

**CURRICULUM**  
**FOR**  
**M.S (GENERAL SURGERY)**



**POST GRADUATE MEDICAL INSTITUTE**  
**QUETTA**

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## **Section -1**

### **INTRODUCTION**

University of Balochistan was established in 1970. The University awarded its first medical undergraduate Bachelor of Medicine and Bachelor of Surgery in 1977. The University of Balochistan is oldest and the most prestigious seat of learning in Balochistan.

The University runs courses of Undergraduate Education, Postgraduate Diploma Courses, Postgraduate diploma Courses in Faculty of Medicine.

The Postgraduate Medical Institute possesses all the relevant learning facilities like qualified and well trained faculty, teaching hospitals, libraries, lecture halls, Clinicopathological conference halls, laboratories, audiovisual aids, internet access, etc.

In this document Statutes and Regulations regarding the Scheme of the Course, eligibility criteria for admission to the course, details of training program, Syllabus, Specific Objectives of the training program, Research Thesis /Dissertation and format of examination of the Postgraduate degree course of M.S. (General Surgery) of the Post Graduate Medical Institute Quetta is presented.

**Section -2**

**ADMISSION CRITERIA**

**REGULATIONS REGARDING ADMISSION FOR GENERAL SURGERY COURSE**

The requirements for Admission in Post Graduate Degree Programme in MS General Surgery are laid down by PGMIQ are as under:

**ELIGIBILITY CRITERIA FOR ADMISSION.**

1. MBBS from the University of Balochistan or equivalent recognized by PM&DC.
2. One year House job after graduation with six months compulsory in surgery and allied.
3. Only those doctors are eligible who are in the active service of Government of Balochistan for a minimum period of two years.
4. Selection through entry test and selection committee approval.

### **Section -3**

## **AIMS AND OBJECTIVES OF THE COURSE.**

### **AIM**

The aim of four years MS Programme in General Surgery is to train residents to acquire the competency of a specialist in the field so that they can become good teachers, researchers and clinicians in their specialty after completion of their training

### **GENERAL OBJECTIVES**

1. That the student accepts General Surgery in its full sense as a life long activity and that he/she is prepared to invest time and effort to acquire, maintain and further improve his/her own knowledge and skills.
2. A critical appreciation of techniques, procedures carried out in General Surgery an understanding of scientific methods, reliability and validity of observations and the testing of hypothesis.
3. The ability and willingness to adopt a problem solving approach to manage clinical situations included in the definition of General Surgery.
4. The ability to plan and interpret a management program with due regards to the patients Comfort and economic factors.
5. His/ her awareness of the role of specialists of General Surgery in health / rehabilitation / welfare teams and his/ her willingness to work cooperatively within such teams.
6. The awareness that he/ she have to create his/ her own professional impact as a capable Specialist/ Teacher/ Scholar of General Surgery in the world.
7. To pursue and develop the basic scientific pursuits and guideline for scientific discoveries to strengthen knowledge further about human body requirements.

## **Section -4**

### **TRAINING PROGRAM**

As a policy, active participation of students at all levels will be encouraged.

Following teaching modalities will be employed:

1. Lectures
2. Seminar Presentation and Journal Club Presentations
3. Group Discussions
4. Grand Rounds
5. Clinico-pathological Conferences
6. SEQ as assignments on the content areas
7. Skill teaching in ICU, Operation Theatres, emergency and ward settings
8. Attend genetic clinics and rounds for at least one month.
9. Attend sessions of genetic counseling
10. Self study, assignments and use of internet
11. Bedside teaching rounds in ward
12. OPD & Follow up clinics
13. Long and short case presentations

In addition to the conventional teaching methodologies interactive strategies like conferences will also be introduced to improve both communication and clinical skills in the upcoming consultants. Conferences must be conducted regularly as scheduled and attended by all available faculty and residents. Residents must actively request autopsies and participate in formal review of gross and microscopic pathological material from patients who have been under their care. It is essential that residents participate in planning and in conducting conferences.

## Section -5

### DURATION AND SCHEME OF THE COURSE

A summary of Four (04) Years Course in MS General Surgery is presented as under:

#### 4 YEARS COURSE

PHASE-I (1 <sup>st</sup> Year)	PHASE-II (3 Years)
<ul style="list-style-type: none"><li>• <b>Basic Training in Specialty of admission (10 Weeks)</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Advanced Professional Education in General Surgery</b></li></ul>
<ul style="list-style-type: none"><li>• <b>Biostatistics &amp; Research Methodology</b></li><li>• <b>Submission of Synopsis (04 Weeks)</b></li></ul>	<b>Compulsory/Optional Rotation 06 Weeks Rotation in allied Surgical disciplines.</b> <ul style="list-style-type: none"><li>• Orthopedics.</li><li>• Neurosurgery</li><li>• Urology</li><li>• Plastic Surgery and Burn Unit</li><li>• Paediatrics Surgery</li></ul>
<ul style="list-style-type: none"><li>• <b>Basic Training in General Surgery</b></li><li>• <b>Basic Sciences Theory Classes</b> (Anatomy, Physiology, Biochemistry, Pharmacology &amp; Pathology relevant to the specialty)</li><li>• <b>Approval of Synopsis (34 Weeks)</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Log Book, Research / Thesis (assignments, assessments)</b> Submission and approval of research Thesis / dissertation at least 06 Months before Part-II examination.</li><li>• <b>Eligibility to appear in final Examination</b> is subject to approval of research thesis and completion of Log Book.</li></ul>
<b><u>INTERMEDIATE EVALUATION (PART-I EXAM)</u></b>  ❖ <b>Written</b> <b>Two Papers For Part-1</b> The Part-I Examination will be held at the end of 1 <sup>st</sup> Calendar Year. <ul style="list-style-type: none"><li>• <b>Principles of Surgery</b> ( 100 MCQ Single Best Type)</li><li>• <b>Basic Science Education</b> ( 100 MCQ Single Best Type)</li></ul>	<b><u>FINAL EVALUATION (PART-II EXAM)</u></b>  ❖ <b>Written</b> <b>Four Papers For Part-II</b> Part-II Examination will be held at the end of 4 <sup>th</sup> Calendar Year <ul style="list-style-type: none"><li>• <b>General Surgery Paper-A</b> ( 100 MCQ Single Best Type)</li><li>• <b>General Surgery Paper-B</b> ( 100 MCQ Single Best Type)</li><li>• <b>General Surgery Paper-A</b> ( 10 Short Essay Questions)</li><li>• <b>General Surgery Paper-B</b> ( 10 Short Essay Questions)</li></ul> ❖ <b>Oral &amp; Practical / Clinical Examination</b> <ul style="list-style-type: none"><li>• <b>Long Case</b> 01</li><li>• <b>Short Cases</b> 04</li><li>• <b>TOCS</b> 10 Stations</li></ul>

## **Section-6**

# **SYLLABUS FOR M.S GENERAL SURGERY.**

## **Principles of Surgery:**

- History of surgery
- Preparing a patient for surgery
- Principles of operative surgery: asepsis, sterilization and antiseptics
- Surgical infections and antibiotics
- Basic principles of anaesthesia and pain management
- Acute life support and critical care:
- Pathophysiology and management of shock
- Fluids and electrolyte balance/ acid base metabolism
- Haemostasis, blood transfusion
- Trauma: assessment of polytrauma, triage, basic and advanced trauma
- Accident and emergency surgery
- Wound healing and wound management
- Nutrition and metabolism
- Principles of burn management
- Principles of surgical oncology
- Principles of laparoscopy and endoscopy
- Organ transplantation
- Informed consent and medico-legal issues
- Molecular biology and genetics
- Operative procedures for common surgical manifestations e.g. cysts, sinuses, fistula, abscess, nodules, basic plastic and reconstructive surgery
- Principles of basic diagnostic and interventional radiography
- Principles and interpretation of conventional and advanced radiographic procedures

## **Common Surgical Skills**

- Incision of skin and subcutaneous tissue:
  - o Langer's lines
  - o Healing mechanism
  - o Choice of instrument
  - o Safe practice
- **Closure of skin and subcutaneous tissue:**
  - o Options for closure
  - o Suture and needle choice
  - o Safe practice
- **Knot tying:**
  - o Choice of material



- o Single handed
- o Double handed
- o Superficial
- o Deep
  
- **Tissue retraction:**
  - o Choice of instruments
  - o Placement of wound retractors
  - o Tissue forceps
  
- **Use of drains:**
  - o Indications
  - o Types
  - o Insertion
  - o Fixation
  - o Management/removal
  
- **Incision of skin and subcutaneous tissue:**
  - o Ability to use scalpel, diathermy and scissors
  
- **Closure of skin and subcutaneous tissue:**
  - o Accurate and tension free apposition of wound edges
  
- **Haemostasis:**
  - o Control of bleeding vessel (superficial) o Diathermy
  - o Suture ligation
  - o Tie ligation
  - o Clip application
  - o Plan investigations
  - o Clinical decision making
  - o Case work up and evaluation; risk management
  
- **Pre-operative assessment and management:**
  - o Cardiorespiratory physiology
  - o Diabetes mellitus
  - o Renal failure
  - o Pathophysiology of blood loss
  - o Pathophysiology of sepsis
  - o Risk factors for surgery
  - o Principles of day surgery
  - o Management of comorbidity
  
- **Intraoperative care:**
  - o Safety in theatre
  - o Sharps safety
  - o Diathermy, laser use
  - o Infection risks

- o Radiation use and risks
- o Tourniquets
- o Principles of local, regional and general anaesthesia
- **Post-operative care:**
  - o Monitoring of postoperative patient
  - o Postoperative analgesia
  - o Fluid and electrolyte management
  - o Detection of impending organ failure
  - o Initial management of organ failure
  - o Complications specific to particular operation
  - o Critical care
- **Blood products:**
  - o Components of blood
  - o Alternatives to use of blood products
  - o Management of the complications of blood product transfusion including children
- **Antibiotics:**
  - o Common pathogens in surgical patients
  - o Antibiotic sensitivities
  - o Antibiotic side-effects
  - o Principles of prophylaxis and treatment
- **Safely assess the multiply injured patient:**
  - o History and examination
  - o Investigation
  - o Resuscitation and early management
  - o Referral to appropriate surgical subspecialties
- **Technical Skills**
  - o Central venous line insertion
  - o Chest drain insertion
  - o Diagnostic peritoneal lavage
  - o Bleeding diathesis & corrective measures, e.g. warming, packing
  - o Clotting mechanism; Effect of surgery and trauma on coagulation
  - o Tests for thrombophilia and other disorders of coagulation
  - o Methods of investigation for suspected thromboembolic disease
  - o Anticoagulation, heparin and warfarin
  - o Role of V/Q scanning, CT angiography and thrombolysis
  - o Place of pulmonary embolectomy
  - o Awareness of symptoms and signs associated with pulmonary embolism and DVT
  - o Role of duplex scanning, venography and d-dimer measurement
  - o Initiate and monitor treatment

- **Diagnosis and Management of Common Surgical Conditions:**

- abdominal pain
- Vomiting
- Trauma
- Groin conditions
- Hernia
- Hydrocoele
- Penile inflammatory conditions
- Undescended testis
- Acute scrotum
- Abdominal wall pathologies
- Urological conditions
- Constipation
- Head / neck swellings
- Intussusception
- Abscess

- **In growing toenail**

In terms of general experience it is expected that trainees would have gained exposure to the following procedures and to be able to perform them.

- **Elective Procedures**

- Inguinal hernia  
(not neo-natal)
- Orchidopexy
- Circumcision
- Lymph node biopsy
- Abdominal wall herniae
- Insertion of CV lines
- Management of in growing toenails
- EUA rectum
- Manual evacuation
- Open rectal biopsy
- Excision of skin lesions

- **Emergency Procedures**

- Appendicectomy
- Incision and drainage of abscess
- Pyloromyotomy
- Operation for testicular torsion
- Insertion of pleural drain
- Insertion of suprapubic catheter
- Reduction of intussusception

# **Clinical component**

## **(HEAD, NECK, ENDOCRINE AND PAEDIATRIC)**

### **UNIT HEAD AND NECK**

Acute inflammatory disorders

- The Ear
- Acute Tonsillitis
- Stridor
- Acute Sinusitis
- Sudden Facial Nerve Palsy

Intracranial complications of ENT infections

Tumors

- The Larynx
- Oropharynx
- Nasopharynx
- Salivary Glands

Foreign bodies in the ear, nose and throat

Dysphagia

Epistaxis

The Eye

- Trauma
- Common Infections

### **UNIT NECK AND ENDOCRINE GLANDS**

The Neck

- Overview of lumps in the neck

The Thyroid Gland

- Multi Nodular Goiter
- Diffuse Enlargement and Solitary nodules
- Thyroid Cancer
- Hypothyroidism (Myxoedema).
- Thyroid Physiology and Thyrotoxicosis (Hyperthyroidism).

- Thyroidectomy
- Thyroiditis

#### The Parathyroid Glands and Calcium Homeostasis

- Hyperparathyroidism
- Hypoparathyroidism

#### The Adrenal Glands

- Secondary Hypertension
- Cushing's Syndrome (hypercortisolism)
- Adrenocortical Insufficiency
- Aldosteronism and the adrenogenital syndrome
- Pheochromocytoma
- Adrenalectomy

### **PAEDIATRIC DISORDERS**

#### **UNIT CHILD SPECIFIC**

Differences in the management of children and adults

- Differences of Scale
- Differences of Physiology
- Differences in Communication
- Differences in diseases

Principles of fluid and electrolyte balance

- Maintenance requirements
- Resuscitation

Vascular Access

- Peripheral Veins
- Trepine Needle
- Central Veins
- Arterial Access

Congenital Anomalies

- Gastrointestinal
- Diaphragm and Abdominal Wall
- Neural Tube
- Cleft Lip and Palate

## Urological Conditions

Jaundice in neonates

## Acquired Neonatal Conditions

### Abdominal Emergencies

- Infantile Pyloric Stenosis
- Intussusception
- Malrotation and volvulus neonatorum
- Meckel's diverticulum
- Appendicitis and Mesenteric Adenitis
- Visceral Trauma in Infancy and Childhood
- Non-specific Abdominal Pain
- Recurrent Abdominal Pain
- Organic Disease
- Childhood Constipation

### Inguino-scrotal Problems

- Hernias and Hydroceles
- Incarceration and Strangulation
- Acute Scrotum
- Clinical Features of Torsion of the Hydatid of Morgagni
- Idiopathic Scrotal Oedema
- Torsion of the Testis
- Epididymitis

### Elective Surgery of the External Genitalia

- Malescent of Testis
- Testicular Malignancy
- The Foreskin

### Pediatric Oncology

- Liver Tumors
- Neuroblastoma
- Nephroblastoma (Coilm's tumor)
- Rhabdomyosarcoma
- Germ Cell Tumors

## Umbilical Disorders

- Omphalitis
- Umbilical Hernia

## Abnormalities of the External Genitalia

- Hypospadias
- Intersex
- Epispadias

# **LOCOMOTOR**

## **UNIT EFFECTS OF TRAUMA AND LOWER LIMB**

### Common fractures and joint injuries

- Humerus
- Radius and Ulna
- Carpus
- Proximal Femur
- Knee
- Tibia
- Ankle
- Clavicle

### Arthritis (including joint replacement)

- Osteoarthritis
- Rheumatoid Arthritis

### Surgical Anatomy of the Knee

### Joint Operations

- Surgical Approaches to the hip

### Complications of Orthopaedic Surgery

### Common Disorders of the Foot

## **UNIT INFECTIONS AND UPPER LIMB**

### Infections of Bones and Joints

- Acute bone infections
- Acute joint infections
- Chronic bone infections

- Postoperative osteomyelitis
- Tuberculosis of the Skeleton

Pain in the Neck, Shoulder and arm

- The Neck
- The Shoulder
- Adhesive Capsulitis

Dislocation of the shoulder

The elbow

The hand

- Examination of the hand
- Hand trauma
- Flexor tendon injuries
- Hand infection
- Tendon sheath infection
- Arthritis of the hand
- The rheumatoid hand
- Contractures
- Hand lumps and bumps
- Peripheral nerves in the hand

### **UNIT PAEDIATRIC OTTHOPAEDICS, BONE DISEASE, SPINE AND NERVE INJURIES**

Common Orthopaedic problems of childhood

- Congenital dislocation of the hip
- Congenital talipes equinovarus or “club-foot”
- The limping child

Low back pain and sciatica

Metabolic bone disease

- Rickets and osteomalacia
- Osteoporosis
- Paget’s disease

Pathological fractures



Surgical aspects of nerve injuries and paralytic disorders

- Nerve injuries
- Dermatomes and muscle power
- Surgical aspect of paralytic disorders
- Treatment of paralytic disorders
- Neoplasias of Bones

## **URINARY SYSTEM AND RENAL TRANSPLANTATION**

### **UNIT URINARY TRACT I**

Embryological development of the Urinary Tract

Imaging in Urology

- Problems in imaging

Renal physiology

Urinary Infection

- Microbiology of Urinary Infection
- Infection of the Urinary Tract

Antibiotic prophylaxis in Urological Patients

Haematuria

Urological cancer

- Renal cell carcinoma-pathological considerations
- Transitional cell carcinoma of the urothelium

Bladder Cancer

Trauma to the Urinary Tract

- Trauma to the kidney and ureter
- Trauma to the bladder, urethra and penis

Urinary stone disease

- Management of upper urinary tract calculi

Surgical Treatment of urinary calculi

A general view on the management of stones

Bladder calculi

## **UNIT URINARY TRACT II**

Anatomy of the Kidney

Pelvi-ureteric junction (PUJ) obstruction

Congenital kidney abnormalities

Injuries to the kidney and ureters

- Ureteric injury

Kidney infections

- Acute kidney infections
- Chronic kidney infections

Diseases of the bladder

Disorders of bladder function

Anatomy of the bladder and sphincter mechanism

Nerves of the bladder/sphincter mechanism

Principles of urodynamic investigation

- Main indications for uroflowmetry
- Main indications for simple pressure / flow cystometry

Bladder function after spinal cord injury

- Bladder fistulae

Anatomy of the prostate

Benign disease of the prostate

- Histopathology of the prostate
- Operations on the prostate

Carcinoma of the prostate

- Histopathology
- Diagnosis of prostate cancer
- Screening for prostate cancer
- Management of localized prostate cancer
- Notes on managing advanced prostate cancer

Acute retention of urine

Diseases of Urethra and penis

- Injuries to the Urethra
- Urethral stricture

- Penile problems
- Circumcision
- Priapism
- Carcinoma of the penis

Diseases of the scrotum, testis and epididymis

- The scrotum
- Hydroceles, epididymal cysts and varicocele
- Congenital testicular abnormalities and Maldescent
- Urinary incontinence
- Neurogenic bladder
- Urinary fistulas
- Painful scrotal swellings
- Testicular Tumours

## **UNIT RENAL FAILURE AND TRANSPLANTATION**

The principles of dialysis

Transplantation and tissue rejection

Brain stem death

Suitability of donors for organ transplantation

Clinical management of renal failure

Ethical considerations in transplantation

## **TRAUMA**

### **UNIT INITIAL ASSESSMENT AND RESUSCITATION AFTER TRAUMA**

A system for managing injured patients

Management of the injured patient

Physiological response to injury

Primary Survey

The secondary survey

Major Injuries

Resuscitation from major injury

- Resuscitation from major injury – the child

- Resuscitation from major injury – the adult

Another injured patient

## **UNIT CHEST, ABDOMEN AND PELVIS**

Physiological response to haemorrhagic, obstructive and myocardial shock

Thoracic trauma

- Management of thoracic injuries in the primary survey
- Management of thoracic injuries in the secondary survey

Blunt thoracic injuries

Major abdominal injuries and pelvic fractures

Military antishock trousers and other adjuncts

## **UNIT CENTRAL NERVOUS SYSTEM TRAUMA**

CNS trauma

Pathophysiology of raised intracranial pressure

Head injuries: general principles of management

Skull fractures

- Cerebrospinal fluid loss as a result of local trauma

Spinal column and cord injury

Rehabilitation

Brain tumours

Intracranial vascular anomalies

## **UNIT SPECIAL PROBLEMS**

Pre-hospital care

- When things go wrong – a salutary tale
- The concept of pre-hospital care
- Delivery of pre-hospital care

Multiple casualty management

- Triage

Trauma scoring systems

Traumatic Wounds

- Ballistic injury

- Blast injury

Skin loss

Burn injury

- Burn injury – immediate management – fluid replacement
- Burn injury – complications
- Burn injury – later management

Maxillofacial injuries

Eye and orbit

## **UNIT PRINCIPLES OF LIMB INJURY**

Anatomy and physiology of the skeletal and peripheral nervous system

- The skeletal system
- Peripheral nervous system

Fractures – Pathology of injury and physiology of healing

Fractures – Non-union, delayed union and local complications

Fractures – Traumatic Oedema, compartment and crush syndromes, fat embolism

Coagulopathy and fat embolism – a cautionary tale

Fractures – Classification and general management principles

Fractures – Principles of bone grafting

Brachial plexus injury

## **VASCULAR**

### **UNIT ARTERIAL DISEASE 1**

Chronic lower limb ischaemia

- The differential diagnosis of pain in the lower limb
- General investigations of the patient with arterial disease
- Specific investigations of the patient with arterial disease

Acute on chronic limb ischaemia

Anatomy of the arteries of the femoral triangle

Acute lower limb ischaemia

- Systemic emboli

- Thrombolysis

Anatomy of the arteries of the lower thigh

Arterial exposure of the lower leg

Physiology of the arterial system

- Mean arterial pressure
- Determinants of arterial pressure
- Pulse pressure
- Arterial pressure curves
- Haemodynamics
- The relation of pressure and flow
- The systemic circulation
- Pulmonary circulation
- The arrangement of blood vessels
- Vascular resistance
- Determinants of vascular resistance
- Velocity and flow

Haemodynamics and arterial Stenosis

Critical Stenosis

Turbulence and arterial Stenosis

Collateral circulations

Measurement of blood flow

- Ultrasound methods
- Indicator dilution techniques
- Thermodilution techniques
- Plethysmography

The cutaneous circulation

Skeletal muscle circulation

Anatomy of the distal vascular free of the lower limb

Pathology of atherosclerosis

Pathophysiology of gangrene

Amputation

## **UNIT ARTERIAL DISEASE**

Aneurysm

- Pulsatile masses

Anatomy of the abdominal aorta

Pathology of Aneurysms

The pathophysiology of aneurysms

- Femoral and popliteal aneurysms

Carotid disease

- Clinical aspects of carotid disease

Anatomy of the great vessels of the neck and cerebral circulation

Duplex imaging and magnetic resonance angiography

- Duplex imaging
- Magnetic resonance angiography
- Non-invasive carotid disease investigations

Physiology of cerebral circulation

- Factors affecting the cerebral circulation
- The Fick principle and its application to measurement of cerebral blood flow

Positron Emission Tomography (PET)

Vascular trauma and upper limb arteries

- Vascular injuries

Anatomy of thoracic inlet and upper limb vessels

Principles of peripheral vascular control

- Vascular smooth muscle
- Local control of blood flow
- Extrinsic control of peripheral blood flow
- Vascular reflexes
- Balance between extrinsic and intrinsic mechanisms

Anatomy of the vasculature of the forearm and hand

## **UNIT VENOUS DISEASES, LYMPHATICS AND SPLEEN**

Varicose veins

- How frequent are varicose veins and why do they occur?

- Pathological features
- Clinical examination of a limb with varicose veins
- Leg ulcers

#### Veins of the lower limb

- Anatomy of the veins of the lower limb
- Radiological anatomy

#### Venous return

- Venomotor tone
- Respiratory movements
- Gravity and blood flow
- Muscular activity and venous valves – the muscle or calf pump

#### Thromboembolic disease

- Radiological investigations
- Signs and symptoms of pulmonary embolism
- Pathology of thrombosis and the hypercoagulable state
- Prophylaxis of deep vein thrombosis

#### Anatomy of the veins of the upper limb

#### Clinical features, diagnosis and management of established deep vein thrombosis and pulmonary embolism

#### The spleen

- Anatomy of the spleen
- Radiological anatomy of the spleen
- Pathology of the spleen and lymphoreticular system

#### Pathology of neoplastic disorders of white cells

#### Plasma cell dyscrasias and related disorders

- Myeloproliferative disorders
- Non – neoplastic disorders of lymph nodes

#### Disorders of haemopoiesis – anaemias

#### Lymphoedema



## **INTENSIVE CARE**

### **UNIT CARDIOVASCULAR**

Cardiac anatomy

- The heart
- Valves and chambers
- Anatomy of the great vessels
- Coronary arteries and conducting system

Cardiac physiology

- The heart as a pump
- The cardiac cycle
- Cardiac conduction and the ECG
- Coronary circulation
- Pressure, flow and resistance in the circulation
- Regulation of Cardiac contraction
- Control of the cardiac output

The Cardiovascular system in clinical practice

- Cardiovascular monitoring
- Shock
- Cardiac failure and pulmonary oedema
- Cardiac arrest and resuscitation

Cardiac surgery and mechanical circulatory support

### **UNIT RESPIRATORY**

Applied anatomy and physiology of respiration

- The surgical anatomy of the airways, chest wall, diaphragm and thoracic viscera
- The mechanism and control of respiration

Interpretation of special investigations

- Lung function test

- Flow volume loops
- Gas transfer
- Arterial blood gases
- Arterial line
- Pulse oximetry

Radiology

- Chest radiography
- Pulmonary infection
- Non – infective conditions

Disorders of respiratory function caused by trauma, acute surgical illness and surgical intervention

Respiratory failure

Endotracheal intubation and tracheostomy

Artificial ventilation and respiratory support

Acute respiratory distress syndrome (ARDS)

### **UNIT MULTISYSTEM FAILURE**

Multisystem failure

- Pathophysiology

Renal Failure

- Acute renal failure
- Acute tubular necrosis (ATN)

Management of acute renal failure

- Hydration
- Nutrition
- Optimisation of serum biochemistry
- Infection
- Drug administration

Gastrointestinal tract/hepatic problems in the critically ill patient

Nutrition in the ICU patient

### **UNIT PROBLEMS IN INTENSIVE CARE**

Terminology in sepsis

Predisposing factors in developing sepsis

- Infecting organisms
- Impaired host defences

Management of sepsis

- Pneumonia in ICU
- Empyema and lung abscesses
- Opportunistic pneumonia

Septic shock

- Management of septic shock

Problems of Intensive Care

- Complications of thoracic operations
- Air leak problems
- Specific problems related to pneumonectomy
- Retained secretions
- Pain control

## **UNIT PRINCIPLES OF INTENSIVE CARE**

Principles of Intensive Care

- Admission criteria
- Discharge
- Inter – hospital transfers

Organization and staffing of the ICU

- Configuration
- Patient Procedures

Costs in Intensive Care

Comparative expenditure on ICU / HDU

Scoring and outcome

## **PERIOPERATIVE MANAGEMENT**

### **UNIT SKIN AND WOUNDS**

Wound Healing

- Growth factors and wound healing
- Delayed wound healing

Surgical wounds

Incisions and their closure

Scars and contractures

Wound dehiscence

Dressings

## **UNIT FLUID BALANCE AND NUTRITION**

Fluid and electrolyte balance

Body fluid compartments

Body fluids and their replacement

- Normal Saline
- Dextrose Saline

Acid – base balance

- Henderson – Hasselbach equation
- Anion gap (AG)

Blood Gases

Central and peripheral venous access

- The anatomy of venous access
- Peripheral venous access
- Central venous access
- Infraclavicular subclavian route
- Supraclavicular subclavian vein cannulation
- Percutaneous internal jugular venous cannulation
- Complications of venous access techniques

Nutrition in the Surgical Patient

- Dietary intake
- Weight loss
- Muscle mass
- Biochemical Markers
- Anaemia

Nutritional Support

Total parenteral nutrition

## **UNIT BLOOD**

Blood

Anaemia

- Presentation and causes of Anaemia
- Management of anaemic patients

Practical aspects of blood transfusion

- Safe administration of blood and blood products

Disorders of coagulation

- Disseminated intravascular coagulation (DIC)
- Anticoagulation

Correction of intra – and postoperative blood loss

- Massive transfusions
- Fresh frozen plasma
- Use of platelet transfusion
- Indications for albumin infusion

Adverse effects of transfusion

Autologous blood

## **UNIT POST OPERATIVE COMPLICAITONS**

Postoperative complications

- Preoperative risks
- Intraoperative risk factors
- Classifications of postoperative complications

Respiratory disease and Ventilatory support

- General recognition of respiratory diseases
- Preoperative risk factors for respiratory diseases
- Definitions of respiratory failures
- Ventilatory support
- 

## **UNIT POST OPERATIVE SEQUELAE**

Pain control

- Pain pathways
- Pathophysiology of nociception
- Modulation

#### Acute Pain

#### Analgesics

- 1. Non-steroidal anti – inflammatory drugs (NSAIDs)
- 2. Opioid  $\mu$  agonists and high efficacy partial agonists
- 3. The opioid agonist – antagonists
- Strategies for effective postoperative analgesia
- Recording post operative pain
- Analgesic techniques for a few common procedures

#### Chronic Pain

#### Acute Inflammation

- Cellular events
- Chemotaxis
- Phagocytosis
- Chemical mediators of inflammation
- The effects of inflammatory mediators

#### Pathophysiology of the body's response to trauma

#### The Immune system

- Complement and antibody
- Disorders related to the immune system
- Hypersensitivity
- Autoimmunity

#### The Immunocompromised patient

- Recognition of the Immunocompromised patient
- Protection of the patient
- Prophylactic antibiotics

#### Universal precautions against infection in the operating theatre environment

- Extra precautions

## **NEOPLASIA**

### **TECHNIQUES & OUTCOME OF SURGERY**

#### **UNIT PRINCIPLES OF ONCOLOGY**

Epidemiology of common cancers

- Gastric Cancer
- Cancer of the colon and rectum
- Malignant melanoma

Cancer registries

The pathological features of neoplasia

- Neoplasms and mass lesions
- Benign or malignant
- Structural features of common Neoplasms

Tumour grading and staging

Clinical features of common cancers

Clinico – pathological staging of cancer

Principles of cancer treatment

- Surgery
- Radiotherapy
- Chemotherapy
- Hormonal treatment in malignancy

Oncogenesis and the molecular biology of cancer

- Oncogenes, tumour suppressor genes and mutator genes
- Metastasis and its mechanisms
  
- Acquisition of a new blood supply (angiogenesis)
- Adhesion of cells to basement membranes

#### **UNIT BREAST, CANCER SCREENING AND TREATMENT**

The breast

- Anatomy of the breast
- Congenital and development disorders of the breast

- Fibroadenoma
- Breast pain
- Disorders of breast involution
- Inflammatory lesions of the breast
- Nipple discharge and retraction
- Miscellaneous lesions of the breast
- Revision of benign breast disorders

#### Carcinoma of the breast

- Aetiology of breast carcinoma
- Staging, pathology and diagnosis of breast carcinoma
- Treatment of breast carcinoma
- Surgical anatomy of the axilla
- Adjuvant therapy for carcinoma of the breast
- Locally advanced breast carcinoma

#### Screening

### **UNIT TECHNIQUES OF MANAGEMENT OF THE CANCER PATIENT**

#### Clinical problems in advanced malignancy

- Principles of symptom control
- Nature of pain
- Relief of pain
- Narcotic resistant pain

#### Surgically related problems

#### Terminal phase of the illness

- Breaking bad news and bereavement

#### Rehabilitation

#### Psychological response to surgery

- Ambiguity and uncertainty
- Cancellation
- Denial and avoidance
- Preparation of surgery
- Post operative reaction and recovery



- The Intensive Care Unit
- Anticipatory guidance
- Counseling after disabling surgery
- Multilatation
- Ileostomy and colostomy

Revision exercises

### **UNIT ETHICS AND THE LAW**

Moral and legal rights

Obtaining informed consent

Claims against surgeons

The prudent patient

Difficulties in obtaining informed consent of the unconscious patient

Informed consent and children

Informed consent and psychiatric patients

Not providing life saving treatment and euthanasia

Confidentiality

Communication skills and informed consent

### **UNIT OUTCOME OF SURGERY**

Clinical decision – making

Clinical audit

Statistics and computing in surgery

Numeracy and statistics

Critical evaluation of innovations – technical and pharmacological

Economic aspects of surgical care

## **GASTROINTESTINAL**

### **UNIT ABDOMINAL WALL AND OESOPHAGUS**

Hernias

- Anatomy of groin
- Complications of hernias

Abdominal incisions

- Anatomy of the abdominal wall

Minimal access surgery

Stomas

Oesophagus

- Gastro – oesophageal reflux disease
- Hiatus hernia
- Motor disorders of the Oesophagus
- Oesophageal perforation
- Dysphagia
- Benign Oesophageal disorders
- Carcinoma of oesophagus
- Non – operative management of unresectable carcinoma of the oesophagus

Small Bowel

- Anatomy and physiology of small bowel
- Imaging and investigations
- Intestinal fistulas
- Tumors of small bowel
- Bleeding from small bowel
- Intestinal Ischaemia
- Diverticula of small bowel
- Intestinal Enteritis
- Short Bowel Syndrome
- Small Bowel Bypass Surgery

### **UNIT LARGE BOWEL**

- Anatomy and Physiology of Large Bowel
- Symptoms of non acute abdominal disorders
- Diagnosis of colorectal disease
- Inflammatory Bowel Disease
- Benign Colonic Tumors
- Colorectal cancers
- Vascular Maltormatious

- Ischemic disease of large bowel
- Irritativum bowel
- Infective bowel disease

#### **UNIT PERIANAL CONDITIONS**

- Anatomy and Physiology of rectum and anus
- Haemorrhoids
- Anal Fissures
- Anorectal abscess
- Anorectal fistulas
- Pilonidal sinus
- Bursitis ani
- Rectal prolapse
- Proctalgia Fugax
- Rectal Incontinence
- Anal Cancers
- Sexually Transmitted Anorectal Disease

#### **UNIT ACUTE ABDOMINAL CONDITIONS**

##### Acute Abdominal Pain

- Causes
- History
- Examination
- Common acute abdominal emergencies

##### Acute upper gastrointestinal problems

##### Liver and biliary tract – anatomy and physiology

##### Intestinal obstruction

- A few points on the management of large bowel obstruction
- Pseudo – obstruction
- Peritonitis
- Stomas

## **UNIT NON-ACUTE ABDOMINAL CONDITIONS**

Indigestion

Visceral and somatic pain

Epigastric pain

Abdominal Masses

Jaundice

A change in bowel habit

- Rectal bleeding

Inflammatory bowel disease

Anal and perianal disorders

- Perianal pain
- Anorectal sepsis
- Haemorrhoids
- Anal fissure
- Anal fistula
- Intestinal fistula

## **UNIT STOMACH AND DUODENUM**

- Anatomy of Stomach
- Anatomy of Duodenum
- Physiology of upper GI tract
- Peptic ulceration
- Complications of peptic ulcerations
- Gastric carcinoma
- Gastritis
- Gastric volvulus
- Ingested foreign bodies
- Duodenal tumors
- Gastric surgery for morbid obesity

## **HEPATO BILIARY**

### **UNIT LIVER AND SPLEEN**

- Anatomy of liver
- Physiology of liver
- Jaundice
- Portal hypertension
- Clinical evaluation of liver disease
- Cirrhosis
- Liver – masses
- Liver – cysts
- Spleen Functions
- Anatomy of Spleen
- Splenomegaly
- Splenectomy with complications

### **UNIT BILIARY TREE AND PANCREAS**

- Anatomy of Biliary System
- Physiology of Biliary Tree
- Gall stones
- Carcinoma gallbladder
- Cholangitis
- Bile duct strictures
- Bile duct carcinoma

### **UNIT ANATOMY OF PANCREAS**

- Embryology of pancreas
- Physiology of pancreas
- Pancreatitis
- Pancreatic Carcinoma
- Islet Cell Tumors
- Pancreatic cysts

## **Section -7**

### **SPECIFIC OBJECTIVES.**

The objective of M.S postgraduate programme is as follows:-

- ❖ Block-1. First one year of training.
- ❖ Block-2. Four years of training.

#### **Block-1.**

A postgraduate student of M.S General Surgery programme at the end of the one year training is able to:-

- After attending research methodology works synopsis develop the skill to
  - Write synopsis
  - Write Research work
- The goals are to develop knowledge of surgical diseases and complications, develop surgical judgment, learn basic pre- and post-operative care, and develop elementary skills in surgical technique.
- Perform and document comprehensive surgery history and physical examination [H&P] abilities
- Understand and interpret indications for laboratory studies and imaging
- Develop skills necessary to establish and implement an effective patient management plan
- Perform service examination
- Demonstrate a solid foundation of knowledge
- Develop accuracy in clinical evaluation skills
- Provide compassionate ward and outpatient care as determined by patients, families, colleagues and ancillary health
- Develop and nurture sound and appropriate interpersonal and communication skills

#### **Block-2.**

A postgraduate student of M.S General Surgery programme at the end of 04 years training is able to:-

- Teach medical students the fundamentals of the surgical H&P
- Accurately interpret complex laboratory and imaging tests and other

fundamental skills

- Develop complex patient diagnostic and managerial skills
- Perform selected surgical procedures under direct supervision.
  - Assist in major surgical procedures and perform those portions of the operation that are appropriate to the resident's level of training under direct supervision
- Demonstrates competency regarding performance of inpatient and surgical procedures
- Demonstrate clear and concise patient care plans
- Demonstrate the ability to implement the aforementioned patient care plans.
- Acquire trauma and commensurate critical care skills
- Demonstrate the ability to evaluate medical literature in journal clubs and on rounds
- Demonstrate an ongoing and improving ability to learn from errors
- Develop critical care and trauma care and technical skills
- Perform a clinical or basic research project that is appropriate
- Develop fundamental research skills
- Begin to direct ward and clinic patient care
- Instruct residents and medical students regarding their performance of selected non-complex surgical procedures appropriate to their level of training
- Demonstrate competency regarding performance of inpatient and surgical procedures
- Demonstrate clear and concise patient care plans
- Demonstrate the ability to implement the aforementioned patient care plans
- Provide high level non-operative care
- Manage and administrate the complexities of a large clinical and academic service
- Demonstrate ability to perform all major surgical procedures.
- Demonstrate the highest level of patient care skills, problem solving

skills and technical skills

- Have a working knowledge of the necessary pre-operative work-up and post-operative management of the complex surgical patient.
- Perform a focused surgical evaluation in context with the patient's complaint.
- Demonstrate an ability to prescribe appropriate parenteral and enteral feeding.
- Recognize and treat the complications of parenteral and enteral feeding.
- Demonstrate an ability to manage the fluid and electrolyte requirements, including acid- base issues of pediatric and adult surgical patients.
- Demonstrate an ability to perform an initial evaluation and management of critically ill surgical patients.



## **Section -8**

### **RESEARCH THESIS / DISSERTATION**

#### **(a) CHARACTERISTICS OF THE RESEARCH TOPIC.**

The Research Topic in clinical subjects should address 20% to the Related Applied Basic Sciences and in Basic Sciences should address 20% to the Related Applied Clinical Sciences. The research topic must consist of a reasonable sample size and sufficient no. Of variables to give training to the candidate to conduct research to acquire data, analyze data and reach results, discuss results and draw conclusions and thus test the hypothesis.

During course on Research Methodology and Biostatistics held during Phase-I of the Course, the Candidate is expected to develop synopsis of Research.

#### **(b) GUIDELINES FOR PREPARATION OF SYNOPSIS**

The applicants should organize the synopsis to address the following points:-

a) Title :

b) Introduction : Should clearly manifest why the present work is undertaken.

c) Literature review : Place the project in academic context by referring to the major work by others on the topic.

d) Objectives : Define clearly the aims of the research proposal.

e) Significance : Explain the significance of the proposal for the field and the country.

f) Plan : Give year wise tentative plan of the work.

g) Methodology : Explain the approach and methods he will follow.

h) Bibliography : Upto dated references.

**(c) SUBMISSION / EVALUATION OF SYNOPSIS.**

Synopsis of research project will be submitted during the year-1 of the course. The synopsis will be submitted through the supervisor to the Dean / Director PGMI, Quetta. The synopsis will be evaluated by the following committee.

- |                                               |                   |
|-----------------------------------------------|-------------------|
| 1. Dean / Director or his representative.     | Chairman          |
| 2. Supervisor of the student                  | Member/ Secretary |
| 3. One Prof. appointed by the Dean / Director | Member            |
| 4. Co-opted member whenever required          |                   |

After the approval, by the Committee the synopsis will be submitted to the Board of Higher Studies in the University of Balochistan for further approval by the Vice Chancellor University of Balochistan.

**(d) GUIDELINES FOR THESIS / DISSERTATION FORMAT**

The thesis must be bound in accordance with the following specification:

- a) Four hard copies and one soft copy (CD) of thesis / dissertation to be submitted.
- b) A4 paper size to be used, except for drawings and maps on which no restriction in placed.

A margin 1.5 inches to be left on left hand side. Thesis copy should be properly hard bounded.

- c) The front should bear the title, name of the candidate and the insignia of the University.

**(e) SUBMISSION OF THESIS / DISSERTATION.**

- 1) The Thesis / Dissertation must be bound in accordance with specifications.
- 2) Four (4) copies of the Thesis must be submitted at least 6- months before the commencement of the written and oral Examination.

- 3) The minimum duration between approval of synopsis of research and submission of thesis should be 2 years, the maximum duration will be 5 years.
- 4) The Thesis will be submitted along with Bank Challan Form of amount as fixed by University of Balochistan paid in the account of University of Balochistan.
- 5) Application for Thesis Evaluation recommended by the Supervisor.

**Section -9**

**LOG BOOK.**

The residents must maintain a log book and get it signed regularly by the supervisor. A complete and duly certified log book should be part of the requirement to sit for MS examination. Log book should include adequate number of diagnostic and therapeutic procedures observed and performed the indications for the procedure, any complications and the interpretation of the results, routine and emergency management of patients, case presentations in CPCs, journal club meetings and literature review.

Proposed Format of Log Book is as follows:

Candidate's Name: \_\_\_\_\_

Roll No. \_\_\_\_\_

The above mentioned procedures shall be entered in the log book as per format

**PROCEDURES PERFORMED**

<b>S #</b>	<b>Date</b>	<b>Name of Patient, Age, Sex &amp; Admission No</b>	<b>Diagnosis</b>	<b>Procedure Performed</b>	<b>Supervisor's Signature</b>

**EMERGENCIES HANDLED**

<b>S #</b>	<b>Date</b>	<b>Name of Patient, Age, Sex &amp; Admission No</b>	<b>Diagnosis</b>	<b>Procedure / Management</b>	<b>Supervisor's Signature</b>

**CASE PRESENTED**

<b>S #</b>	<b>Date</b>	<b>Name of Patient, Age, Sex &amp; Admission No</b>	<b>Case Presented</b>	<b>Supervisor's Signature</b>

**SEMINAR / JOURNAL CLUB PRESENTATION**

<b>S #</b>	<b>Date</b>	<b>Topic</b>	<b>Supervisor's Signature</b>

Evaluation Record

(Excellent, Good, Adequate, Inadequate, Poor)

At the end of the rotation, each faculty member will provide an evaluation of the clinical performance of the fellow.

<b>S #</b>	<b>Date</b>	<b>Method of Evaluation (Oral, Practical, Theory)</b>	<b>Rating</b>	<b>Signature</b>

- Log Book will be signed by the supervisor / Co- Supervisor regularly.
- Log Book completion is must before the candidate examination forms are signed.
- Log Book should be used in Practical / Clinical Examination at viva voice table or at TOCS cabin.

**Section -10**

**EVALUATION / EXAMINATION**

**INTERMEDIATE EVALUATION PART-I EXAMINATION.**

**1. Eligibility to appear in Part – I Examination**

- (a) Application by the candidate recommended by the Supervisor.
- (b) Certificate by the Supervisor , counter signed by Dean PGMI that candidate has regularly attended at least 75% of the basic sciences classes, Lectures, Seminars, Practical, demonstrations of Phase-I education.
- (c) Bank Challan Form of Payment of examination fee as fixed by the university of Balochistan.

**2. REGULATIONS.**

- a) All candidates admitted in MS General Surgery course will appear in Part – I examination at the end of 1st Calendar Year.
- b) The candidate who fails to pass the examination in 3 consecutive attempts availed or un-availed, shall be dropped from the course.
- c) The candidates who will not pass this examination within two years after their admission, their name will be removed from the course.
- d) The Part-I Examination will Consist of Paper-I on Basic Sciences Education (relevant to the specialty) and Paper-II on Principles of General Surgery.
- e) For Part-1 Examination the Paper-I and Paper-II will be set from the MCQ bank. The question for MCQ bank will be provided by all the subject specialist involved in teaching the curriculum of the course
- f) Paper Weight age; each paper will carry 100 Marks. Time allowed for each Paper will be three hours.
- g) The Pass Marks will be 60 % in each paper.
- h) Papers will have 100 MCQ Single Best in each paper.

### **3. CONTENTS OF THEORY PAPER PART-I EXAMINATION.**

<b>SUBJECT</b>	<b>COMPONENTS</b>	<b>NO OF QUESTIONS</b>	<b>MARKS</b>
Basic Science Education Paper-I	MCQ's Single Best Type	100	100
Principles of Surgery Paper-II	MCQ's Single Best Type	100	100

### **FINAL EVALUATION: (PART-2 EXAMINATION)**

#### **(a) ELIGIBILITY TO APPEAR IN PART-2 EXAMINATION.**

1. The candidate has completed the prescribed period of training of the course.
2. The candidate has passed the Intermediate Evaluation.(Part-1 Examination).
3. The thesis / dissertation must be dully approved by University of Balochistan.
4. Certificate by the Supervisor that the Log Book of candidate is complete in all aspects and is signed by the Co-Supervisor and the Supervisor. The original Log Book will be presented by the candidate during Practical / Oral examination.
5. A certificate by the Supervisor /Counter signed by Dean PGMI, that the candidate has attended at least 75% of the lectures, seminars, practical/clinical demonstrations;
6. The application form for Part-II examination with recommendation of the Supervisor.
7. The Bank Challan Form for the payment of the Examination Fee of amount as fixed by University of Balochistan.

**(b) COMPONENTS OF THE PART-2 EXAMINATION.**

- 1- Theory (300 Marks)  
2. Clinical / Practical (300 Marks)  
**Total = (600 Marks)**

**(i) CONTENTS OF THEORY PAPERS.**

SUBJECT	CONTENTS	NO OF QUESTIONS	WEIGHTAGE	MARKS
<b>General Surgery</b>	MCQ Paper-A Single Best Type	100	0.75/Per	75
<b>General Surgery</b>	MCQ Paper-B Single Best Type	100	0.75 /Per	75
<b>General Surgery</b>	Short Essay Paper-A	10	0.75/Per	75
<b>General Surgery</b>	Short Essay Paper-B	10	0.75 /Per	75

**Total 300 Marks**

❖ **Candidate must secure 60% in each paper to pass theory examination.**

**(ii) CLINICAL / PRACTICAL EXAMINATION FOR M.S GENERAL SURGERY**

SUBJECT	COMPONENTS	ASSESSMENT TECHNIQUES	MARKS
General Surgery	Long Cases	1	100
	Short Cases	4	100
	TOCS	Specimens, Instruments, Investigation for interpretation including X-ray, MRI, ICT, Nuclear scans, Table Viva on Log book, Table Viva on Thesis / Dissertation, Slides etc.	100 (10 Stations 10 Marks Each station).

❖ **Candidate must obtain 60% in total clinical component and 50% in each component to pass clinical examination.**



**(d) NUMBER OF EXAMINERS.**

The Final Evaluation (Part-2 Examination) will be conducted by a board of four examiners of General Surgery. All examiners have equal functions except the chairman who will be responsible to conduct the examination process and send result to the controller university.

**(e) RESULT.**

The candidates who will Pass their Theory and Clinical / Practical examination separately will be declared pass The Candidates who will Pass in Theory but fail in Clinical / Practical examination will re-appear only in Clinical / Practical examination again for another two times. After total of three attempts in Clinical / Practical examination the candidate will have to appear in all the parts of Theory and Clinical / Practical Part-II examination.

- To pass as ordinary, the candidate must obtain 60% marks in each of 2 components.
- To pass with distinction, the candidate must obtain overall marks should be 80% or above.

## **Section -11**

### **SUPERVISION OF POST GRADUATE STUDENT (TRAINEE MEDICAL OFFICER)**

#### **Purpose:**

To ensure that Trainee Medical Officers / residents are provided adequate and appropriate levels of supervision during the course of the educational training experience and to ensure that patient care continues to be delivered in a safe manner.

#### **Policy and Procedure:**

The Supervisor is responsible for all care delivered by trainees. Trainees shall always be appropriately supervised and the supervision of trainees is ultimately the responsibility of the supervisor, who is accountable to the PGMIQ. PGMIQ shall have a mechanism in place that communicates to the trainees the identity of the Supervisor and back-up coverage by another faculty member in the event that the Supervisor is not immediately available. All program faculty members supervising Trainee Medical Officers / residents must have a faculty or clinical faculty appointment in the Bolan Medical College Department of surgery or be specifically approved as supervisor by the PGMIQ. Faculty schedules will be structured to provide Trainee Medical Officers / residents with continuous supervision and consultation.

Trainee Medical Officers / Residents must be supervised by faculty members in a manner promoting progressively increasing responsibility for each Trainee Medical Officer / resident according to their level of education, ability and experience be provided information addressing the method(s) to access a in a timely and efficient manner at all times while on duty.

The program provides additional information addressing the type and level of supervision for each post-graduate year in the program that is consistent with the PGMI Quetta program requirements and, specifically, for supervision of Trainee Medical Officers / Residents engaged in performing invasive procedures.

1. To provide patients with quality care and Trainee Medical officers/Resident trainee with a meaningful learning experience, a supervising attending physician shall be clearly identified for each patient admitted to, or consulted by, the surgical service. It is the responsibility of the Trainee Medical Officers / Residents trainee to notify an attending physician that a consultation or admission has been initiated on his/her service, based on the call schedule and back-up mechanisms established in the department.
2. The supervising attending physician is ultimately responsible for all recommendations rendered and care delivered by Trainee Medical Officers / Residents trainee, paramedical personnel and other trainees on the surgical service.
3. Supervision shall be readily available to all Trainee Medical Officers / Residents on duty. Each program or service in the department shall maintain a clear call list of attending physicians; with appropriate back up in the event the supervising physician is not immediately available (this typically represents another attending faculty on call that same day). A comprehensive call list of Trainee Medical Officers / Residents and attending physicians is disseminated to all switchboard operators, patient affair coordinators, clinical care areas and all covering Trainee Medical Officers / Residents on a monthly basis.
4. Supervision shall be conducted to ensure that patients receive quality care and Trainee Medical Officers / Residents assume progressively increased responsibility in accordance with their ability and experience, based on curriculum objectives for the respective level of training.
5. Levels of supervision include an attending physician demonstrating a procedure, assisting with the procedure, present physically in the area where intervention is performed, attending available by telephone, senior Trainee Medical Officer / Resident or other supervisor present physically or available by telephone. The attending physician in charge of a respective procedure shall determine the level of supervision for a particular resident and the specific invasive procedure.

6. The responsible attending physician may delegate supervision of more junior residents to a more senior resident as appropriate. These determinations shall be consistent with the individual resident knowledge base and skills, the complexity of the case and procedure, and the residents prior evaluations regarding levels of performance per the residency program core curriculum objectives for each level of training.
7. The Trainee Medical Officers / Residents must request help when the need for assistance is perceived, and responsible attending physicians must respond personally when such help is requested. When a patient's attending physician is not available, a previously designated physician or the attending on call shall assume all coverage responsibilities for the patients.
8. The Senior Trainee Medical Officer / Resident shall relay to the Department Chair or the Supervisor any incident where another Resident did not notify a responsible faculty member, a responsible faculty member was not responsive, or any other breach of supervision as outlined in this policy.

## **Section -12**

### **GRIEVANCES**

The entire faculty is dedicated to Trainee Medical Officer / Resident education and to providing the best possible environment in which to learn. If there are any problems that arise; personal problems, communication issues with team members, complaints about working conditions, the perception or allegation of harassment or abuse etc, the faculty encourages the residents to ask for help. The residents are welcome to contact the Registrar and Dean / Director of PGMIQ.

### **GRIEVANCE POLICY AND PROCEDURE**

Grievances are limited to allegations of wrongful suspension during the training year. The decision to suspend, recommendation to dismiss or termination is an academic responsibility of the Supervisor. If a Trainee Medical Officer / Resident believes he/she has been wrongfully suspended or recommended for dismissal or termination, the grievance process described below can be invoked. The process is intended to protect the rights of the Trainee Medical Officer / Resident and the training program and to ensure fair treatment for both parties.

In all cases of suspension, termination, or non-renewal of contract, it is expected that the appropriate probationary and remedial periods will have been performed.

All "written notification" associated with the formal grievance process shall be by certified mail.

#### **Grievance Procedure**

**1. Notification of intent to appeal:** After receiving the written notification of suspension dismissal or termination, the Trainee Medical Officer / Resident will have 10 calendar days to file, in writing, a formal appeal to the dean PGMIQ. The Trainee Medical Officer / Resident may be represented by an attorney in an advisory capacity, but the attorney may not function as a spokesperson for the Trainee Medical Officer / Resident during this grievance process.

**2. Assembly of Disciplinary committee:** Upon receipt of an appeal, the Dean will refer to disciplinary committee to review the Trainee Medical Officer / Resident case. The committee shall seek advice from PGMI Council who shall be present for the hearing to advise the committee. The disciplinary committee may also seek advice from outside experts in the field of Trainee Medical Officer / Resident specialty if deemed necessary.

The disciplinary committee will include the deputy dean for clinical affairs (or designee), two regular faculty member from a different training program. The deputy dean for clinical affairs will chair the disciplinary committee. The Resident may object to a member of the disciplinary committee for cause. The Dean has sole discretion to replace a member if deemed warranted.

**3. Hearing:** The disciplinary committee will assess the merits of the case and hear evidence and arguments by the Trainee Medical Officer / Resident and the supervisor, or department chair, or division head.

The supervisor, department chair, or division head is obligated to present to the disciplinary committee the reasons for and substantiating evidence of the resident suspended / dismissed or termination. The Trainee Medical Officer / Resident may question witnesses who testify on behalf of the program director, department chair, or division head. The Trainee Medical Officer / Resident may present documents, letters of support and call the testimony of witnesses. These witnesses may be questioned by the supervisor, department chair, or division head.

The disciplinary committee shall tape / record the hearing proceedings, but not its deliberations. Either party may, at its own expense, have a verbatim transcript made of the proceedings. Both parties may request a copy of the tape / recording made by the committee.

**4. Final Determination:** The disciplinary committee will make its determination within 30 days from the close of the hearing. The disciplinary committee will notify the supervisor PGMI, division head, or program director; and the dean in writing of its decision. The decision of the committee to uphold the termination or to reinstate the resident is final. Should the

Trainee Medical Officer / Resident be reinstated, the disciplinary committee may impose an additional period of probation and/or remediation as a condition of continuation.

**Notification Required:**

**1. Reporting required for Resident dismissed, suspended, or required Notice** will be according to the PGMI Policy, any Trainee Medical Officer / Resident “who has not progressed satisfactorily in the program or who has been dismissed from the program for inadequate performance or ethical reasons”. The phrase, “not progressed satisfactorily in the program,” means those residents who have been dismissed, suspended or required to repeat a year of the program.

**2. Probation:** Probation is a remedial mechanism utilized by the PGMI in a variety of circumstances. It is designed to improve the academic performance of a Trainee Medical Officer / Resident. In most instances, Trainee Medical Officers / Residents by supervisor placed on probation continue to progress satisfactorily in a program. Regular reporting of Trainee Medical Officers / Residents placed on probation to the PGMIQ is required.

**3. Referral to Health Department Government of Balochistan.**

If a Trainee Medical Officer / Resident is government employee and is on deputation for his postgraduate studies to PGMIQ. The PGMIQ Directorate will report the final recommendation of disciplinary committee to his parent department e.g. Health Department Government of Balochistan.

**Section -13**

**TRAINING SITE**

**ATTACHED TEACHING HOSPITALS.**

- (i) Bolan Medical Complex Hospital Quetta
- (ii) Sandeman Provincial Hospital Quetta.

**BED STRENGTH.**

**SPH, QUETTA.**

UNIT	MALE	FEMALE	TOTAL
Surgical-I	32	16	48
Surgical-III	32	16	48
Surgical ICU			05
<b>Total</b>			<b>101</b>

**BMCH, QUETTA.**

UNIT	MALE	FEMALE	TOTAL
Surgical-II	30	20	50
Surgical-IV	40	10	50
Surgical ICU			08
<b>Total</b>			<b>108</b>
<b>Grand Total:-</b>			<b>209</b>



## **Section-14**

### **RECOMMENDED BOOKS & JOURNALS**

- ✓ An introduction to the symptoms and signs of surgical disease by Norman Browse
- ✓ Churchill, pocketbook of differential diagnosis By: A. Raftery E. Lim, Edition 2001.
- ✓ Essential of General Surgery, latest edition by Peter Lawrence
- ✓ Essential of Surgical Specialties, latest edition by Peter Lawrence  
Operative Surgery
- ✓ General Surgery. Rob & Smith
- ✓ General Surgery 2nd Ed. Burge DM

#### **SURGICAL ATLASES:**

- ✓ Operative Surgery, Principles and Techniques by Paul Nora.
- ✓ Atlas of General Surgery, 3rd Edition by Carter.
- ✓ Mastery of Surgery by Nyhus and Baker.
- ✓ An Atlas of Surgical Operations by Zollinger and Zollinger.
- ✓ Operative Orthopedics, 7th Edition by Campbell.
- ✓ Vascular Surgery, 4th Edition by Robert Rutherford (2 volumes)
- ✓ Johnson's Surgery of the Chest by Waldhausen and Pierce.

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