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1 PRINCIPLES OF EMERGENCY MEDICINE

1.1 Definitions and Background

a. Emergency medicine
b. Emergency department
c. Emergency physician

1.2 Development of Emergency Medical Services

a. History of development of emergency medicine in Hong Kong
b. History of emergency medicine in other countries

1.3 Triage

a. Principles of triage
b. Triage system & guidelines in local emergency department

1.4 Patient care

a. Commitment to deliver patient-centered care
b. Ability to build own knowledge base and think analytically and critically in clinical practice
c. Ability to react timely and appropriately in the management of patients including assessment, diagnosis, treatment, managing complications and rehabilitation
d. Privilege to perform procedures/operations in accordance with local guidelines, and ability to use modern technology effectively
2 RESUSCITATION

2.1 Airway

a. Basic airway maintenance techniques
b. Emergency airway management
c. Identification of the difficult and failed airway
d. Oxygen delivery systems
e. Bag mask ventilation
f. Endotracheal intubation and rapid sequence intubation
g. Alternative/different airway techniques
   i. Laryngeal mask
   ii. Combitube
   iii. Supraglottic devices
   iv. Lighted stylet
   v. Flexible fiberoptic intubation
   vi. Video laryngoscopy
   vii. Blind intubation
   viii. Awake intubation
h. Surgical airway techniques
   i. Needle/surgical cricothyroidotomy
   ii. Tracheostomy
i. Pharmacology of airway management
   i. Pretreatment agents
   ii. Sedative and induction agents
   iii. Neuromuscular blocking agents
j. Monitoring
   i. Confirming endotracheal tube position
   ii. Capnography
   iii. Pulse oximetry
k. Mechanical ventilation
   i. Ventilator used in local emergency department
   ii. Non-invasive ventilation
l. Tracheal suctioning
m. Extubation
2.2 Life Support

a. Pathophysiology of cardiac arrest
b. Basic life support
c. Advanced life support algorithms and pharmacology
d. Defibrillation
e. Post-cardiac arrest syndrome and management
f. Special arrest situations
   i. Toxicology in emergency cardiovascular care
   ii. Paediatric
   iii. Pregnancy
   iv. Trauma
   v. Drowning
   vi. Hypothermia
   vii. Electrical current and lightning injury
   viii. Severe, life-threatening asthma
   ix. Anaphylaxis
   x. Out-of-hospital

2.3 Hemodynamic and respiratory monitoring

a. Clinical vital signs (BP, pulse, RR, temp, SpO2)
b. Non-invasive monitoring
c. Invasive monitoring

2.4 Shock

a. Pathophysiology
   i. Cardiogenic
   ii. Hypovolemic
   iii. Distributive
   iv. Obstructive
   v. Dissociative

b. Intravenous fluid composition and therapy
   i. High volume intravenous infusion techniques

c. Peripheral venous access
   i. Accessing indwelling vascular devices
   ii. Vascular access techniques in infants & children
d. Central venous access
   i. Subclavian
   ii. Internal jugular
   iii. Femoral
   iv. Cubital

e. Central venous pressure measurement

f. Alternative venous access
   i. Intraosseus
   ii. Peripheral venous cutdown

g. Inotropes

h. Pressors

i. Arterial puncture and cannulation

2.5 Coma

a. Care of the comatose patient
b. Brain death

2.6 Age-specific differences

a. Neonatal
b. Infant
c. Paediatric
d. Elderly

2.7 Breaking bad news
3 ANALGESIA, ANESTHETIC AND SEDATION

3.1 Pain Management

a. Acute pain management
   i. Common analgesic drugs
   ii. Methods of delivery
   iii. Adjuncts
   iv. Trauma pain management
   v. Burn pain management

b. Breakthrough pain in Chronic pain condition

c. Pain assessment and pain scores

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 Procedural Analgesia and Sedation
4 **MEDICINE & SURGERY**

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. Thrombolysis in myocardial infarction
   ix. Left ventricular failure and cardiogenic shock in 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. Chest pain pathways

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
   - Sinus bradycardia
   - Heart block
   - Other bradycardias
iii. Tachycardias
   - Narrow complex regular
   - Narrow complex irregular
   - Wide complex regular
   - Wide complex irregular
   - Torsade des pointes
   - Ventricular fibrillation
iv. Ectopy
   - Narrow complex
   - Wide complex
v. Accessory pathways
   - Wolff-Parkinson-White syndrome
   - Others
vi. Electrophysiological testing
vii. Drugs associated with cardiac arrhythmias
viii. Pharmacological agents used to treat arrhythmias
ix. Implantable cardiac devices (ICDs)
   - Implantable pacemakers
   - Implantable defibrillators
   - Complications of ICDs

l. External emergent cardiac pacing
m. Aortic aneurysm and dissection
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
   ii. Non-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. Tracheobronchial foreign body
f. Infectious diseases
   i. Croup
   ii. Bronchitis
   iii. Pneumonia
   iv. Empyema & Lung abscess
   v. TB
   vi. Bronchiectasis

g. Aspiration

h. Pneumothorax and tension pneumothorax

i. Needle thoracocentesis
j. Intercostal catheter insertion

k. Pneumomediastinum

l. Mediastinitis

m. Mediastinal masses

n. Acute lung injury/respiratory distress syndrome

o. Asthma

p. Chronic obstructive pulmonary disease

q. Pleural effusions

r. Haemoptysis

s. Cavitating lung lesions

t. Isolated “coin” lesions on chest x-ray

u. Disorders of the chest wall

v. Disorders of the mediastinum

w. The respiratory effects of obesity

x. Sleep apnoea

y. Neoplastic disorders

z. Congenital/neonatal
   i. Bronchopulmonary dysplasia
   ii. Cystic fibrosis
   iii. Diaphragmatic hemia
   iv. Oesophageal
   v. Tracheobronchial
   vi. Vascular ring

4.3 Gastrointestinal

a. Clinical examination of the gastrointestinal system
b. Interpretation of the symptoms and clinical signs of the gastrointestinal system

c. Assessment and management of abdominal pain

d. Gastrointestinal bleeding
   i. Indications for urgent gastroscopy
   ii. Techniques used with gastroscopy to control haemorrhage
   iii. Pharmacological agents used in management
   iv. Oesophageal varices
   v. Balloon tamponade
   vi. Medical treatment
   vii. Peptic ulceration
   viii. Angiodysplasia of the colon

e. 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
   ix. Esophageal foreign body
   x. Esophageal perforation

f. Peptic ulcer disease and gastritis

g. Feeding tube management

h. Inflammatory bowel disease

i. Irritable bowel syndrome

j. Infectious disorders and gastroenteritis

k. 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

l. Abdominal paracentesis

m. Pancreatitis

n. Cholelithiasis

o. Cholecystitis

p. Cholangitis

q. Non-traumatic splenic rupture

s. Bowel obstruction
   i. Post-surgical adhesions
   ii. Malrotation
   iii. Volvulus
   iv. Congenital pyloric stenosis
   v. Intussusception
   vi. Insertion of a nasogastric tube

t. Diverticular disease

u. Meckel’s diverticulum

v. Perforated viscus

w. Acute appendicitis

x. Peritoneal adhesions

y. Ischaemic colitis

z. Peritonitis

aa. Retroperitoneal haematoma

bb. Intra-abdominal/retroperitoneal abscesses

cc. Hemias
ee. Anorectal diseases
   i. Haemorrhoids
   ii. Perianal haematoma
   iii. Anal fissure
   iv. Anorectal abscesses
   v. Pilonidal disease
   vi. Rectal bleeding
   vii. Rectal prolapse
   viii. Idiopathic anal pain
   ix. Radiation proctitis
   x. Proctoscopy and sigmoidoscopy
   xi. Rectal foreign bodies

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
      - Upper & lower motor neuron lesions
      - Bell's Palsy, Ramsay Hunt syndrome
d. Approach to dizziness & vertigo
e. 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
f. Acute Stroke
   i. Transient ischaemic attacks
   ii. RINDS
   iii. Thrombotic stroke
   iv. Embolic stroke
   v. Haemorrhagic stroke
   vi. Cerebellar stroke
   vii. Thrombolysis in stroke
   viii. Stroke and hypertension
   ix. Syndromes of stroke
   x. Anterior cerebral artery
   xi. Middle cerebral artery
   xii. Posterior inferior cerebellar artery syndrome
   xiii. Lacunar syndrome
   xiv. Midbrain, pontine and brainstem syndromes
   xv. Stroke units

  g. Altered mental state
   i. Coma
   ii. Acute brain syndrome
   iii. Dementia
   iv. Memory disorders

  h. Approach to ataxia and gait disturbances
   i. Seizures

  j. Status epilepticus

  k. Dystonic reactions

  l. Lumbar puncture
   i. 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-Barré syndrome

o. Multiple sclerosis

p. Myasthenia gravis & Eaton-Lambert syndrome

q. Botulism

r. Tetanus

s. Motor neurone disease

t. Peripheral neuropathy

u. Disorders of the peripheral nervous system
   i. Peripheral nerve lesions
   ii. Brachial plexus syndrome

v. Myopathy

w. Periodic paralysis

x. Parkinson's disease

y. Hydrocephalus

z. Complications of the central nervous system devices

aa. Disorders of the spinal cord

bb. Medical problems in the spinally-injured patient

cc. Paraneoplastic disorders of the CNS and PN

dd. Intracranial aneurysms

e. AV malformations

ff. Subarachnoid haemorrhage

gg. Cerebral tumours

hh. Shunt complications
ii. Management of elevated intracranial pressure

jj. Intracranial abscesses

kk. Cerebral venous thrombosis

ll. Spinal epidural abscess

mm. Intravertebral disc disease

nn. Spinal stenosis

4.5 Endocrine

a. Clinical examination of the endocrine system

b. Interpretation of symptoms and clinical signs of the endocrine system

c. Diabetes Mellitus
   i. brittle blood glucose
   ii. poorly controlled blood glucose
   iii. Hypoglycaemia
   iv. Diabetic ketoacidosis
   v. Hyperosmolar hyperglycaemic nonketotic syndrome

d. Alcoholic ketoacidosis

e. Adrenal disorders
   i. Acute adrenal insufficiency (adrenal crisis)
   ii. Congenital adrenal insufficiency
   iii. Cushing’s disease
   iv. Conn’s syndrome
   v. Phaeochromocytoma

f. Thyroid disorders
   i. Urgencies associated with thyroid disorders
   ii. Thyroid storm
   iii. Hypothyroid crisis

g. Pituitary disorders: panhypopituitarism

h. 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 & sickle cell disease
f. Disorders of haemostasis and coagulation
   i. Congenital
      − Haemophilias, VWD, ITP
   ii. Acquired
      − TTP, DIC
g. Neutropenia
h. Thrombocytopenia
i. Thrombocytosis
j. Disorders of white cells
k. Leukaemia
l. Myelodysplastic disorders
m. Paraproteinaemia
n. Anticoagulant agents
o. Antiplatelet agents
p. Blood transfusion and component therapy
q. 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. Pancoast’s syndrome
e. Hyperviscosity syndrome
f. Complications related to myelosuppression
   i. Febrile neutropenia
   ii. Immunosuppression and opportunistic infections
   iii. Thrombocytopenia and haemorrhage

g. Malignancies specific to organ systems

h. Paraneoplastic syndromes

i. End of life care

4.8 Renal

a. Clinical examination of the renal system
b. Interpretation of symptoms and clinical signs of the renal system
c. Assessment and management of pyuria
d. Assessment and management of haematuria
e. Interpretation of urine dipstick results
f. Interpretation of urine microscopy and culture
g. Urinary catheter insertion
h. Suprapubic catheter insertion
i. Infectious disorders
   i. Urinary tract infection
   ii. Balantitis
   iii. Prostatitis
   iv. Pyelonephritis
   v. Infected obstructed kidney
j. Nephrotic syndrome
k. Glomerulonephritis
l. Acute renal failure
m. Chronic renal failure
n. Hyperkalaemia in renal failure
o. Renal dialysis
p. Peritoneal
q. Intermittent haemodialysis
r. Continual renal replacement therapies
s. Complications of renal dialysis
t. Renal colic
u. Urinary retention
v. Obstructive uropathy
w. Vesico-ureteric reflux
x. Prostatic hypertrophy
y. Tumours
z. Acute scrotum
aa. Epididymitis
bb. Orchitis
c. Testicular torsion
dd. Torsion of the testicular appendage
ee. Priapism
ff. Phimosis/paraphimosis

4.9 Musculo-skeletal disorders

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
   i. Carpal tunnel
   ii. Ulnar tunnel
   iii. Tarsal tunnel
l. Drug management
   i. First line & second line drugs
   ii. Complications

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. Scabies
f. Urticarial and allergic rashes
g. Viral exanthems
h. Macular rashes
i. Maculopapular lesions
   i. Erythema multiforme
   ii. Erythema nodosum
   iii. Others
j. Papular and nodular rashes
k. Petechial and purpuric rashes
l. 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
m. Ulceration
n. Cellulitis
o. Dermatological manifestations of underlying systemic disease
p. 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 emergency department
h. Body fluid exposure
i. Tetanus, rabies vaccination
j. Vaccination in the emergency department
k. Infectious disease surveillance
l. Infectious disease outbreaks
m. Reportable communicable diseases
n. Contact management of patients with serious infectious disease
o. Antibiotic use in the emergency department
p. Outpatient antibiotic therapy
q. Febrile infant management: bacteraemia
r. Systemic inflammatory response syndrome (SIRS)
s. Sepsis, severe sepsis and septic shock
t. Multiple organ dysfunction
u. Toxic shock syndrome
v. Infections in the returned traveller
   i. Malaria
   ii. Dengue fever
   iii. Haemorrhagic fevers
   iv. Typhoid
   v. Others
w. Bacterial
   i. Food poisoning
   ii. Meningococcaemia
   iii. Disseminated gonococcal infection
   iv. Tuberculosis and other mycobacterial infections
   v. Gas gangrene
   vi. Necrotising fasciitis
   vii. Fournier’s gangrene
   viii. Diphtheria
   ix. Haemophilus influenzae
x. Sexually transmitted infections
y. Viral
   i. HIV
   ii. Infectious mononucleosis
   iii. Influenza/parainfluenza
   iv. Herpes simplex
   v. Herpes zoster
z. Mycoplasma infections
aa. Fungal infections
bb. Protozoal infections
cc. Tick-borne infections
dd. Infection from a marine source
ee. Infection in the burns patient
ff. 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
   i. Fever in an immunocompromised patient

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 and monitoring for the administration of sodium bicarbonate
4.15 Vascular

a. Peripheral ischaemia
b. Arterial occlusion
c. Venous occlusion
d. Intestinal ischaemia
e. Aortic disorders
   i. Aortic aneurysms
   ii. Aortic dissection
f. Mycotic aneurysms: intra-arterial drug injection
g. Varicosities - complications and management

4.16 Plastics

a. Plastic surgical techniques
   i. Grafts
   ii. Flaps
   iii. Advanced wound closure

4.17 Breast

a. Approach to patient presenting with a breast lump
b. Carcinoma of the breast
c. Fibroadenoma of breast
d. Mastitis
e. Breast abscess
5 PEDIATRIC

5.1 General principles

a. Understanding the basic anatomical and physiological difference
b. Resuscitation and Pediatric Advanced Life Support (PALS)
c. Approach to the febrile child

5.2 Neonates and Infants

a. Approach to crying baby
b. Apnoea of prematurity, Abdominal pain in a child
c. Altered mental status
d. Hyperbilirubinaemia
e. Feeding problems
f. Congenital heart disease
g. Diaphragmatic hernia
h. Congenital syndromes
i. Hypertrophic pyloric stenosis
j. Malrotation with midgut volvulus
k. Intussusception
l. Hirschprung’s disease
m. Gastroesophageal reflux
n. Necrotising enterocolitis
o. Metabolic disease
p. Respiratory distress
q. Seizures
r. Infections/sepsis
s. Occult bacteraemia
t. Sudden infant death syndrome
5.3 Specific conditions

a. Respiratory emergencies
   i. Croup
   ii. Epiglottitis
   iii. Asthma
   iv. Bronchiolitis
   v. Pneumonia
   vi. Foreign bodies in the respiratory tract

b. Gastrointestinal emergencies
   i. Appendicitis
   ii. Henoch Schonlein Purpura (HSP)
   iii. Gastrointestinal foreign bodies
   iv. Infectious diarrhoeal disease and dehydration

c. Central nervous system emergencies
   i. Seizure and status epilepticus
   ii. Febrile seizure
   iii. Meningitis

d. Non-accidental injuries
6 TRAUMA & ORTHOPEDIC

6.1 General principles

a. Epidemiology of trauma
b. Mechanisms of injury
c. Principles of management of trauma
d. Trauma team concepts
e. Trauma scoring systems
f. Imaging modalities in trauma
g. Assessment and management of multiple trauma

6.2 Injuries by system

a. Head injury
   i. Assessment and management of head trauma
   ii. Glasgow Coma Score
   iii. Pathophysiology of brain injury
   iv. Scalp lacerations
   v. Skull fractures
   vi. Extradural hematoma
   vii. Subdural hematoma
   viii. Intracerebral hematoma
   ix. Diffuse axonal injury
   x. Penetrating head injury
   xi. Minor head injury
   xii. Post concussive syndrome
   xiii. Emergency department drainage of traumatic intracranial hematomas

b. Maxillofacial trauma
   i. Assessment and management of maxillofacial trauma
   ii. Maxillofacial hemorrhage
   iii. Facial lacerations
   iv. Facial nerve and parotid duct injuries
   v. Nasal fractures
   vi. Le Fort fractures
   vii. Zygomatic fractures
   viii. Orbital injury
ix. Temporal bone fractures
x. Mandibular fractures
xi. Temporomandibular joint dislocation
xii. Mandibular dislocation
xiii. Dentoalveolar trauma
  – Avulsed tooth
xiv. Intraoral lacerations

c. Neck injuries
  i. Assessment and management of neck trauma
  ii. Penetrating neck injury
  iii. Laryngotracheal injury
  iv. Vascular injury
  v. Nerve injury
  vi. Strangulation injury

d. Spinal cord injuries
  i. Assessment and management of spinal cord injury
  ii. Spinal immobilization techniques
  iii. Spinal cord syndromes
  iv. SCIWORA

e. Thoracic trauma
  i. Assessment and management of chest trauma
  ii. Pneumothorax
  iii. Tension pneumothorax
  iv. Open pneumothorax
  v. Hemothorax
  vi. Massive hemothorax
  vii. Pulmonary contusion
  viii. Myocardial contusion
  ix. Ribs fracture
  x. Sternal fracture
  xi. Flail chest
  xii. Pericardial tamponade
  xiii. Tracheobronchial rupture
  xiv. Oesophageal perforation
  xv. Diaphragmatic rupture
  xvi. Great vessel injury
  xvii. Penetrating thoracic injury
xviii. Traumatic asphyxia
xix. Air embolism
xx. Emergency department thoracotomy

f. 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

g. Genitourinary trauma
   i. Assessment and management of genitourinary trauma
   ii. Renal injury
   iii. Ureteric injury
   iv. Bladder injury
   v. Urethral injury
   vi. Penile rupture
   vii. Scrotal injury
   viii. Testicular trauma
   ix. Penetrating genitourinary injury

h. Pelvic trauma
   i. Assessment and management of pelvic trauma
   ii. Major pelvic fracture
   iii. Exsanguinating pelvic injury

i. Soft tissue & peripheral vascular injury
   i. Assessment and management of soft tissue injury
   ii. Traumatic amputation
   iii. Arterial injury
   iv. Compartment syndromes
   v. Crush syndrome
6.3 Orthopedic injuries and related disorders

a. General principles of fracture management

b. Casting techniques
   i. Short arm
   ii. Long arm POP
   iii. Short arm backslab
   iv. Scaphoid POP
   v. Volar splint
   vi. U Slab
   vii. Short leg POP
   viii. Long leg cylinder

c. Splintage techniques including splintage procedures
   i. Broad arm sling
   ii. Collar and cuff
   iii. Figure-of-8 bandaging
   iv. Knee immobiliser
   v. Traction splint
   vi. Thomas splint
   vii. Pelvic stabilisation techniques

d. Fracture & methods of close reduction
   i. Hand fractures
   ii. Wrist fractures
   iii. Radius and ulna fractures
   iv. Elbow fractures
   v. Humerus fractures
   vi. Clavicle fractures
   vii. Acromioclavicular injury
   viii. Scapula fractures
   ix. Spine
   x. Hip fractures
   xi. Femur fractures
   xii. Knee fractures
   xiii. Patellar fractures
   xiv. Tibia and fibula fractures
   xv. Ankle fractures
   xvi. Foot fractures
e. Dislocation & methods of closed reduction
   i. Hand dislocations
   ii. Wrist dislocations
   iii. Elbow dislocations
   iv. Shoulder dislocations
   v. Sternoclavicular joint dislocations
   vi. Hip dislocations
   vii. Knee dislocations
   viii. Patellar dislocations
   ix. Ankle dislocations

f. Soft tissues
   i. Shoulder
      - Rotator cuff tears
      - Bursitis
      - Tendinitis
   ii. Elbow
      - Bursitis
      - Tendinitis
   iii. Knee
      - Bursitis
      - Ligament injury
      - Cruciate injury
      - Menisceleal injury
      - Bakers cyst
   iv. Ankle
   v. Foot

g. Hand injuries
   i. Metacarpal fractures/dislocations
   ii. Phalangeal fractures/dislocations
   iii. Lacerations
   iv. Nail and nail-bed injuries
   v. Extensor tendon injuries
   vi. Mallet finger
   vii. Boutonniere deformity
   viii. Flexor tendon injuries
   ix. Foreign bodies
   x. Amputations
   xi. Nerve injuries
xii. High pressure injection injuries
xiii. Crush injury

h. Overuse syndromes
   i. Osteomyelitis
   j. Septic arthritis
   k. Complex regional pain syndrome type 1 (Sudeck’s atrophy)

6.4 Burn

a. Evaluation of the patient with burns
b. Early management of severe burns
   i. Fluid resuscitation
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

6.5 Ballistic & blast injuries

a. Evaluation and initial management of ballistic wounds & blast injury
b. Pathophysiology of ballistic wounding
c. Clinical and pathological effects of explosions

6.6 Trauma in special groups

a. Pediatric trauma
   i. Assessment and management of trauma in children
   ii. Paediatric aspects of trauma management
   iii. Non-accidental injury
b. Trauma in pregnancy
   i. Assessment and management of trauma in pregnancy
   ii. Obstetric complications of trauma
   iii. Uterine rupture
   iv. Perimortem caesarean section

   c. Intimate partner violence

   d. Geriatric trauma

   e. Elder abuse

   f. Sport injuries

6.7 Wound management

   a. Classification of wounds
   b. Wound management
   c. Basic wound closure techniques
   d. Wound dressings
   e. Wound infections
   f. Chronic ulcers
   g. Special wounds
      i. Puncture wounds
      ii. Bites and stings
      iii. Degloving injury
      iv. Amputations
7 EYE, ENT, DENTAL

7.1 ENT

a. Ear
   i. Auroscopic examination of the ears
   ii. Aural toilet / wick insertion
   iii. Otalgia
   iv. Otitis media
   v. Otitis externa
   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. Tonsilitis
   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

7.2 Eye

a. Use of the slit lamp
b. Ophtalmoscopes
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
   – Chemical
   – Flash burns
   – Thermal

h. Anterior pole
   i. Hyphaema
   ii. Glaucoma
   iii. Uveitis

i. Posterior pole
   i. Retinal detachement
   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

7.3 Dental

a. Normal dental development
b. Dental infections without upper airway obstruction
   i. Dental abscess

c. Dental infections with possible upper airway obstruction
8 OBSTETRICS AND GYNAECOLOGY

8.1 Pregnancy

a. High risk pregnancy

b. Antepartum complications

i. Hyper-emesis gravidarum
ii. Miscarriage
iii. Gestational trophoblastic disease
iv. Septic abortion
v. Ectopic pregnancy
vi. Hypertensive disorder of pregnancy
vii. Pre-eclampsia and eclampsia
viii. HELLP syndrome
ix. First trimester bleeding
x. Haemorrhage, antepartum
xi. Abruptio placentae
xii. Placenta praevia, vasa praevia
xiii. Others
xiv. Infections, including urinary tract infection
xv. Fever
xvi. Isoimmunisation
xvii. Thromboembolism

c. Emergency delivery

d. Peripartum complications

i. Preterm labour
ii. Premature rupture of membrane (PROM)
iii. Foetal distress
iv. Cord prolapse
v. Nuchal cord
vi. Shoulder dystocia
vii. Mal-presentation and mal-position
viii. Rupture or inversion of uterus
ix. Retained placenta
x. Perineal tear
xi. Amniotic fluid embolism
xii. Others

e. Post-partum complications
   i. Haemorrhage, postpartum
   ii. Primary
   iii. Secondary
   iv. Puerperal fever
   v. Postpartum mood disorder

f. Drugs safety in pregnancy

8.2 Gynaecology

a. Vagina and vulva
   i. Abnormal vaginal bleeding and discharge
   ii. Vaginitis/vulvovaginitis
   iii. Foreign body
   iv. Bartholin's cyst/abscess
   v. Others

b. Uterus
   i. Dysmenorrhoea
   ii. Dysfunctional uterine bleeding
   iii. Cervicitis, endocervicitis
   iv. Endometriosis
   v. Tumours
   vi. Leiomyoma
   vii. Gestational trophoblastic disease
   viii. Others
   ix. Prolapse
   x. Complications of intrauterine contraceptive devices

c. Ovaries
   i. Cysts and cyst complications
   ii. Mittelschmerz
   iii. Tumours
   iv. Ovarian hyperstimulation syndrome

d. Infections
   i. Pelvic inflammatory disease
ii. Toxic shock syndrome
iii. Fitz-Hugh-Curtis syndrome
iv. Tubo-ovarian abscess
v. Herpes simplex
vi. Human papilloma virus
e. Contraception
   i. Complications
   ii. Post-coital
9 PSYCHIATRY

9.1 Evaluation
   a. History
   b. Physical examination
   c. Mental state examination
   d. Investigations

9.2 Organic brain syndrome

9.3 Violent/agitated behaviour
   a. Prevention
   b. Safety issues
   c. Restraint options and management
      i. Physical
      ii. Chemical

9.4 Deliberate self-harm

9.5 Depression

9.6 Anxiety disorders
   a. Phobias
   b. Panic disorder
   c. Post-traumatic stress disorder
   d. Obsessive–compulsive disorder
   e. Hypochondriasis
   f. Others

9.7 Psychose
   a. Acute and chronic
   b. Bipolar effective disorder
   c. Schizophrenia
   d. Mania and hypomania
   e. Others
9.8 The “challenging” ED patient

a. Personality disorder DIS H
b. Malingering DIS H
c. Frequent presenter DIS H
d. Conversion disorder DIS H
e. Pain disorder DIS H
f. Somatization disorder DIS H
g. Munchausen’s by proxy DIS H
h. Anorexia & bulimia
i. Management strategies
j. Others

9.9 The mental health patient in the ED

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

9.10 Therapy

a. Pharmacology of therapeutic agents
   i. BenzodiazepineS
   ii. Anti-psychotics
   iii. Antidepressants
   iv. SSRIs
   v. Sedatives
   vi. Others

b. Non-pharmacologic therapy
   i. ECT – complications
   ii. Others

9.11 Involuntary detention

a. Legal aspects of mental health care
10 TOXICOLOGY

10.1 General principles

a. Prehospital care
b. Epidemiology and prevention of poisoning
c. Approach to poisoning management
d. Toxidromes
e. Risk assessment/prediction of toxicity
f. Poison centers

10.2 Gastrointestinal decontamination

a. Emesis
b. Gastric lavage
c. Activated charcoal
d. Whole bowel irrigation
e. Cathartics
f. Endoscopy and surgery

10.3 Methods of enhanced elimination

a. Activated charcoal, Multiple dose activated charcoal (MDAC)
b. Gastrointestinal agents
   i. Cholestyramine
   ii. Kayexalate
   iii. Prussian blue
c. Urinary alkalinization
d. Forced diuresis
e. Continuous Arterial-Venous Hemofiltration Dialysis (CAVHD)
f. Peritoneal Dialysis
g. Hemodialysis and hemofiltration

10.4 Antidotes

a. Atropine
b. Antivenom
c. Desferoxamine (Desferal)
d. Ethanol
e. Flumazenil
f. Fomepizole
g. Glucagon
h. Methionine
i. N-acetylcysteine (NAC)
j. Naloxone
k. Physostigmine
l. Pralidoxime
m. Pyridoxine (Vitamin B6)
n. Sodium bicarbonate
o. Methylene blue
p. Vitamin K
q. Oxygen
   i. Normobaric
   ii. Hyperbaric
r. Digibind

10.5 Chemical dependency and substance abuse

a. Alcohol, Drug & Substance
b. Ause
c. Dependence
d. Withdrawal
e. Tolerance

10.6 Anti-inflammatory agents and analgesic poisoning

a. Paracetamol
b. NSAIDs
c. Salicylates
d. Gout drugs
e. Opioids

10.7 Antimicrobial poisoning

a. Antibiotics
b. Antifungal
c. Antiparasitic
d. Antiseptics

e. Antiviral

f. Anti-tuberculous

10.8 Autonomic agent poisoning

a. Anticholinergics

b. Antihistamines

c. Serotonergic drugs

d. Cholinergics

e. Ergot alkaloids

f. Methylxanthines

g. Sympathomimetcs

10.9 CNS drugs and muscle relaxant poisoning

a. Alcohols

b. Anticonvulsants

c. Anti-Parkinsonian drugs

d. Antidepressants

   i. Tricyclic antidepressants (TCA)
   ii. Selective serotonin re-uptake inhibitors (SSRI)
   iii. Monoamine oxidase inhibitors (MAOI)
   iv. Others

e. Psychiatric drugs

   i. Antipsychotics/neuroleptics
   ii. Lithium
   iii. Valproic acid
   iv. Carbamazepine

f. “Party drug” poisoning

   i. Types: CNS stimulants, depressants, dissociatives, hallucinogens
   ii. Amphetamine
   iii. Cocaine
   iv. Ketamine
   v. Gamma-hydroxybutyrate (GHB)
   vi. Benzodiazepines
   vii. Cannabis
   viii. Organic solvents
   ix. Cough mixtures
g. Sedatives, hypnotics, anxiolytics

h. Smooth muscle relaxants

10.10 Cardiovascular

a. Antiarrhythmics, including digoxin
b. Anticoagulants
c. Anti-hypertensives

10.11 GI agents

a. Antacids
b. Antidiarrhoeals
c. Laxatives
d. Antispasmodic

10.12 Household products poisoning

a. Dettol
b. Bleach
c. Multi-purpose cleaner
d. Mothball
e. Hydrocarbons

10.13 Food poisoning in Hong Kong

a. Ciguatera
b. Shellfish poisoning
c. Tetrodotoxin
d. Scombroid
e. Botulism
f. Clenbuterol
g. Vegetable-borne pesticide
h. Mushroom poisoning

10.14 Chinese herbal medicine poisoning

a. Cardiac glycoside
b. Aconiti root
c. Anticholinergic poisoning
d. Podophyllotoxin poisoning

10.15 Industrial toxicology

a. Metals
   i. Arsenic (As)
   ii. Mercury (Hg)
   iii. Thallium (Tl)
   iv. Lead (Pb)
   v. Metal fumes
   vi. Others

b. Caustics
   i. Acids
   ii. Alkalis
   iii. Hydrofluoric acid (HF)

c. Nitrites

10.16 Inhalational poisoning

a. Simple asphyxiants
   i. Carbon dioxide
   ii. Methane

b. Pulmonary irritants
   i. Phosgene
   ii. Chlorine
   iii. Sulfur dioxide
   iv. Ammonia
   v. Hydrogen chloride
   vi. Chloramine

c. Aspiration
   i. Talc
   ii. Hydrocarbon

d. Mitochondrial toxins
   i. Cyanide
   ii. Hydrogen sulfide
   iii. Carbon monoxide
10.17 Pesticides, rodenticides and herbicides poisoning

a. Pesticides
   i. Organophosphates
   ii. Carbamates
   iii. Pyrethrins / Pyrethroids
   iv. Others

b. Rodenticides
   i. Warfarin and superwarfarin
   ii. Tetramine
   iii. Strychnine

c. Herbicides
   i. Paraquat
   ii. Glyphosate

10.18 Vitamins, minerals, bone and endocrine agents

a. Hypoglycaemic agents
b. Electrolytes and minerals
c. Iron
d. Steroid
e. Thyroid drugs
f. Vitamins
g. Hormones

10.19 Specific conditions

a. Drug induced seizure
b. Drug induced coma
c. Drug induced tachycardia
d. Drug induced bradycardia
e. Drug induced hypoglycemia
f. Drug induced metabolic acidosis
g. Drug induced hyperthermia
h. Pediatric poisoning

10.20 Hazmat
11 ENVIRONMENTAL

11.1 Heat-related illnesses

a. Heat stroke
b. Heat stress/exhaustion
c. Heat syncope, edema, cramp
d. Drug related hyperthermia

11.2 Cold-related illnesses

a. Hypothermia
b. Frostbite

11.3 Bites and stings

a. Animal bites and rabies
b. Snakes bites and antivenoms
c. Spiders
d. Hymenoptera – bees, wasps, ants
e. Centipede, millipede, scorpion
f. Jellyfish
g. Stinging fish
h. Blue-ringed octopus
i. Others

11.4 Diving medicine

a. Near drowning and drowning
b. Decompression illness
c. Barotrauma
d. Hyperbaric oxygen

11.5 Electricity

a. Electric shock
b. Lightning strike

11.6 High Altitude illnesses

a. Acute mountain sickness
b. High altitude cerebral oedema

c. High altitude pulmonary oedema
12 RADIOLOGY IN EMERGENCY MEDICINE

12.1 Physics

12.2 Safety issues/requirements

12.3 Limitations of modalities

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

12.4 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

d. CT pulmonary angiography
   i. Abdomen
   ii. CT urography
   iii. Limbs and joints
   iv. Facial bones

e. Magnetic resonance imaging (MRI)
   i. Brain
   ii. Spine
   iii. Others

f. Nuclear med usu not a ED Ix tool
   i. Ventilation/perfusion scans
   ii. Bone scans
   iii. Cardiac scans
   iv. Infection and inflammation scans
   v. GIT scans

g. Ultrasound
   i. Physics
   ii. Focused abdominal sonography in trauma (FAST)
   iii. Abdominal aortic aneurysm (AAA)
   iv. Vascular access / procedural
   v. Vascular Doppler and duplex
   vi. Abdominal (Hepatobiliary, Renal)
   vii. Pelvic, including early & late pregnancy, ectopic pregnancy
   viii. Limb
   ix. Echocardiography
   x. Lung & pleura
   xi. Testicular
12.5 Medical precautions in radiology

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

13.1 Duty of care
   a. Individual doctor
   b. Hospital

13.2 Medical error
   a. Concept of medical error
   b. Definitions of medical error
      i. Negligence
      ii. Systems versus individual failure
      iii. Preventability
      iv. Root cause analysis

13.3 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
   c. Guardianship Board
   d. Valid consent
   e. Implied consent
   f. Verbal consent
   g. Written consent
   h. Refusal to consent

13.4 Coronal Investigations
   a. Reporting to coroner: requirements of coronial notification
   b. Expert opinion
      i. Competencies required to provide expert witness
      ii. Reason for the provision of service
      iii. Obligation required once a service is rendered to the court
13.5 Involuntary detention under a Mental Health Act

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

13.6 Privacy and confidentiality

a. Principles of privacy
b. Patient confidentiality

13.7 Reporting

a. Elderly abuse & neglect
b. Domestic violence
c. Occupational health and safety
d. Mental health patients
e. Medical conditions and driving

13.8 Medico-legal reports

a. Components of a medico-legal document
b. Ethical and legal responsibility associated with generation of such documents

13.9 Documentation and the Medical Record

a. Components of a medical record
b. Importance of the medical record in patient care
c. Legal aspects of medical record entries
d. How to write a medical record

13.10 Legal aspects of death and dying

a. Death certificate
b. Brain death
c. Coroners Ordinance
d. End-of-life care
e. Advance directives (AD)
f. Living wills

13.11 Forensic issues

a. Drink driving
b. Body packers
c. Sexual assault
d. Intimate partner violence

13.12 Court attendance
14 PATIENT SAFETY AND RISK MX

14.1 High risk areas

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

14.2 Telephone advice and triage

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

14.3 Consultation

a. Demonstrate knowledge of the concepts of vertical and horizontal consultation

14.4 Transfer of responsibility

a. 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
b. Demonstrate knowledge of the issues of interface care between one service/ individual practitioner and another

14.5 Disposition

a. Demonstrate knowledge of patient disposition from the ED in the following areas
   i. Discharge/transfer
   ii. Follow up
   iii. Referral

14.6 Unscheduled return

14.7 Left without being seen (LWBS)

a. Demonstrate knowledge of the outcomes associated with LWBS
b. Demonstrate knowledge of techniques/ systems that can lessen the number of LWBS patients
c. Demonstrate knowledge of the medico-legal implications of patients who LWBS
14.8 Patients who leave before treatment is completed

   a. Demonstrate knowledge of the responsibilities associated with patients who leave before treatment is completed

   b. Demonstrate knowledge of the principles of medico-legal obligations, mental status assessment, mental competency and guardianship

14.9 Handling of medical incidents
15 PREHOSPITAL CARE

15.1 Prehospital care

a. The concept of emergency medical system (EMS)
   i. Benefits of an EMS for emergency patient care
   ii. Need for coordination of the components of EMS and the need for effective interfaces between
       EMS and other health care systems

b. Models of prehospital care
   i. Different models of pre-hospital care, both within Hong Kong and in other areas of the world
   ii. Relative advantages and disadvantages of each

c. Communication
   i. Need for effective communication between components of the EMS system in the delivery of
      prehospital care
   ii. Various means of communication available in the delivery of prehospital care

d. Patient access in prehospital care: differences and the difficulties in accessing the patient for the delivery of
   emergency care in the prehospital setting as compared to the hospital setting

e. Roles and responsibilities of EMS
   i. Ambulance
   ii. Fire
   iii. Police

f. Modes of transport
   i. Different modalities of patient transport
   ii. Relative advantages and disadvantages of the use of each of the different modalities of patient
       transport
       - Road ambulance
       - Aeromedical transport
         - Rotary wing & fixed wing aircraft

g. Patient assessment in prehospital care: differences in assessment of a patient between the hospital and the
   prehospital environment
h. Equipment considerations in prehospital care
   i. Medical equipment utilized in prehospital care
   ii. Limitations that the prehospital environment places on the use and function of that equipment

i. Clinical procedures in prehospital care
   i. Relevant considerations and adaptations that may be necessary to safely undertake a procedure in the prehospital environment
   ii. Relative advantages and disadvantages of undertaking a clinical procedure in the prehospital environment as compared to delaying the procedure until arrival at hospital
   iii. Pain control
   iv. Procedures in prehospital care
      - Airway and pulmonary resuscitation
      - Cardiopulmonary resuscitation
      - Defibrillation
      - Haemorrhage control
      - Spinal immobilisation
      - Splintage techniques

j. Special circumstances
   i. The entrapped patient
   ii. Crush syndrome
   iii. Field amputation
   iv. Rescues: role and responsibilities of the emergency physician during a rescue operation at an accident scene
16 DISASTER MEDICINE

16.1 Disasters

a. Definitions of a disaster, mass causality incident (MSI) and the importance of the relativity of an incident to available resources
b. Classification of disasters
c. Epidemiology of disasters
d. Hospital Authority, hospital & AED responsibilities

16.2 Disaster planning

a. General principles - Planning Preparedness Response Recovery (PPRR)
   i. Disaster management & mitigation
   ii. Principles of prevention and risk reduction
   iii. Principles of preparedness relative to risk of occurrence and impact
b. Hospital / Department Disaster P
   i. Hospitals as responders to an emergency: principles and procedures that are required for preparing the ED for a large influx of casualties
c. Recovery: principles and procedures that are required in the aftermath of an incident
d. Inter-department collaboration
   i. Within the hospital
   ii. With other organizations or agencies
e. Incident command structure
   i. Strategic: The overall command of the incident and interface between different responding agencies and the community
   ii. Planning: The continual evaluation of the incident situation
   iii. 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. Liaison with media
   i. Media management during incidents
   ii. Use of media during an incident
16.3 Roles and responsibilities at the disaster site

a. Medical
b. Ambulance
c. Police
d. Fire

16.4 Disaster equipment and supplies

a. 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

16.5 Occupational health and safety issues

a. Incident site: personal protective equipment (PPE)
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

16.6 Disaster site operations

a. Organization of medical operations at an incident site
b. Adapting clinical management in a disaster
   i. Disaster triage: principles of disaster triage e.g. Simple Triage and Rapid Treatment (START)
   ii. Record keeping
   iii. Paediatric casualties:
       - important triage considerations
       - JUMPStart

16.7 Mental health & behavioural issues

a. Disaster victims & Health professionals and responder
   i. Role of counseling
ii. Critical incident stress debriefing

iii. Post traumatic stress disorder

16.8 Medical response to terrorist incidents

a. Chemical weapons
   i. Choking agents
   ii. Cyanide
   iii. Phosgene
   iv. Blistering agents
   v. Mustard
   vi. Nerve agents

b. Biological weapons
   i. Small pox
   ii. Anthrax
   iii. Botulism
   iv. Viral hemorrhagic fevers

C. Radiation emergencies
   i. Radiation exposure: different types of radiation exposure and their relative biological impact
   ii. Radiation injury
   iii. Radiation safety: principles of radiation safety, radiation monitoring and responding to a casualty contaminated with a radio-isotope safely
17 ADMINISTRATION AND MANAGEMENT

17.1 Quality improvement

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 & incident management

i. Accreditation and verification processes

j. Patient satisfaction: factors associated with patient satisfaction with ED care

k. Task design: factors that influence the effectiveness of task design

17.2 Communications with external groups

a. Relationship between patient perception and satisfaction

b. Ability to manage patients with special needs in an appropriate manner

c. Ability to conduct a media interview regarding a medical topic

d. Importance of good relationships, and how these may be achieved, with the following groups
   i. Interdepartmental relations
   ii. Public relations
   iii. Media relations
   iv. Government relations
   v. Legal relations
      – Law enforcement
17.3 ED specific management issues

a. Clinical practice guidelines (CPG)
   i. Benefits of CPG
   ii. Inappropriate use

b. Patient flow, ED overcrowding and access block
   i. Concepts of process mapping and concepts of patient flow
   ii. Possible causes of ED overcrowding and the possible effects that ED overcrowding may have on patient care
   iii. Factors that may contribute to access block

c. Observation medicine, short-stay units & Emergency Medicine Ward (EMW)
   i. Different models of care and observation medicine
   ii. Potential benefits and limitations of a short-stay unit & EMW
   iii. Types of cases that may be suitable for admission to a short-stay unit & EMW

17.4 Violence in the ED
18 RESEARCH, LITERATURE APPRAISAL & MEDICAL EDUCATION

18.1 Principles of research

a. General
   i. Importance of accurate data collection on the validity of a scientific work
   ii. How the presentation of data may influence the perception of study results
   iii. Importance of honesty and the influence of competing interests in research
   iv. Importance of randomization in differentiating between an association and a cause

b. Hypothesis formulation and testing
   i. Generation of an appropriate hypothesis to answer a research question
   ii. Types of error that may occur when testing research hypotheses

c. Research ethics
   i. Consent for research
   ii. Ethics of research

18.2 Research methods

a. Principles of medical research
   i. Sample size
   ii. Choice of research method
   iii. Enrolment
   iv. Randomisation
   v. Concealment of treatment allocation
   vi. Bias
   vii. Validity
   viii. "Gold standard" test

b. 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
18.3 Statistical methods

a. Basic 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. Difference between dichotomous, nominal, ranked (ordinal) and continuous variables
   ii. Difference techniques used to graphically display or plot data from dichotomous, nominal, ranked (ordinal) and continuous variables
   iii. Difference between parametric and non-parametric data
   iv. Difference between paired and non-paired data
   v. Difference between descriptive and comparative statistics
   vi. Distributions of continuous variables and the terms used to describe these distributions
   vii. Principles and practical application of the following statistical tests
       viii. Student's t test
       ix. Mann Whitney U test
       x. Chi squared test
       xi. Sign test
       xii. ANOVA
       xiii. Correlation coefficients
       xiv. Tests of agreement
       xv. Multiple regression

c. Measurement accuracy
   i. Confidence intervals in data reporting
   ii. Standard error of the mean

d. Significance
   i. Definition of clinical and statistical significance
   ii. Difference between clinical and statistical significance
e. Bayes’ theorem
   i. Principles and practical application of Bayes’ theorem, including the following terms
   ii. Prior probability
   iii. Post-test probability
   iv. Likelihood ratios (positive and negative)
   v. Limitations of Bayes’ theorem in clinical practice

18.4 Literature evaluation

   a. Evidence-based medicine: principles, practical application and limitations
   b. Clinical application of research and barriers of adoption of findings into practice
   c. Critical appraisal of emergency medicine specific literature
   d. Effectively critically appraise evidence in order to address a clinical question

18.5 Medical education

   a. Different levels of medical education
   b. Goals & objectives of medical education
   c. Educational strategies
   d. Implementation
   e. Evaluation & feedback