Curriculum for M.D
Emergency Medicine

1. PRINCIPLES OF EMERGENCY MEDICINE

1.1 Definitions and Background

Demonstrate knowledge of the following definitions.

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

1.2 History of Emergency Medicine

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

1.3 Triage

Demonstrate knowledge of the principles of the following

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

1.4 Epidemiology

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

1.5 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.

1.6 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.

1.7 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
    i) Neglect, failure to thrive
    ii) Physical abuse
    iii) Sexual abuse
    iv) Psychological Abuse

2. **RESUSSCITATION**

2.1 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
    i) laryngeal mask
    ii) other
f) Needle/surgical cricothyroidotomy
g) Tracheostomy
h) Tracheal suctioning

2.2 Airway Management

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

iii) h) Non-invasive ventilation

2.3 Life Support
- a) Cardiac arrest
- b) Basic life support
- c) ACLS drugs and algorithms
- d) Defibrillation
- e) Special arrest situations
  - i) Paediatric
  - ii) Trauma M
  - iii) Hypothermia
  - iv) Out-of-hospital

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

2.5 Shock
- a) Intravenous fluid composition and therapy
  - i) High volume intravenous infusion techniques
  - ii) Auto transfusion
- b) Peripheral venous access
  - i) Accessing indwelling vascular devices
  - ii) Vascular access techniques in infants & children
- c) Central venous access
  - i) Subclavian
  - ii) Internal jugular
  - iii) Femoral
  - iv) Cubital
- d) Central venous pressure measurement
- e) Alternative venous access
  - i) Intraosseus
  - ii) Peripheral venous cut down
- f) Inotropes
- g) Pressors
- h) Arterial puncture and cannulation
- i) Endotracheal drug delivery
- j) MAST suit

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

2.7 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

3.1 General Anaesthetic Techniques
- a) Intravenous induction and maintenance agents
- b) Muscle relaxants
  - i) Depolarising
  - ii) Non-depolarising
- c) Inhalational anaesthetic agents (including nitrous oxide)
- d) Drugs for conscious sedation

3.2 Local Anaesthetic Techniques
- a) Local anaesthetic pharmacology and toxicity
- b) Regional nerve blocks
  - i) Digital
  - ii) Wrist
  - iii) Brachial plexus
  - iv) Femoral
  - v) Facial
  - vi) Foot
- c) Intravenous regional anaesthesia
- d) Local anaesthetic adjuncts and alternatives

3.3 Pain Management
- a) Acute pain management
  - ii) Methods of delivery
  - iii) Adjuncts
- b) Chronic pain management
- c) Pain scores

3.4 Procedural Analgesia and Sedation

4. MEDICINE

4.1 Cardiovascular
- a) Clinical examination of the cardiovascular system
- b) Interpretation of symptoms and clinical signs of the cardiovascular system

c) Acute coronary syndromes (ACS)
    i) Approach to the patient with chest pain
    ii) Prehospital management
    iii) Low-risk chest pain
    iv) Stable angina
    v) Unstable angina
    vi) Myocardial infarction
    vii) Right ventricular myocardial infarction
    viii) Thombolysis in myocardial infarction
    ix) Left ventricular failure and Cardiogenic shock in the setting of myocardial infarction
    x) Interventional cardiology in acute coronary syndromes
    xi) Pharmacological agents used in acute coronary syndromes
    xii) Interpreting the ECG in the setting of acute coronary syndromes
    xiii) ST elevation in the absence of myocardial infarction
    xiv) An understanding of the major trials in acute coronary syndromes
    xv) Current research in ACS
    xvi) Chest pain pathways
    xvii) Chest pain units
d) Syncope
    i) Differential diagnosis
    ii) Identification of at-risk groups
    iii) Management and disposition
e) Congestive cardiac failure
f) Valvular disorders
    i) Aortic
    ii) Mitral
    iii) Tricuspid
    iv) Pulmonary
    v) Conditions that are associated with valvular disorders
g) Disorders of the myocardium
    i) Cardiomyopathy
    ii) Aneurysm
    iii) Atrial septal defect
    iv) Ventricular septal defect
    v) Dextrocardia
h) Disorders of the pericardium
    i) Acute Pericarditis
    ii) Constrictive Pericarditis
    iii) Pericardial effusion

iv) Pericardial Tamponade
v) Pericardiocentesis

i) Cardiogenic shock
j) Hypertension
i) Urgencies
ii) Emergencies
iii) Pharmacological agents used to treat hypertension
k) Disturbances of cardiac rhythm
i) Mechanisms of arrhythmias
ii) Bradycardias
i. sinus Bradycardia
ii. heart block
iii. other bradycardias
iii) Tachycardia
i. narrow complex regular
ii. narrow complex irregular
iii. wide complex regular
iv. wide complex irregular
v. Torsade des pointes
vi. ventricular fibrillation
iv) Ectopy
i. narrow complex
ii. wide complex
v) Accessory pathways
i. Wolff-Parkinson-White syndrome
ii. other
vi) Electrophysiological testing
vii) Drugs associated with cardiac arrhythmias
viii) Pharmacological agents used to treat arrhythmias
ix) International guidelines for the management of arrhythmias
l) Implantable cardiac devices (ICDs)
i) Implantable pacemakers
ii) Implantable defibrillators
iii) Complications of ICDs
m) External and internal emergent cardiac pacing
n) Disorders of the peripheral vasculature
i) Deep venous thrombosis
ii) Pulmonary embolism
iii) Mesenteric ischaemia
o) Cardiac transplantation
p) Endocarditis
q) Tumours
r) Congenital heart disease

i) Cyanotic heart disease

s) Rheumatic fever

4.2 Respiratory

a) Clinical examination of the respiratory system

b) Interpretation of symptoms and clinical signs of the signs of the respiratory system

c) Respiratory failure

d) Upper airway obstruction

e) Infectious diseases

i) Croup

ii) Bronchitis

iii) Pneumonia

iv) Empyema

f) Aspiration

g) Acute lung injury/respiratory distress syndrome

h) Asthma

i) Pneumothorax

j) Inter-costal catheter insertion

k) Pneumomediastinum

l) Chronic obstructive pulmonary disease

m) Pleural effusions

n) Needle thoracocentesis

o) Haemoptysis

p) Cavitating lung lesions

q) Isolated “coin” lesions on chest x-ray

r) Disorders of the chest wall

s) Disorders of the mediastinum

t) The respiratory effects of obesity

u) Sleep apnoea

v) Lung transplants

w) Neoplastic disorders

x) Congenital/neonatal

i) Bronchopulmonary dysplasia

ii) Cystic fibrosis

4.3 Gastrointestinal

a) Clinical examination of the gastrointestinal system

Interpretation of the symptoms and clinical signs of the gastrointestinal system

c) Gastrointestinal bleeding

i) Indications for urgent Gastroscopy

ii) Techniques used with Gastroscopy to control haemorrhage

iii) Pharmacological agents used in management toxicological agents iv) Oesophageal varices

v) Balloon Tamponade of Gastro oesophageal varices

vi) Peptic ulceration
vii) Angiodysplasia of the colon

d) Oesophageal disorders
i) Infectious disorders
ii) Oesophagitis
iii) Gastroesophageal reflux
iv) Motor abnormalities
v) Mallory-Weiss syndrome
vi) Stricture and Stenosis
vii) Tracheo-oesophageal fistula
viii) Neoplastic disorders

e) Peptic ulcer disease and gastritis
f) Feeding tube management
g) Inflammatory bowel disease
h) Irritable bowel syndrome
i) Infectious disorders and gastroenteritis
j) Hepatic disorders
i) Jaundice
ii) Interpretation of liver function tests
iii) Hepatic failure
iv) Hepatitis
v) Other infectious disorders of the liver
vi) Vascular disorders
vii) Liver transplant patient
viii) Alcoholic liver disease
ix) Hepato-renal syndrome
x) Portal hypertension

k) Abdominal Paracentesis

4.4 Neurological

a) Clinical examination of the neurological system
b) Interpretation of symptoms and clinical signs of the neurological system
c) Disorders of the cranial nerves
i) Facial nerve paralysis
ii) Other

d) Headache and facial pain
i) Pharmacological agents
ii) Indications for imaging (CT, MRI)
iii) Migraine
iv) Cluster headache
v) Tension headache
vi) Raised intracranial pressure
vii) Temporal Arteritis
viii) Neuralgia
ix) TMJ syndrome

e) Cerebrovascular accident (CVA)
    i) Transient ischaemic attacks
    ii) RINDS
    iii) Thrombotic CVA
    iv) Embolic CVA
    v) Haemorrhagic CVA
    vi) Cerebellar CVA
    vii) Thombolysis in CVA
    viii) CVA and hypertension
    ix) Syndromes of CVA
        i. Anterior cerebral artery
        ii. Middle cerebral artery
        iii. Posterior inferior cerebellar artery syndrome
        iv. Lacunar syndrome
        v. Midbrain, pontine and brainstem syndromes
    x) Stroke units
f) Altered mental state
    i) Coma
    ii) Acute brain syndrome
    iii) Dementia
    iv) Memory disorders
g) Approach to ataxia and gait disturbances
h) Seizures
i) Status Epilepticus
j) Dystonic reactions
k) Lumbar puncture
l) Interpretation of CSF fluid
biochemistry, cell count and microbiology
m) Infectious disorders of the CNS and PNS
    i) Meningitis
    ii) Encephalitis
    iii) Abscess
    iv) Tuberculosis
    v) Toxoplasmosis
    vi) Cryptococcal infection
    vii) HIV
n) Guillain-Barre syndrome
o) Multiple sclerosis
p) Myasthenia gravis & Eaton- Lambert syndrome
q) Botulism
r) Diphtheria
s) Tetanus
t) Motor neurone disease
u) Peripheral neuropathy
v) Disorders of the peripheral nervous system
    i) Peripheral nerve lesions

ii) Brachial plexus syndrome

w) Myopathy
x) Periodic paralysis
y) Parkinson's disease
z) Hydrocephalus
i) Complications of the central nervous system devices
ii) Disorders of the spinal cord
iii) Medical problems in patient with spinal injury
iv) Paraneoplastic disorders of the CNS and PNS

4.5 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
i) Acute adrenal insufficiency (adrenal crisis)
ii) Congenital adrenal insufficiency
iii) Cushing's disease
iv) Conn's syndrome
v) Phaeochromocytoma
i) Thyroid disorders
i) Urgencies associated with thyroid disorders
ii) Thyroid storm
iii) Hypothyroid crisis
j) Pituitary disorders
i) Panhypopituitarism
k) Parathyroid disorders

4.6 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

4.7 Oncology

a) Clinical examination in patients suspected of having a malignancy
b) Interpretation of symptoms and clinical signs associated with malignancy
c) Complications of chemotherapeutic agents
d) Complications related to local tumour involvement
    i) Acute spinal cord compression
    ii) Upper airway obstruction
    iii) Malignant pericardial effusion
    iv) Superior vena cava syndrome
    v) Pan coast's syndrome
e) Hyperviscosity syndrome
f) Complications related to myelosuppression
    i) Febrile neutropenia
    ii) Immunosuppression and opportunistic infections
    iii) Thrombocytopaenia and haemorrhage
g) Malignancies specific to organ systems
h) Paraneoplastic syndromes

4.8 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
    i) UTI
    ii) Prostatitis
    iii) Pyelonephritis
    iv) Infected obstructed kidney
g) Acute renal failure
h) Chronic renal failure
i) Hyperkalaemia in renal failure
j) Renal dialysis
    i) Peritoneal
    ii) Intermittent haemodialysis
    iii) Continual renal replacement therapies
    iv) Complications of renal dialysis
k) Renal transplant
l) Haemolytic uremic syndrome
m) Rhabdomyolysis

n) Polycystic kidney disease

4.9 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 arthopathies
g) Urgencies and emergencies in systemic rheumatic disease
h) Thoracic and lumbar pain
i) Neck pain
j) Shoulder pain
k) Tunnel syndromes
    i) Carpal tunnel
    ii) Ulnar tunnel
    iii) Tarsal tunnel
l) Complications of drugs used on rheumatic disease

4.10 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
    i) Erythema multiforme
    ii) Erythema nodosum
    iii) Others
i) Papular and nodular rashes
j) Petechial and purpuric rashes
k) Vesicular and bullous rashes
    i) Pemphigus
    ii) Pemphigoid
    iii) Staphylococcal scalded skin syndrome
    iv) Stevens-Johnson syndrome
    v) Toxic epidermal necrolysis
    vi) Herpetic infections
    vii) Others
l) Ulceration
m) Cellulitis
n) Dermatological manifestations of underlying systemic disease

o) Dermatological manifestations of neoplastic disorders

4.11 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
    i) 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
    i) Malaria
    ii) Dengue fever
    iii) Haemorrhagic fevers
    iv) Typhoid
    v) Others
    v) Bacterial
    i) Food poisoning
    ii) Meningococcemia
    iii) Disseminated gonococcal infection
    iv) Tuberculosis and other mycobacterial infections
    v) Gas gangrene
    vi) Necrotising fasciitis
    vii) Fournier's gangrene
    viii) Diphtheria DIS G
    ix) Haemophilus influenzae
w) Sexually transmitted infections
x) Viral
    i) HIV DIS H
    ii) Infectious mononucleosis

iii) Influenza/parainfluenza
iv) Herpes simplex
v) Herpes zoster

y) Mycoplasma infections
z) Fungal infections
i) Protozoal infections
ii) Tick-borne infections
iii) Infection from a marine source
iv) Infection in the burns patient
v) Biologic weapons

4.12 Immunology

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

4.13 Metabolic

a) Volumes and composition of the
i) Total body water
ii) Intracellular fluid
iii) Extracellular fluid
iv) Plasma
v) Blood
b) Electrolytes
i) Hypokalaemia
ii) Hyperkalaemia
iii) Hyponatraemia
iv) Hypernatraemia
v) Hypocalcaemia

vi) Hypercalcaemia
vii) Hypermagnesaemia
viii) Hypomagnesaemia
ix) Hyperphosphataemia
x) Hypochloraemia
xi) Hyperchloraemia
xii) Inappropriate ADH syndrome
xiii) Interpretation of the electrocardiograph in electrolyte disturbance

4.14 Acid Base Disorders
a) Interpretation of arterial blood gases
i) Alveolar gas equation
ii) 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

4.15 Neonates and Infants
a) Apnoea of prematurity
b) Hyperbilirubinaemia
c) Feeding problems
d) Congenital heart disease
e) Diaphragmatic hernia DIS G Congenital syndromes
g) Gastroesophaegeal reflux
h) Metabolic disease
i) Necrotising enterocolitis
j) Respiratory distress
k) Seizures
l) Infections/sepsis
i) Occult bacteraemia
m) Sudden infant death syndrome

5. SURGICAL

5.1 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
    i) Assessment and management of head trauma
    ii) Scalp lacerations
    iii) Skull fractures
    iv) Extradural haematoma
    v) Subdural haematoma
    vi) Intracerebral haematoma
    vii) Diffuse axonal injury
    viii) Penetrating head injury
    ix) Minor head injury
    x) Post concussive syndrome
    xi) Emergency department drainage of traumatic intracranial haematomas
k) Chest trauma
    i) Assessment and management of chest trauma
    ii) Pneumothorax
    iii) Haemothorax
    iv) Pulmonary contusion
    v) Myocardial contusion
    vi) Fractured ribs
    vii) Fractured sternum
    viii) Flail chest
    ix) Pericardial Tamponade
    x) Tracheobronchial rupture
    xi) Oesophageal perforation
    xii) Diaphragmatic rupture
    xiii) Great vessel injury
    xiv) Penetrating thoracic injury
    xv) Emergency department thoracotomy
    xvi) Traumatic asphyxia
l) Abdominal trauma
    i) Assessment and management of abdominal trauma
    ii) Diagnostic peritoneal lavage
    iii) Splenic injury
    iv) Hepatic injury
    v) Renal injury
    vi) Pancreatic injury
    vii) Hollow viscus injury
    viii) Great vessel injury
    ix) Penetrating abdominal injury
    x) Abdominal compartment syndrome
m) Genitourinary trauma
    i) Assessment and management of genitourinary

trauma
ii) Ureteric injury
iii) Urethral injury
iv) Bladder injury
v) Penile rupture
vi) Testicular trauma
vii) Penetrating genitourinary injury

n) Pelvic trauma
    i) Assessment and management of pelvic trauma
    ii) Major pelvic fracture
    iii) Exsanguinating pelvic injury

o) Spinal cord injury
    i) Assessment and management of spinal cord injury
    ii) Spinal cord syndromes
    iii) SCIWORA

p) Neck trauma
    i) Assessment and management of neck trauma
    ii) Penetrating neck injury
    iii) Laryngotracheal injury
    iv) Vascular injury
    v) Nerve injury

q) Maxillofacial trauma
    i) Assessment and management of maxillofacial trauma
    ii) Facial lacerations
    iii) Nasal fractures
    iv) Mandibular fractures
    v) Le Fort fractures
    vi) Zygomatic fractures
    vii) Orbital injury
    viii) Temporal bone fractures
    ix) Dental trauma
    x) Tooth avulsion
    xi) Intraoral lacerations

r) Extremity trauma
    i) Assessment and management of extremity trauma
    ii) Traumatic amputation
    iii) Arterial injury
    iv) Compartment syndromes
    v) Crush syndrome

s) Trauma in pregnancy
    i) Assessment and management of trauma in pregnancy
    ii) Obstetric complications of trauma
    iii) Uterine rupture
    iv) Perimortem caesarean section

t) Trauma in children
    i) Assessment and management of trauma in children

ii) Paediatric aspects of trauma management
iii) Non-accidental injury

5.2 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

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

5.4 Thoracic
- a) Spontaneous pneumothorax
- b) Pneumomediastinum
- c) Mediastinitis
- d) Oesophageal perforation
- e) Mediastinal masses
- f) Oesophageal foreign body
- g) Tracheobronchial foreign body
- h) Congenital
    - i) Diaphragmatic hernia
    - ii) Oesophageal
    - iii) Tracheobronchial
    - iv) Vascular ring

5.5 Abdominal
- a) Assessment and management of abdominal pain
- b) Pancreatitis
- c) Cholelithiasis
- d) Cholecystitis
- e) Cholangitis
- f) Non-traumatic splenic rupture
- g) Bowel obstruction
    - i) Post-surgical adhesions
    - ii) Malrotation
    - iii) Volvulus

iv) Congenital pyloric Stenosis
v) Intussusception
vi) 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

5.7 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

5.8 Vascular

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

5.9 Orthopaedic and Hand

a) General principles of fracture management
b) Paediatric considerations in orthopaedics
i) Salter-Harris classification
ii) Injuries about the elbow

iii) The child with a limp
iv) Bone dysplasia
v) Connective tissue syndrome
vi) Inflammatory arthritis
vii) Injury rehabilitation
viii) Metabolic bone abnormalities
ix) Osgood Schlatter disease
x) Perthe's disease
xi) Slipped capital femoral epiphysis
xii) Transient synovitis
xiii) Developmental hip dislocation

c) Casting techniques
i) Short arm POP
ii) Long arm POP
iii) Short arm backslab
iv) Scaphoid POP
v) Bennett's fracture POP
vi) Volar splint
vii) U Slab
viii) Short leg POP
ix) Long leg cylinder

d) Splintage techniques including splintage procedures
i) Application of a broad arm sling
ii) Application of a collar and cuff
iii) Application of a figure-of-8 bandaging
iv) Application of a knee immobiliser
v) Application of a Donway/ Hare splint
vi) Application of a Thomas splint
vii) Pelvic stabilisation techniques

e) Fractures
i) Clavicle
ii) Scapula
iii) Proximal Humerus
iv) Elbow
v) Forearm bones
vi) Wrist
vii) Carpal bones
viii) Spine
ix) Pelvis and hip
i. Pelvic fractures
ii. Sacral fractures
iii. Coccygeal fractures
iv. Femoral neck fractures
x) Hip and femur
i. Femoral shaft fractures
ii. Supracondylar fractures

iii. Condylar fractures
iv. Fractured patella
xi) Tibia and fibula
xii) Ankle
i. Classification of ankle fractures
xiii) Foot
i. Talar fractures
ii. Calcaneal fractures
iii. Tarsal bone fractures
iv. Metatarsal fractures
v. Phalangeal fractures

f) Dislocations
i) Shoulder
ii) Acromioclavicular joint
iii) Elbow
iv) Pulled elbow
v) Carpal–metacarpal bones
vi) Phalanges
vii) Cervical spine
i. Atlantoaxial
ii. Facet joint
viii) Hip
ix) Knee
x) Patella
xi) Ankle
xii) Foot
xiii) Tarsal
xiv) Metatarsal
xv) Phalangeal

g) Soft tissues
i) Shoulder
i. Rotator cuff tears
ii. Bursitis
iii. Tendinitis
ii) Elbow
i. Bursitis
ii. Tendinitis
iii) Knee
i. Bursitis
ii. Ligament injury
iii. Cruciate injury
iv. Menisceal injury
v. Bakers cyst
iv) Ankle
i. Ligament injury
v) Foot

i. Foot injury

h) Hand injuries

i) Metacarpal fractures/dislocations
ii) Phalangeal fractures/dislocations
iii) Lacerations
iv) Nail injuries
v) Extensor tendon injuries
vi) Mallet finger
vii) Boutonniere deformity
viii) Other
ix) Flexor tendon injuries
x) Infections

i. Paronychia

ii. Infective tenosynovitis DIS H
iii. Other
xi) Foreign bodies
xii) Amputations
xiii) Nerve injuries
xiv) High pressure injection injuries
xv) Crush injury
i) Overuse syndromes

j) Osteomyelitis
k) Septic arthritis
l) Complex regional pain syndrome type 1 (Sudeck's atrophy)

5.10 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

5.11 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
    i) Epididymitis
    ii) Orchitis
    iii) Testicular torsion
    iv) Torsion of the testicular appendage
m) Priapism
n) Phimosis/Paraphimosis

5.12 ENT
a) Ear
    i) Auroscopes
    ii) Otalgia
    iii) Otitis media
    iv) Otitis Externa
    v) Aural toilet/wick insertion
    vi) Cholesteatoma
    vii) Perforated tympanic membrane
    viii) Chondritis/perichondritis
    ix) Mastoiditis
    x) Labyrinthitis
    xi) Meniere's disease
b) Nose
    i) Epistaxis
        - Anterior packing
        - Cautery
        - Posterior packing
        - Balloon placement
    ii) Sinusitis
c) Throat/oropharynx
    i) Ludwig's angina
    ii) Stomatitis
    iii) Pharyngitis
    iv) Tonsillitis
    v) Peritonsillar abscess
    vi) Retropharyngeal abscess
    vii) Epiglottitis
    viii) Laryngitis
    ix) Tracheitis
    x) Post-tonsillectomy bleed
d) Foreign bodies
    i) Nasal
    ii) Aural

iii) Upper airway
iv) Pharyngeal

5.13 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
i) Blepharitis
ii) Dacryocystitis
iii) Conjunctivitis
iv) Corneal abrasions
v) Corneal ulcers
vi) Keratitis
vii) Foreign bodies
- Conjunctival
- Corneal

viii) Spontaneous subconjuctival haemorrhage
ix) Amblyopia
x) Ocular burns
- Caustic
- Flash burns
- Thermal

H) Anterior pole
i) Glaucoma
ii) Uveitis
I) Posterior pole
i) Retinal detachment
ii) Vitreous haemorrhage
iii) Retinal haemorrhage
iv) Retinal vascular occlusions
v) Optic neuritis
J) Orbit
i) Cellulitis
- Orbital
- Pre-orbital
- Endophthalmitis

ii) Ocular trauma
- Blunt
- Penetrating

5.14 Wound management
a) Classification of wounds

b) Surgical wound management
c) Basic wound closure techniques
d) Wound dressings Wound infections
f) Chronic ulcers
g) Special wounds
    i) Puncture wounds
    ii) Bites and stings
    iii) Blast injury
    iv) Degloving injury
    v) Amputations

5.15 Plastics
a) Plastic surgical techniques
    i) Grafts
    ii) Flaps
    iii) Advanced wound closure

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

6. OBSTETRICS AND GYNAECOLOGY

6.1 Pregnancy
a) Normal pregnancy
    i) Antenatal screening
    ii) Physiological changes
    iii) Foetal development
b) High risk pregnancy
c) Complications of pregnancy
    i) Hyper-emesis Gravidarum
    ii) Miscarriage
    iii) Anembryonic pregnancy
    iv) Septic abortion
    v) Ectopic pregnancy
    vi) HELLP syndrome (haemolysis, elevated liver enzymes, low platelets)
    vii) First trimester bleeding
    viii) Haemorrhage, ante partum
        - Abruptio Placentae
        - Placenta Previa, vasa Previa
        - Other
    ix) Infections, including urinary tract infection
    x) Fevers

xi) Isoimmunisation
xii) Pregnancy-induced hypertension, pre-Eclampsia

d) Normal labour and delivery

e) Complications of labour
- i) Foetal distress
- ii) Premature labour
- iii) Premature rupture of membranes
- iv) Other

f) Complications of delivery
- i) Mal-presentation
- ii) Mal-position
- iii) Nuchal cord
- iv) Prolapsed cord
- v) Rupture or inversion of uterus
- vi) Retained placenta
- vii) Other

g) Post-partum complications
- i) Haemorrhage, postpartum
  - Primary
  - Secondary
  - Endometriosis
  - Retained products of conception

h) Drugs in pregnancy

6.2 Gynaecology

a) Vagina and vulva
- i) Bimanual and vaginal speculum examination
- ii) Vaginitis/Vulvovaginitis
- iii) Foreign body
- iv) Bartholin cyst/abscess
- v) Other

b) Uterus
- i) Dysmenorrhoea
- ii) Dysfunctional uterine bleeding
- iii) Cervicitis, endocervicitis
- iv) Endometriosis
- v) Tumours
  - Leiomyoma
  - Gestational trophoblastic disease
  - Other
  - Prolapse

c) Ovaries
- i) Cysts and cyst complications
- ii) Mittelschmerz
- iii) Tumours
- iv) Ovarian hyper stimulation syndrome

d) Infections
    i) Pelvic inflammatory disease
    ii) Fitz-Hugh-Curtis syndrome
    iii) Tubo-ovarian abscess
    iv) Herpes simplex
    v) Human papilloma virus
e) Contraception
    i) Complications
    ii) Post-coital
f) Sexual assault

7. PSYCHIATRY

7.1 Evaluation
a) History
b) Physical examination
c) Investigations

7.2 Organic brain syndrome

7.3 Violent/agitated behaviour
a) Prevention
b) Safety issues
c) Restraint options and management

7.4 Deliberate self-harm

7.5 Depression

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

7.7 Psychoses
a) Acute and chronic
b) Bipolar effective disorder
c) Schizophrenia
d) Mania and hypomania
e) Other

7.8 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

7.9 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

7.10 Therapy
a) Pharmacology of therapeutic agents
i) Benzodiazepines
ii) Anti-psychotics
iii) Antidepressants
iv) SSRIs
v) Sedatives
vi) Other
b) Non-pharmacologic therapy
i) ECT – complications
ii) Other

7.11 Involuntary detention
a) Legal aspects of mental health care

8. TOXICOLOGY

8.1 General principles
a) Prehospital care
b) Epidemiology and prevention of poisoning
c) Management issues
i) Emesis
ii) Gastric lavage
iii) Activated charcoal
iv) Cathartics
v) Whole bowel irrigation

e) Risk assessment/prediction of toxicity
f) Toxidromes

8.2 Analytical toxicology
a) Principles
b) Drug testing and screening

8.3 Chemical dependency and substance abuse
a) Drug abuse
b) Drug dependence
c) Drug withdrawal
d) Tolerance

8.4 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

8.5 Anti-inflammatory agents and analgesic poisoning
a) Paracetamol
b) NSAIDs
c) Salicylate
d) Gout drugs
e) Opioids

8.6 Antimicrobial poisoning
a) Antibiotics
b) Antifungal
c) Antiparasitic
d) Antiseptics
e) Antiviral

f) Anti-tuberculous

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

8.8 CNS drugs and muscle relaxant poisoning
- a) Alcohols
- b) Anticonvulsants
- c) GHB and related compounds
- d) Anti-Parkinsonian drugs
- e) Psychiatric drugs
  - i) Antipsychotic agents
  - ii) Antidepressants
  - iii) Lithium
- f) Hallucinogens
- g) Sedatives, hypnotics, anxiolytics
- h) Smooth muscle relaxants

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

8.10 Environmental toxicology
- a) Plant ingestions

8.11 GI agents
- a) Antacids
- b) Antidiarrhoeals
- c) Laxatives

8.12 Industrial toxicology
- a) Metals
  - i) Arsenic
  - ii) Lead
  - iii) Mercury
  - iv) Metal fumes
  - v) Other
- b) Toxic gases
  - i) CO

ii) Chlorine
iii) CO2
iv) Cyanide
v) Hydrogen sulphide
vi) Hydrocarbons
vii) Phosgene

c) Hydrogen fluoride/hydrofluoric acid
d) Nitrites

8.13 Pesticides, herbicides and Rodenticide poisoning
a) Organophosphates
b) Carbamates
c) Glyphosate
d) Paraquat
e) Naphthalene/camphor
f) Strychnine
g) Phosphine
h) Super Warfarin

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

8.15 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

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

9.2 Cold
- a) Hypothermia
- b) Frostbite

9.3 Venomous bites and stings
- a) Snakes
- b) Spiders
- c) Hymenoptera – bees, wasps, ants
- d) Jellyfish
- e) Stinging fish
- f) Blue-ringed octopus
- g) Other

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

9.5 Electricity
- a) Electric shock
- b) Lightning strike

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

9.7 Exercise-associated illness

10. RADIOLOGY IN EMERGENCY MEDICINE

10.1 Physics

10.2 Safety issues/requirements

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

10.4 Indications, techniques and interpretation of common studies in emergency medicine

a) Plain radiology
    i) Trauma series (chest, pelvis, cervical spine)
    ii) Chest
    iii) Abdomen
    iv) Limbs
    v) Spine
        - Cervical
        - Thoracic
        - Lumbo-sacral
        - Skull and facial skeleton
        - Soft tissue

b) Contrast radiology
    i) Angiography
        - Cerebral
        - Cardiac
        - Limb
        - Abdominal
        - Pulmonary
    ii) IVP
    iii) Cystography and urethrography
    iv) GIT

c) Computed tomography (CT)
    i) Brain
    ii) C-spine
    iii) Thoracic and lumbar spine
    iv) Chest
        i. CT pulmonary angiography
    v) Abdomen
        i. CT urography
    vi) Limbs and joints
    vii) Facial bones

d) Magnetic resonance imaging (MRI)
    i) Brain
    ii) Spine
    iii) Other

e) Nuclear medicine
    i) Ventilation/perfusion scans
    ii) Bone scans
    iii) Cardiac scans
    iv) Infection and inflammation scans
    v) GIT scans

f) Ultrasound
    i) Focussed abdominal sonography in trauma (FAST)
    ii) Vascular doppler and duplex
    iii) Abdominal

iv) Pelvic, including pregnancy
v) Limb
vi) Echocardiography

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

11. LEGAL

11.1 Duty of care
a) Individual doctor Demonstrate knowledge of the term "duty of care"
b) Hospital
Demonstrate knowledge of the role of the practitioner within a health service in providing care on behalf of the health service

11.2 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

11.3 Consent
Demonstrate knowledge of the following concepts in relation to consent
a) Legal definition of "emergency"
b) Capacity to consent
i) Children and adolescents
ii) Intellectually disabled
iii) Mentally ill
iv) Impaired by drugs or alcohol
v) Impaired by physical illness
d) Valid consent
e) Implied consent
f) Verbal consent
g) Written consent
h) Refusal to consent
i) Documentation of the process of consent

11.4 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.

11.5 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

11.6 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.

11.7 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

11.8 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.

11.9 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

11.10 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

11.12 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

11.13 Medical registration authority

Demonstrate knowledge of the role of medical registration authorities

12. CLINICAL RISK MANAGEMENT

12.1 High risk areas

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

12.2 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)

12.3 Consultation

Demonstrate knowledge of the concepts of vertical and horizontal consultation

12.4 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

12.5 Disposition

Demonstrate knowledge of patient disposition from the ED in the following areas

a) Discharge/transfer
b) Follow up
c) Referral

12.6 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

12.7 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

12.8 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

13. PREHOSPITAL AND RETRIEVAL

13.1 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

c) 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

d) 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

e) 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

i) Ambulance
ii) Fire
iii) Police

f) 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

i) Road ambulance
ii) Helicopter

g) Patient assessment in pre hospital care

Demonstrate knowledge of the differences in assessment of a patient between the hospital and the pre hospital environment

h) 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

i) 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

i) Airway and pulmonary resuscitation
ii) Cardiopulmonary resuscitation
iii) Defibrillation

iv) Haemorrhage control
v) Spinal immobilization
vi) Splintage techniques

Demonstrate knowledge of the rationale for the development of intensive care paramedic protocols

j) Controversies in Prehospital care

Demonstrate knowledge of contemporary areas of controversy in Prehospital care

k) Working at an accident scene

Demonstrate knowledge of their role and responsibility as part of the EMS team at an accident scene

i) 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

ii) 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

i) The entrapped patient
ii) Crush syndrome
iii) Field amputation
iv) 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

13.2 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 t o 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

i) Retrieval physician
ii) Retrieval nurse
iii) 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

i) Road ambulance
ii) Rotary wing aircraft
iii) 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

14.1 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

14.2 Disaster planning

a) General principles

i) Disaster management & mitigation

i. Principles of prevention and risk reduction

ii. 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

i) External emergency (Code Brown)

ii) Hospitals as "victims" in an emergency

i. Fire (Code Red) procedures and considerations

ii. Bomb threat (Code Purple) procedures

iii. Evacuation (Code Orange)

iv. Internal emergency (Code Yellow)

v. 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

i) Strategic: The overall command of the incident and
ii) interface between different responding agencies and the community
iii) Planning: The continual evaluation of the incident situation
iv) Financial: Tracking costs and administering the procurement of any necessary resources
iv) Operational: The practical management of incident
v) 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

14.3 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

14.4 Disaster equipment and supplies

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

14.5 Occupational health and safety issues

a) Incident site
    i) Personal protective equipment (incident site)
b) Emergency department
    i) Principles of hazardous materials incidents
    ii) Recognising toxic gas exposures

iii) Chemical personal protective equipment (hospital)
iv) Personal protective equipment for biological hazards

14.6 Disaster site operations
a) Organization of medical operations at an Incident site
b) Adapting clinical management in a disaster
i) Disaster triage
Demonstrate knowledge of the principles of disaster Triage and the national disaster triage standard
ii) Record keeping
iii) Paediatric casualties
Demonstrate knowledge of important triage Considerations with regard to paediatric Casualties and the needs of children involved in an incident

14.7 Mental health & behavioural issues
a) Disaster victims
i) The role of counselling
b) Health professionals and responders
i) Critical incident stress debriefing
ii) Post traumatic stress disorder

14.8 Medical response to terrorist incidents
a) Chemical weapons
i) Choking agents
i. Cyanide
ii. Phosgene
ii) Blistering agents
i. Mustard
iii) Nerve agents
b) Biological weapons
i) Small pox
ii) Anthrax
iii) Botulism
iv) Viral hemorrhagic fevers
c) Radiation emergencies
i) Radiation exposure
Demonstrate knowledge of the different types of radiation exposure and their relative biological impact
ii) Radiation injury
iii) 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

14.9 Disaster exercises

a) Demonstrate knowledge of the role of different types of disaster exercises S G

b) Designing an exercise

i) Practical problems in conducting exercises

ii) Occupational health and safety issues in exercises

iii) The importance of debriefing exercise participants to update disaster plans

15. MEDICAL EDUCATION

15.1 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

15.2 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

15.3 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

15.4 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
d) Continuing medical education program
g) The roles of the Director of Emergency Medicine Training
j) Providing feedback to trainees
k) Approach to a problem being experienced by an emergency medicine trainee
l) The approach to a poorly performing trainee
m) The international differences with regard to training in emergency medicine

15.5 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.

15.6 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

16.1 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

16.2 Physical

a) Design

Demonstrate knowledge of the desirable features of an ED with reference to the following items

i) Site selection, access points, parking and visibility, and relationships to other departments
ii) Internal layout, patient flow, security features and privacy
iii) Area/size, number and type of treatment areas appropriate for case mix, staffing and ED length of stay
iv) Fire and local government regulations and how they may influence design
v) Short stay unit
vi) Signage appropriate for case mix
vii) 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

16.3 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

16.4 Financial

a) Principles

i) Budgets
Demonstrate knowledge of the functions of budgets within an organisation
Demonstrate knowledge of the principles of budget management

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

iii) 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

i) Building

ii) 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

i) Salaries and wages

ii) Consumables

iii) Drugs

iv) Investigations

v) Repair, maintenance and replacement

vi) Education and training

d) Special projects

i) Research funding

Demonstrate knowledge of the possible sources of funds for research projects

16.5 Hospital environments

Demonstrate knowledge of the possible differences in staffing, physical facilities, support services and organisational cultures between the following types of hospitals

a) Major referral

b) Urban

c) Regional and rural

d) Remote

e) Other

i) Military

ii) International disaster relief

16.6 Quality improvement

Demonstrate knowledge of the following quality Improvement concepts

a) Principles

i) Pathways

ii) Development

iii) Implementation

iv) Evaluation

b) Policies and procedures

c) Clinical audit

d) Clinical indicators

e) Process measurement
f) Outcome measurement
g) Risk management
h) Complaints management
i) Accreditation and verification processes
j) Patient satisfaction
    Demonstrate knowledge of the factors associated with patient satisfaction with ED care
k) Task design
    Demonstrate knowledge of the factors that influence the effectiveness of task design

16.7 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
    i) Law enforcement
    ii) Chemical examiner
    iii) Courts

16.8 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

17.1 Principles of research

a) 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

b) 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

c) Research ethics

i) Consent for research

Demonstrate knowledge of the process of consent for research NCI H

ii) Ethics of research

Demonstrate knowledge of the ethics of medical research

17.2 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

i) Trials
ii) Meta-analysis

iii) Case series and reports
iv) Literature reviews
v) Observational studies
vi) Letters

17.3 Statistical methods

a) Demonstrate knowledge of the following statistical principles

i) Sensitivity
ii) Specificity
iii) Positive predictive value
iv) Negative predictive value
v) Accuracy
vi) Relative risk
vii) Odds ratio
viii) Confidence intervals
ix) Statistical significance

b) Usage of statistical methods

i) Demonstrate knowledge of the difference between dichotomous, nominal, ranked (ordinal) and continuous variables
ii) Demonstrate knowledge of the difference techniques used to graphically display or plot data from dichotomous, nominal, ranked (ordinal) and continuous variables
iii) Demonstrate knowledge of the difference between parametric and non-parametric data
iv) Demonstrate knowledge of the difference between paired and non paired data
v) Demonstrate knowledge of the difference between descriptive and comparative statistics
vi) Demonstrate knowledge of distributions of continuous variables and the terms used to describe these distributions
vii) 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

i) Demonstrate knowledge of confidence intervals in data reporting

ii) 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

17.4 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