



CURRICULUM

The transferable competency of Emergency Surgery requires the ability to demonstrate a sound understanding of the basic science, surgical anatomy, applied physiology and pathology relevant to emergency surgery and knowledge of:

Initial Assessment and Management

- Airway management with particular reference to upper airway obstruction, injuries of the pharynx, larynx, trachea and bronchi and airway maintenance in the severely injured and unconscious patient
- Nasotracheal and endotracheal intubation, cricothyroidotomy/laryngotomy and tracheostomy
- Administration of oxygen and techniques of ventilatory support
- Management of smoke inhalation injury and carbon monoxide poisoning
- Management of closed and penetrating chest injuries
- Maintenance of circulation including techniques of vascular access, cardiopulmonary and pharmacological resuscitation, hemodynamic support, the management of shock and cardiac trauma
- Principles of blood transfusion and serology including the use of plasma substitutes and protocols for massive transfusion and the risks and complications of transfusion
- Indications and techniques of resuscitative laparotomy and thoracotomy
- Principles of damage control surgery
- Assessment, replacement and maintenance of fluid, electrolyte and acid-base balance in adults, children and neonates
- Management of acute gastrointestinal haemorrhage
- Management of the unconscious patient
- Initial management of severe head and brain injury, spinal injury, para- and tetraplegia and space occupying intracranial lesions
- Principles of management of pelvic fractures and the management of fractures and dislocations of the limbs.



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- Principles of pre-hospital care and patient triage including major incident management and surgery in austere conditions
- Principles of ballistics and the management of gunshot and blast injuries Investigation
- Principles of diagnostic radiography (including interventional radiology), ultrasonography, computed tomography, magnetic resonance imaging and related techniques
- Principles and techniques of biopsy and cytological sampling

Preoperative care

- Peri-operative management of medical co-morbidities in the emergency surgical patient including respiratory, cardiovascular, hepatic and renal disease, endocrine and psychiatric disorders
- Assessment of fitness for anaesthesia and surgery and risk of morbidity and mortality
- Correction of coagulopathy and haemolytic disorders and the prevention and treatment of thromboembolic disease
- Prevention and treatment of infections
- Acute renal failure in surgical patients including the principles of hemofiltration, dialysis and plasmapheresis

Definitive Treatment

- Care and monitoring of the anaesthetised patient and principles of general, regional and local anaesthesia
- Malignant hyperthermia
- Laparoscopy and laparoscopic procedures in emergency surgery
- Techniques and technology of dissection, haemostasis, excision, resection and anastomosis used in emergency surgery
- Interventional radiology and the safe use of X-ray screening for detection of foreign bodies and stent placement



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- Management of blunt and penetrating injuries to thoracic, abdominal and pelvic viscera, parietes and vasculature
- Management of nerve and vascular injuries of the neck
- Management of closed and penetrating head injuries including facial and orbital trauma
- Management of vascular injuries of the limbs and the principles of amputation and rehabilitation
- Management of perineal trauma
- Trauma and emergency surgery in pregnancy
- Management of obstructive uropathy
- Principles and techniques of hernia repair including component separation techniques, abdominal wall reconstruction and the use of surgical meshes and biological materials

Postoperative management

- Principles and techniques of pain control
- Post-operative monitoring and the prevention, recognition and management of complications
- Principles and practice of intensive care medicine in posttraumatic, preoperative, perioperative and postoperative patients including the use of scoring systems
- Systemic inflammatory response syndrome, sepsis, sepsis syndrome and septic shock including the pathophysiology and management of single and multiple system organ failure
- Respiratory failure, pulmonary oedema, “shock lung”, adult respiratory distress syndrome, lobar and pulmonary collapse, and transfusion related acute lung injury
- Indications and techniques of nutritional support
- Prevention, diagnosis and management of abdominal compartment syndrome
- Prevention, diagnosis and management of compartment syndrome in the limbs
- Classification of surgical wounds and the principles of wound management including infection, dehiscence and the treatment of chronic and complex wounds (e.g. negative pressure therapy)
- Pathophysiology and complications of fracture healing and the principles of bone grafting



Specific Conditions

- Acute abdominal pain including aetiologies more commonly encountered in the Tropics, Africa and Asia than Europe and North America
- Management of non-specific abdominal pain
- Pathophysiology and management of acute and chronic pancreatitis and their complications
- Pathophysiology and management of peritonitis and intra-abdominal sepsis
- Pathophysiology and management of obstruction, inflammation, infection and bleeding of the liver and biliary tree
- Ascites
- Mechanical and functional obstruction of the gastrointestinal tract
- Aetiology, diagnosis and management of gastrointestinal tract perforation
- Acute mesenteric ischemia: arterial, venous, and nonocclusive
- Radiation enteritis
- Pathophysiology and management of acute appendicitis, appendiceal neoplasms and pseudomyxoma peritonei
- Management of diverticulitis and its complications
- Pathophysiology, aetiology and management of colitis and Crohn's disease
- Pathophysiology, aetiology and management of fistulae
- Assessment and management of the acute presentation of malignant disease
- Assessment and management of anorectal pathology
- Faecal impaction and stercoral ulceration
- Irritable bowel syndrome
- Postsplenectomy sepsis



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- Surgical techniques in bariatric surgery and their complications
- Management of foreign bodies in the gastrointestinal, urogenital or respiratory tract
- Aetiology and management of pleural effusion, empyema and mediastinitis
- Neonatal physiology and the principles of anaesthesia and surgery in the newborn
- Diagnosis and management of common emergency paediatric surgical disorders (including pyloric stenosis, intussusception, hernias and testicular torsion) and correctable life-threatening congenital abnormalities
- Diagnosis and management of necrotizing enterocolitis
- Management of urological emergencies including sepsis, obstruction, calculi, haemorrhage, retention, scrotal pain and swelling
- Gynaecological causes of acute abdominal pain including ectopic pregnancy, pelvic inflammatory disease and endometriosis
- Pathology and management of acute and chronic limb ischaemia
- Principles of and techniques of arterial reconstructive surgery and the management of aneurysms
- Soft tissue infections, injuries and ulceration including necrotising fasciitis, synergistic gangrene, perianal and ischiorectal sepsis and pilonidal disease
- Management of snake, spider, human and other animal bites and stings
- Management of the patient with polytrauma including those at the extremes of life
- Mangled extremities and traumatic amputation
- Diagnosis and treatment of common fractures and the principles of joint replacement
- Management of hypothermia
- Management of burns
- Principles of skin grafting and flaps
- Principles of tendon repair
- Management and complications of hydatid disease



Professional skills

- Importance of communication with patients, relatives and colleagues
- Ethics and medico-legal aspects of emergency surgery including assessment of mental capacity and competence, the principles of informed consent and "best interest" care
- Psychological aspects of surgery and bereavement
- Decision-making in emergency surgery and the involvement, co-ordination and leadership of appropriate multidisciplinary teams
- Quality control including clinical audit, trauma and emergency care networks and critical incident reporting systems
- Principles of research design and critical evaluation and implementation of appropriate clinical trials and technical innovations