CURRICULUM OF SURGERY FOR THIRD M.B.B.S.

These guidelines are based on MCI recommendations. Teaching has to be done keeping in mind the goals and objectives to be achieved by medical student:

SURGERY-

(i) **GOAL:**

The broad goal of the teaching of undergraduate students in Surgery is to produce graduates capable of delivering efficient first contact surgical care.

(ii) **OBJECTIVES:**

The departmental objectives, syllabus and skills to be developed in the department of surgery during undergraduate medical education are presented herewith. These are prepared taking into consideration of various aspects and institutional goals given below:

1. A medical student after graduation may have different avenues of his/her professional career and may work either as a first contact physician in a private, semi-private or public sector or may take up further specialization in surgery or other specialties.
2. He may have to work in different settings such as rural, semi-urban or urban which may have deficient or compromised facilities.
3. These are based on the various health services research data in our community.
4. These are also based on following institutional goals in general;

   At the end of the teaching/ training the undergraduate will be able to:
   - Diagnose and manage common health problems of the individual and the community appropriate to his/her position as a member of the health team at primary, secondary and tertiary levels.
   - Be competent to practice curative, preventive, promotive and rehabilitative medicine and understand the concepts of primary health care.
   - Understand the importance and implementation of the National Health Programmes in the context of national priorities.
   - Understand the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude required for professional responsibilities.
   - Develop the ability for continued self-learning with a scientific attitude of mind and acquire further expertise in any chosen area of medicine.

A. **KNOWLEDGE**

At the end of the course, the student shall be able to:

1. Describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children.
2. Define indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
3. Define asepsis, disinfection and sterilization and recommend judicious use of antibiotics.
4. Describe common malignancies in the country and their management including prevention.
5. Enumerate different types of anaesthetic agents, their indications, mode of administration, contraindications and side effects.

B. **SKILLS**
At the end of the course, the student should be able to

1. Diagnose common surgical conditions both acute and chronic, in adult and children.
2. Plan various laboratory tests for surgical conditions and interpret the results.
3. Identify and manage patients of haemorrhagic; septicaemic and other types of shock.
4. Be able to maintain patent air-way and resuscitate:
   A A critically injured patient.
   B Patient with cardio-respiratory failure.
   C A drowning case.
5. Monitor patients of head, chest, spinal and abdominal injuries, both in adults and children.
7. Acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring.
8. Treat open wounds including preventive measures against tetanus and gas gangrene.
9. Diagnose neonatal and paediatric surgical emergencies and provide sound primary care before referring the patient to secondary/territory centers.
10. Identify congenital anomalies and refer them for appropriate management.

In addition to the skills referred above in items (1) to (10), he shall have observed/assisted/performed the following:

i. Incision and drainage of abscess
ii. Debridement and suturing open wound
iii. Venesection
iv. Excision of simple cyst and tumours
v. Biopsy and surface malignancy
vi. Catheterisation and nasogastric intubation
vii. Circumcision
viii. Meototomy
ix. Vasectomy
x. Peritoneal and pleural aspirations
xi. Diagnostic proctoscopy
xii. Hydrocoele operation
xiii. Endotracheal intubation
xiv. Tracheostomy and cricothyroidotomy
xv. Chest tube insertion.

Human values, and Ethical practice

- Adopt ethical principles in all aspects of his clinical practice. Professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues and specialist in the field when needed.
Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

C. **INTEGRATION**
The undergraduate teaching in surgery shall be integrated at various stages with different pre and para and other clinical departments.

**LEARNING METHODS**
Lectures, Tutorials bedside clinics and lecture cum demonstrations

**Distribution of Teaching hours -**

- **Lectures - 160 hours**
- **Tutorials and revision - 140 hours**
- **Bedside clinics - 468 hours** five clinical postings totalling 26 weeks including Anaesthesiology
- **Clinical postings in General Surgery -**
  - 3rd Semester - 6 weeks
  - 5th Semester - 4 weeks
  - 7th Semester - 4 weeks
  - 8th Semester - 6 weeks
  - 9th Semester - 6 weeks

**Sequential organisation of contents and their division -**

**GENERAL SURGERY LECTURES**

**4TH Term**
General Surgery : Part I : 16 Lectures

**6TH Term - 3 modules**

- **Module 1**
  - Vascular Surgery : 8 Lectures
  - Tropical Surgery : 4 Lectures
  - Gen. Surgery Remaining: 16 Lectures

- **Module 2 : 16 Lectures**
  - Head and Neck surgery
  - Endocrine surgery

- **Module (3)**
  - Breast surgery 4
  - Plastic & Reconstructive Surgery 6
  - Neurosurgery 6 16 Lectures

**7TH Term: 3 modules**

- **Module (1)**
  - Cardio Thoracic surgery 8
  - Paediatric surgery 8 16 lecture

- **Module (3) : 16 Lectures**
  - Liver, Spleen, Pancreas, Biliary Tract, Portal Hypertension

- **Module (3)**
  - Upper Gastro intestinal Tract + Peritoneum 16 Lectures
8th Term  4 modules

- Module (1)
  Lower G.I. tract  16 Lectures
  Abdominal wall,
  Incisional Hernia

- Module (2)
  Upper GUT  16 Lectures
  Organ transplantation

- Module (3)
  Lower GUT  16 Lectures
  Hernia, Hydrocoele

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160 Hours

9th Term

Revision Lectures/ tutorials/ lecture cum demonstrations  4 8

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208

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TUTORIALS

6TH Term Surgical pathology  32
8TH Term Operative Surgery + Instruments  32
9TH Term Imaging sciences-
  Interpretation of Investigations  28

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300

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Course contents- General Surgery - including paediatric surgery

COURSE CONTENTS

I. A. GENERAL PRINCIPLES

1. Wound healing and management, scars: Hypertrophic scar and keloid; First aid management of severely injured.
2. Asepsis, antisepsis, sterilisation.
3. Surgical sutures, knots, drains, bandages and splints.
4. Surgical infections and rational use of antibiotics: Causes of infection, prevention of infection, common organisms causing infection.
5. Boils, cellulitis, abscess, necrotising fascitis.
7. Chronic specific infections: Tuberculosis, Filariasis, and Leprosy.
8. Antibiotic therapy.
9. Hospital infection.
10. AIDS and Hepatitis B; Occupational hazards and prevention.

I. B.
1. Mechanism and management of missile, blast and gunshot injuries.
2. Surgical aspects of diabetes mellitus.
3. Bites and stings.
4. Organ transplantation - Basic principles.
5. Nutritional support to surgical patients.

II. RESUSCITATION.
1. Fluid electrolyte balance.
2. Shock: Aetiology, pathophysiology and management.

III. COMMON SKIN AND SUBCUTANEOUS CONDITIONS.
1. Sebaceous cyst, dermoid cyst, lipoma, haemangioma, neurofibroma, premalignant conditions of the skin, basal cell carcinoma, naevi and malignant melanoma.
2. Sinus and fistulae. Pressure sores; prevention and management.

IV. ARTERIAL DISORDERS.
1. Acute arterial obstruction: diagnosis and initial management; types of gangrene; diagnosis of chronic arterial insufficiency with emphasis on Burger’s disease, athroesclerosis and crush injuries.
2. Investigations in cases of arterial obstruction. Amputations;
3. Vascular injuries: basic principles of management.

V. VENOUS DISORDERS.
1. Varicose veins: diagnosis and management; deep venous thrombosis: diagnosis, prevention, principles of therapy; thrombophlebitis.

VI. LYMPHATICS AND LYMPH NODES.
1. Diagnosis and principles of management of lymphangitis, lymphedema, acute and chronic lymphadenitis; cold abscess, lymphomas, surgical manifestations of filariasis.

VII. BURNS.
1. Causes, prevention and first aid management; pathophysiology; assessment of depth and surface area, fluid resuscitation; skin cover; prevention of contractures.

VIII. SCALP, SKULL AND BRAIN.
1. Wounds of scalp and its management: recognition, diagnosis and monitoring of patients with head injury including unconsciousness; Glasgow coma scale recognition of acute / chronic cerebral compression.

IX. ORAL CAVITY, JAWS, SALIVARY GLANDS.
1. Oral cavity: I) Cleft lip and palate; Leukoplakia; retention cyst; ulcers of the tongue.
   II) Features, diagnosis and basic principles of management of carcinoma lip, buccal mucosa and tongue, prevention and staging of oral carcinomas.
IX. B. Epulis, cysts and tumours of jaw: Maxillofacial injuries; salivary fistulae
X. NECK.
   1. Branchial cyst; cystic hygroma.
X. B. Thoracic outlet syndrome: diagnosis.

XI. THYROID GLAND
   1. Thyroid: Surgical anatomy, physiology, investigations of thyroid disorders; types, clinical features, diagnosis and principles of management of goitre, thyrotoxicosis and malignancy, thyroglossal cyst and fistula.
XI. B. Thyroiditis, Hypothyroidism.

XII. PARATHYROID AND ADRENAL GLANDS.
   1. Clinical features and diagnosis of hyperparathyroidism, adrenal hyperfunction/ hypofunction.

XIII. BREAST.
   1. Surgical anatomy; nipple discharge; acute mastitis, breast abscess; mammary dysplasia; gynaecomastia; fibroadenomas.
   2. Assessment and investigations of a breast lump.

XIV. THORAX.
   1. Recognition and treatment of pneumothorax, haemothorax, pulmonary embolism: Prevention/ recognition and treatment, flail chest; Stove in chest ; Postoperative pulmonary complications.
XIV. B. Principles of management of pyothorax; cancer lung.

XV. HEART AND PERICARDIUM.
   1. Cardiac tamponade
   2. Scope of cardiac surgery.

XVI. OESOPHAGUS.
   1. Dysphagia: Causes, investigations and principles of management.

XVII. STOMACH AND DUODENUM.
   1. Anatomy; Physiology, Congenital hypertrophic pyloric stenosis; aetiopathogenesis, diagnosis and management of peptic ulcer, cancer stomach; upper gastrointestinal haemorrhage with special reference to bleeding varices and duodenal ulcer.

XVIII. LIVER
XVIII. B. Surgical anatomy; primary and secondary neoplasms of liver.

XIX. SPLEEN

XX. GALL BLADDER AND BILE DUCTS
1. Anatomy, physiology and investigations of biliary tree; clinical features, diagnosis, complications and principles of management of cholelithiasis and cholecystitis; obstructive jaundice.

XX. B. Carcinoma of gall bladder, choledochal cyst.

XXI. PANCREAS.
   1. Acute pancreatitis: Clinical features, diagnosis, complications and management.
   2. Chronic pancreatitis, pancreatic tumours.

XXII. PERITONEUM, OMENTUM, MESENTERY AND RETROPERITONEAL SPACE.
   1. Peritonitis: Causes, recognition and principles of management; intraperitoneal abscess.

XXII. B. Laparoscopy and laparoscopic surgery.

XXIII. SMALL AND LARGE INTESTINES
   1. Diagnosis and principles of treatment of: Intestinal amoebiasis, tuberculosis of intestine, carcinoma colon; lower gastrointestinal haemorrhage; Enteric fever, parasitic infestations.

XXIII. B. Ulcerative colitis, premalignant conditions of large bowel.

XXIV. INTESTINAL OBSTRUCTION.
   1. Types, aetiology, diagnosis and principles of management; paralytic ileus.

XXV. ACUTE ABDOMEN.
   1. Causes, approach, diagnosis and principles of management.

XXVI. APPENDIX
   1. Diagnosis and management of acute appendicitis, appendicular lump and abscess.

XXVII. RECTUM.
   1. Carcinoma rectum: diagnosis, clinical features and principles of management; indications and management of colostomy.

XXVII. B. Management of carcinoma rectum; prolapse of rectum.

XXVIII. ANAL CANAL.
   1. Surgical anatomy. Clinical features and management of: fissure, fistula in ano, perianal and ischiorectal abscess and haemorrhoids; Diagnosis and referral of anorectal anomalies.

XXVIII. B. Anal carcinoma.

XXIX. HERNIAS.

   2. Omphalitis.

XXIX. B. Umbilical fistulae, Burst abdomen, ventral hernia.

XXX. GENITO-URINARY SYSTEM.
   1. Symptoms and investigations of the urinary tract.

XXXI. KIDNEY AND URETER
   1. Investigations of renal mass; diagnosis and principles of management of urolithiasis, hydronephrosis, pyonephrosis, and perinephric abscess, congenital anomalies of kidney & Ureter and renal tumours.

   2. Renal tuberculosis.
XXXII. URINARY BLADDER.
   1. Causes, diagnosis and principles of management of haematuria, anuria and acute retention of urine.

XXXIII. PROSTATE AND SEMINAL VESICLES.
   1. Benign prostatic hyperplasia: diagnosis and management.
   2. Carcinoma prostate.

XXXIII. URETHRA AND PENIS
   1. Diagnosis and principles of management of Phimosis, paraphimosis and carcinoma penis.
   2. Principles of management of urethral injuries.
   3. Urethral strictures.

XXXV. TESTES AND SCROTUM
   1. Diagnosis and principles of treatment of undescended testis; torsion testis; Hydrocoele, hematocoele, pyocele, varicocele, epididymo-orchitis and testicular tumours.

XXXVI. PAEDIATRIC SURGERY
   1. Oesophageal atresia and Intestinal atresia
   2. Anorectal malformations
   4. Congenital diaphragmatic hernia
   5. Extrophy, Epispadias complex and hypospadias
   6. Spinal diastrophy and Hydrocephalus
   8. Testicular Maldescent
   9. Umbilical Hernia, Exompholos: Major/minor

Wilm’s Tumours: Neuroblastoma, Ganglioneuromabloblastoma, Ganglioneuroma, Endo-dermal Sinus Tumours, Hamartomas in Children: Lymphangioma and Cystic hygroma, Haemangioma, Biliary Atresia and Surgical jaundice