knowledge of techniques/ systems that can lessen the number of LAMA patients
- Demonstrate knowledge of the medico legal implications of patients who LAMA

Left without being seen

- Demonstrate knowledge of the outcomes associated with LWBS NCI Ex
- Demonstrate knowledge of techniques/ systems that can lessen the number of LWBS patients
- Demonstrate knowledge of the medico legal implications of patients who LWBS

Patients who leave before treatment is completed

- Demonstrate knowledge of the responsibilities associated with patients who leave before treatment is completed
- Demonstrate knowledge of the principles of medico-legal obligations, mental status assessment, mental competency and guardianship

PREHOSPITAL AND RETRIEVAL

Pre hospital care

- a) The concept of emergency medical system (EMS)
 - Demonstrate knowledge of the benefits of an EMS for emergency patient care
 - Demonstrate knowledge of the need for coordination of the components of EMS and the need for effective interfaces between EMS and other health care systems
- b) Communications
 - Demonstrate knowledge of the need for effective communication between components of the EMS system in the delivery of Prehospital care
 - Demonstrate knowledge of the various means of communication available in the delivery of Prehospital care
- c) Patient access in pre hospital care
 - Demonstrate knowledge of the differences and the difficulties in accessing the patient for the delivery of emergency care in the pre hospital setting as compared to the hospital setting
- d) Roles and responsibilities of EMS
 - Demonstrate knowledge of the roles and responsibilities of the personnel within the EMS who contribute to the overall delivery of pre hospital care
 1. Ambulance
 2. Fire
 3. Police
- e) Modes of transport
 - Demonstrate knowledge of the different modalities of patient transport available to Prehospital care providers
 - Demonstrate knowledge of the relative advantages and disadvantages of the use of each of the different modalities of patient transport available to Prehospital care providers
 1. Road ambulance
 2. Helicopter
- f) Patient assessment in pre hospital care
 - Demonstrate knowledge of the differences in assessment of a patient between the hospital and the pre hospital environment
- g) Equipment considerations in pre hospital care
 - Demonstrate knowledge of the medical equipment utilised in pre hospital care and the limitations that the pre hospital environment places on the use and function of that equipment
 - Demonstrate knowledge of the equipment utilised by other EMS personnel in facilitating the delivery of Prehospital care
 1. Clinical procedures in pre hospital care
 - Demonstrate knowledge of the relevant considerations and

- adaptations that may be necessary to safely undertake a procedure
- in the pre hospital environment
- Demonstrate knowledge of the relative advantages and disadvantages of undertaking a clinical procedure in the pre hospital environment as compared to delaying the procedure until arrival at hospital
- Demonstrate knowledge of the following procedures in pre hospital care
 1. Airway and pulmonary resuscitation
 2. Cardiopulmonary resuscitation
 3. Defibrillation
 4. Haemorrhage control
 5. Spinal immobilization
 6. Splintage techniques
- Demonstrate knowledge of the rationale for the development of intensive care paramedic protocols
- h) Controversies in Prehospital care
 - Demonstrate knowledge of contemporary areas of controversy in Prehospital care
- i) Working at an accident scene
 - Demonstrate knowledge of their role and responsibility as part of the EMS team at an accident scene
- j) Safety issues
 - Demonstrate knowledge of the hazards of working at an accident scene and the safety requirements to minimise the risks to both themselves and other EMS personnel
- k) Hazard control
 - Demonstrate knowledge of hazardous materials that may be encountered at an accident scene and of the roles and responsibilities of the different EMS providers in Special circumstances
 1. The entrapped patient
 2. Crush syndrome
 3. Field amputation
 4. Rescues
 - Demonstrate knowledge of the role and responsibilities of rescue systems in the context of EMS
 - Demonstrate knowledge of the role and responsibilities of the emergency physician during a rescue operation at an accident scene

Retrieval

- a) Interhospital transfer
 - Demonstrate knowledge of the reasons that interhospital transfers are a requirement of EMS systems
 - Demonstrate knowledge of how to provide safe and effective patient care

during all phases of patient transfer

b) Intrahospital transfer

- Demonstrate knowledge of the requirements to effect safe transfer of patients between departments within a hospital

c) Roles and responsibilities in retrieval medicine

- Demonstrate knowledge of the roles and responsibilities of other personnel who contribute to the overall care and safety of patients requiring transfer
 1. Retrieval physician
 2. Retrieval nurse
 3. Transport provider

d) Modes of transport

- Demonstrate knowledge of the different modalities of patient transport available for interhospital transfer
- Demonstrate knowledge of the relative advantages and disadvantages of the use of each of the different modalities of patient transport available for interhospital transfer
 1. Road ambulance
 2. Rotary wing aircraft
 3. Fixed wing aircraft

e) Communications

- Demonstrate knowledge of the need for effective communication between components of the EMS system involved in the transfer of patients from one hospital facility to another
- Demonstrate knowledge of the various means of communication available to facilitate the transfer of patients from one hospital facility to another

f) Equipment considerations

- Demonstrate knowledge of the medical equipment utilised in interhospital transfer and the limitations that the requirement for transfer places on the use and function of that equipment
- Demonstrate knowledge of the equipment utilised by other EMS personnel in facilitating the transfer of patients from one hospital facility to another

g) Preparing the patient for transport

- Demonstrate knowledge of the assessments and procedures that must be undertaken, and the monitoring requirements necessary to ensure that a patient is optimally prepared for safe transfer from one hospital facility to another

h) Physiological considerations

- Demonstrate knowledge of the physiological consequences of transport in the ill or injured patient

i) Effects of altitude

- Demonstrate knowledge of the physiological consequences of transport by air in the ill or injured patient
- j) When not to transport
 - Demonstrate knowledge of the limitations of the transport environment and of the clinical scenarios where alternatives to patient transfer are likely to contribute to better patient outcome.

14. DISASTER MEDICINE

Disasters

- a) Definitions of a disaster and the importance of the relativity of an incident to available resources
- b) Classification of disasters
- c) Epidemiology of disasters
- d) National & regional responsibilities

Disaster planning

- a) General principles
 - Disaster management & mitigation
 - Principles of prevention and risk reduction
 - Principles of preparedness relative to risk of occurrence and impact
- b) Hospitals as responders to an emergency
 - Demonstrate knowledge of the standard emergency threat/incident procedures in the following situations
 1. External emergency (Code Brown)
 2. Hospitals as “victims” in an emergency
 3. Fire (Code Red) procedures and considerations
 4. Bomb threat (Code Purple) procedures
 5. Evacuation (Code Orange)
 6. Internal emergency (Code Yellow)
 7. Natural disaster (Code Green)
- c) Response
 - Demonstrate the principles and procedures that are required for preparing the ED for a large influx of casualties
- d) Recovery
 - Demonstrate knowledge of the principles and procedures those are required in the aftermath of an incident
- e) Incident command structure
 - Demonstrate knowledge of the five different management activities which need to be addressed in the effective management of any incident

1. Strategic: The overall command of the incident and interface between different responding agencies and the community
 2. Planning: The continual evaluation of the incident situation
 3. Financial: Tracking costs and administering the procurement of any necessary resources
 4. Operational: The practical management of incident
 5. Logistics: The provision of services and support for all needs of the incident
- f) Demonstrate knowledge of the importance of communications during an incident
- g) Demonstrate knowledge of the importance of media management during incidents and the use of media during an incident

Roles and responsibilities at the disaster site

- a) Medical
- Demonstrate knowledge of the relative advantages and disadvantages in having specialist disaster response medical teams instead of disaster response medical teams taken from hospitals
- b) Ambulance
- c) Police
- d) Fire

Disaster equipment and supplies

- a) Incident site
- Selecting equipment for use at an incident site
 - Medical bags
 - Medical disposables & pharmaceuticals
 - Medical monitoring equipment
- b) Emergency department
- Disposables and pharmaceutical supplies
 - Medical records and stationary

Occupational health and safety issues

- a) Incident site
- Personal protective equipment (incident site)
 - Emergency department
 - Principles of hazardous materials incidents
 - Recognising toxic gas exposures
 - Chemical personal protective equipment (hospital)
 - Personal protective equipment for biological hazards

Disaster site operations

- a) Organization of medical operations at an Incident site
- b) Adapting clinical management in a disaster
 - Disaster triage
 - Demonstrate knowledge of the principles of disaster Triage and the national disaster triage standard
 - Record keeping
 - Paediatric casualties

Demonstrate knowledge of important triage Considerations with regard to paediatric Casualties and the needs of children involved in an incident

Mental health & behavioural issues

- a) Disaster victims
 - The role of counselling
- b) Health professionals and responders
 - Critical incident stress debriefing
 - Post traumatic stress disorder

Medical response to terrorist incidents

- a) Chemical weapons
 - Choking agents
 - Cyanide
 - Phosgene
 - Blistering agents
 - Mustard
 - Nerve agents
- b) Biological weapons
 - Small pox
 - Anthrax
 - Botulism
 - Viral hemorrhagic fevers
- c) Radiation emergencies
 - Radiation exposure

Demonstrate knowledge of the different types of radiation exposure and their relative biological impact

- Radiation injury
- Radiation safety

Demonstrate knowledge of the principles of radiation safety, radiation monitoring and responding to a casualty contaminated with a radioisotope safely

- d) Urban search and rescue

Demonstrate knowledge of the problems & dangers associated with accessing and treating casualties within collapsed structures

Disaster exercises

- a) Demonstrate knowledge of the role of different types of disaster exercises S G
- b) Designing an exercise
 - Practical problems in conducting exercises
 - Occupational health and safety issues in exercises
 - The importance of debriefing exercise participants to update disaster plans

15. MEDICAL EDUCATION

Basic principles of medical education

Demonstrate knowledge of the principles of the following aspects of medical education to the emergency medicine setting

- a) One-on-one tutorials
- b) Small group tutorials
- c) Large group tutorials
- d) Didactic versus interactive sessions
- e) Setting learning objectives
- f) Study techniques
- g) Creation of an environment conducive to learning
- h) Evaluation of a teaching program
- i) Development of courses
- j) Educational resources including electronic aids in teaching and learning

Undergraduate

Demonstrate knowledge of the following issues with regards to medical student education

- a) Ensuring a safe environment for the student
- b) Ensuring a safe environment for the patient interacting with the student
- c) Consent of a patient interacting with a student
- d) Topics in emergency medicine relevant to differing stages in the medical student curriculum
- e) Problem-based learning

Junior medical staff

Demonstrate knowledge of the principles of the following issues with regard to junior medical staff in the

- a) Principles of on-the-floor teaching of junior medical staff
- b) Principles of a topical program for junior medical staff
- c) Principles of on-the-floor supervision of junior medical staff

Specialist training

Demonstrate knowledge of the principles of the following issues with regard to specialist training in emergency medicine

- a) Appropriate structure of a training program in emergency medicine
- b) Fellowship examination teaching program and curriculum
- c) Continuing medical education program
- d) The roles of the Director of Emergency Medicine Training
- e) Providing feedback to trainees
- f) Approach to a problem being experienced by an emergency medicine trainee
- g) The approach to a poorly performing trainee
- h) The international differences with regard to training in emergency medicine

Principles of medical education related to competency as an emergency physician

- Demonstrate insight into their limitations of expertise via self assessment
- Demonstrate knowledge of the principles of adult learning
- Demonstrate knowledge of the maintenance of competence as an emergency physician.

Non-specialist, nursing and paramedical training

Demonstrate knowledge of the differences between specialist and other forms of education in the ED

- a) Differences between specialist and other forms of education in the ED such as non-specialist, nursing and paramedical training

16. ADMINISTRATION AND MANAGEMENT

Management principles

- a) Responsibility
 - Demonstrate knowledge of potential barriers to the assumption of responsibility for patient care
 - Demonstrate knowledge of the importance of the assumption of overall

responsibility for safe and effective patient care

b) Leadership

- Demonstrate knowledge of the different roles that may be played by a leader
- Demonstrate knowledge of the different skills required by leaders at different levels within an organisation

c) Delegation

- Demonstrate knowledge of the concept of delegation and the features required for successful delegation

d) Management Structures

- Demonstrate knowledge of different types of organisational structures commonly found within hospitals and their relative strengths and weaknesses

e) Planning

- Demonstrate knowledge of the steps required to generate a plan
- Demonstrate knowledge of effective priority setting

f) Communication

- Demonstrate knowledge of the modes of communication commonly used in the ED between the ED and other interfaces in the hospital

g) Supervision

- Demonstrate the ability to appropriately supervise other staff members, including how to give clear instructions

Physical

a) Design

- Demonstrate knowledge of the desirable features of an ED with reference to the following items
 1. Site selection, access points, parking and visibility, and relationships to other departments
 2. Internal layout, patient flow, security features and privacy
 3. Area/size, number and type of treatment areas appropriate for case mix, staffing and ED length of stay
 4. Fire and local government regulations and how they may influence design
 5. Short stay unit
 6. Signage appropriate for case mix
 7. Staff facilities, including rest areas and educational facilities

b) Equipment

- Demonstrate knowledge of the steps involved in equipment selection and acquisition
- Demonstrate knowledge of the steps required to manage equipment

failure

- c) Computers and information management systems
 - Demonstrate knowledge of the principles of operation of the systems commonly used to manage patients in the ED including patient tracking, investigation ordering and results, medical record generation, decision support, and referral systems
 - Demonstrate knowledge of the benefits and risks of electronic vs. paper based storage of health information
- d) Ergonomics, occupational health and safety
 - Demonstrate knowledge of the principles of occupational health and safety and how they may affect ED design
- e) Communications systems
 - Demonstrate knowledge of the communications features commonly utilised in the design of an ED

Staff

- a) Job descriptions
 - Demonstrate knowledge of the roles of key members of ED staff
 - Demonstrate knowledge of the key competencies required by staff to effectively perform their tasks
- b) Staff assessment and appraisal
 - Demonstrate the ability to adequately evaluate staff performance and provide effective feedback to staff members regarding their performance
 - Demonstrate the ability to receive feedback and to modify their behaviour to improve their own performance
- c) Conflict
 - Demonstrate knowledge of the sources and consequences of conflict and the techniques commonly used to resolve conflict
- d) Harassment and discrimination
 - Demonstrate knowledge of the principles for protection of staff from various forms of harassment and discrimination
- e) Stress
 - Demonstrate knowledge of the common sources of personal and work-related stress
- f) Motivation
 - Demonstrate knowledge of the theories underlying personal motivation and reward systems
- g) Teams
 - Demonstrate knowledge of the advantages and disadvantages of teams and committees
 - Demonstrate knowledge of the different roles that team members may

perform

- Demonstrate knowledge of the different phases of team development
- Demonstrate knowledge of the roles and responsibilities of other professionals in the provision of emergency health care.
- Demonstrate the capacity to effectively work with others to assess, plan, provide and integrate care for patients
- Demonstrate the capacity to effectively work with others to assess, plan, provide and review research problems, educational work, program review or administrative responsibilities

h) Roster

- Demonstrate knowledge of the factors that should be considered in the construction of a staff roster for an ED
- Demonstrate knowledge of the factors that influence the staffing requirements of an ED

Financial

a) Principles

1. Budgets

- Demonstrate knowledge of the functions of budgets within an organisation
- Demonstrate knowledge of the principles of budget management

2. Cost-effectiveness

- Demonstrate knowledge of the principles of cost effectiveness analysis and the potential limitations of such analyses

3. Funding sources and models

- Demonstrate knowledge of the models commonly used in Pakistan to provide funding to EDs and is able to identify potential sources of funding for ED operations

b) Capital

- Demonstrate knowledge of the difference between capital and recurrent funding, relative contributions of each to total budgetary position
 1. Building
 2. Equipment

c) Recurrent

- Demonstrate knowledge of the difference between fixed and marginal costs relevant contribution of the following to the total cost of ED operations
 1. Salaries and wages
 2. Consumables
 3. Drugs

4. Investigations
 5. Repair, maintenance and replacement
 6. Education and training
- d) Special projects
- Research funding
 - Demonstrate knowledge of the possible sources of funds for research projects

Hospital environments

- Demonstrate knowledge of the possible differences in staffing, physical facilities, support services and organisational cultures between the following types of hospitals
 - Major referral
 - Urban
 - Regional and rural
 - Remote
 - Other
- Military
- International disaster relief

Quality improvement

- Demonstrate knowledge of the following quality
 - Improvement concepts
1. Principles
 - Pathways
 - Development
 - Implementation
 - Evaluation
 2. Policies and procedures
 3. Clinical audit
 4. Clinical indicators
 5. Process measurement
 6. Outcome measurement
 7. Risk management
 8. Complaints management
 9. Accreditation and verification processes
 10. Patient satisfaction
 - Demonstrate knowledge of the factors associated with patient satisfaction with ED care

11. Task design

- Demonstrate knowledge of the factors that influence the effectiveness of task design

Communications with external groups

- Demonstrate knowledge of the relationship between patient perception and satisfaction
- Demonstrate the ability to manage patients with special needs in an appropriate manner
- Demonstrate the ability to conduct a media interview regarding a medical topic
- Demonstrate knowledge of the importance of good relationships and how these may be achieved, with the following groups
 - a) Interdepartmental relations
 - b) Public relations
 - c) Media relations
 - d) Government relations
 - e) Legal relations
 - Law enforcement
 - Chemical examiner
 - Courts

ED specific management issues

- a) Patient flow, ED overcrowding and access block
 - Demonstrate knowledge of the concepts of process mapping and concepts of patient flow
 - Demonstrate knowledge of the possible causes of ED overcrowding and the possible effects that ED overcrowding may have on patient care
 - Demonstrate knowledge of the factors that may contribute to access block
- b) Observation medicine and short stay units
 - Demonstrate knowledge of the different models of care and observation medicine
 - Demonstrate knowledge of the potential benefits and limitations of a short-stay unit associated with the ED
 - Demonstrate knowledge of the types of cases that may be suitable for admission to a short-stay unit

17. RESEARCH AND LITERATURE APPRAISAL

Principles of research

- Demonstrate knowledge of the importance of accurate data collection on the validity of a scientific work
- Demonstrate knowledge of the importance of how the presentation of data may influence the perception of study results
- Demonstrate knowledge of the importance of honesty in research and how competing interests may influence research

- Demonstrate knowledge of the importance of randomisation in differentiating between cause and association
- Hypothesis formulation and testing
- Demonstrate knowledge of the generation of an appropriate hypothesis to answer a research question
- Demonstrate knowledge of the types of error that may occur when testing research hypotheses
- Research ethics
- Consent for research
- Demonstrate knowledge of the process of consent for research NCI H
- Ethics of research
- Demonstrate knowledge of the ethics of medical research

Research methods

Demonstrate knowledge of the following principles of medical research

- a) Sample size
- b) Choice of research method
- c) Enrolment
- d) Randomisation
- e) Concealment of treatment allocation
- f) Bias
- g) Validity
- h) "Gold standard" test

Demonstrate knowledge of the roles, benefits and limitations of the following

1. Trials
2. Meta-analysis
3. Case series and reports
4. Literature reviews
5. Observational studies
6. Letters

Statistical methods

- a) Demonstrate knowledge of the following statistical

Principles

- Sensitivity
- Specificity
- Positive predictive value
- Negative predictive value

- Accuracy
- Relative risk
- Odds ratio
- Confidence intervals
- Statistical significance

b) Usage of statistical methods

- Demonstrate knowledge of the difference between dichotomous, nominal, ranked (ordinal) and continuous variables
- Demonstrate knowledge of the difference techniques used to graphically display or plot data from dichotomous, nominal, ranked (ordinal) and continuous variables
- Demonstrate knowledge of the difference between parametric and non-parametric data
- Demonstrate knowledge of the difference between paired and non paired data
- Demonstrate knowledge of the difference between descriptive and comparative statistics
- Demonstrate knowledge of distributions of continuous variables and the terms used to describe these distributions
- Demonstrate knowledge of the principles and practical application of the following comparative statistical tests
 - Student's t test
 - Mann Whitney U test
 - Chi squared test
 - Sign test
 - ANOVA
 - Correlation coefficients
 - Tests of agreement
 - Multiple regression

c) Measurement accuracy

- Demonstrate knowledge of confidence intervals in data reporting
- Demonstrate knowledge of the standard error of the mean

d) Significance

- Demonstrate knowledge of the difference between clinical and statistical significance

e) Bayes' theorem

- Demonstrate knowledge of the principles and practical application of Bayes' theorem, including the following terms
 - Prior probability
 - Post-test probability

- Likelihood ratios (positive and negative)
- Demonstrate knowledge of the limitations of Bayes' theorem in clinical practice

Literature evaluation

- a) Evidence-based medicine
 - Demonstrate knowledge of the principles, practical application and limitations of evidence-based medicine
- b) Clinical application of research
 - Demonstrate knowledge of the potential barriers to the adoption of research findings into clinical practice
- c) Critical appraisal of emergency medicine specific literature
 - Demonstrate the knowledge and skills to accurately and critically appraise the emergency medicine specific literature.
- d) Is able to effectively critically appraise retrieved evidence in order to address a clinical question