

CURRICULUM
FOR
M.S (PAEDIATRICS 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. (Paediatrics Surgery) of the Post Graduate Medical Institute Quetta is presented.

Section -2

ADMISSION CRITERIA

REGULATIONS REGARDING ADMISSION FOR PAEDIATRICS SURGERY COURSE

The requirements for Admission in Post Graduate Degree Programme in MS Paediatrics 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 Paediatrics 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 Paediatrics 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 Paediatrics 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 Paediatrics 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 Paediatrics 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 Paediatrics 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 Paediatrics Surgery is presented as under:

4 YEARS COURSE

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

Section-6

SYLLABUS FOR M.S PAEDIATRICS 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:**

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

- o 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

Syllabus for Phase -1

Basic Science Education M.S (Paediatric Surgery) Course.

Anatomy

- Detailed applied anatomy of:
 - Abdomen and Pelvis (abdominal wall; diaphragm)
 - Thorax (oesophagus; vagus)
 - Genitalia and Perineum
 - Head and Neck (including cranial nerves)
- General anatomy of:
 - Limbs (axilla and femoral triangle)
 - Cranium and Brain
 - Spine and Spinal Cord

- Surgical anatomy of:
 - Adrenal Glands
 - Thyroid
 - Parathyroids
 - Thymus
 - Kidney
 - Liver
 - Extrahepatic bile ducts and Porta Hepatis
 - Breast
 - Cervical lymph nodes
 - Central Venous system
 - Placenta and Umbilical Cord
 - Pelvic Nerve Plexus
 - Enteric Nervous system
- General Histology of:
 - Respiratory system
 - Alimentary system
 - Endocrine system
 - Integument
 - Lymphatic and Reticulo endothelial system
- Growth changes from birth to adolescence

Embryology

- **General Embryology:**
 - Gametogenesis
 - First week of development -
Fertilisation to implantation
 - Second and third weeks of Development -
Bilaminar and Trilaminar discs;
 - Fourth to eighth weeks of development -
Embryonic period
 - Third to tenth months of developments -
Foetal period

- Congenital Malformations and their causes:
- Knowledge of experimental teratology
- **Special Embryology**
 - Digestive tube and its derivatives -
 - Cranial part of the foregut; caudal part of the foregut; midgut; hindgut; liver, spleen; pancreas; pharynx and its derivatives; extrahepatic and biliary ducts Coelomic cavity and mesenteries; Diaphragm; anterior body wall
 - Urogenital system - Urinary system; genital system; ovary and testis; sex determination
 - Respiratory system and great vessels -
 - Trachea and lungs; pulmonary circulation; pericardium; thoracic and abdominal aorta;
 - superior and inferior vena cava
- **Nervous system:**
 - Spinal cord; brain; autonomic nervous system
 - Miscellaneous areas:
 - Anomalies of situs and symmetry; teratoma; conjoined twins.
- **Foetal Medicine:**
 - Prenatal diagnosis
 - Surgical conditions:
 - Management; prognosis; counseling
 - Antenatal in-utero surgical interventions:
 - (Fetal Surgery)
- 1) **Basic concepts and skills for M.S.(Paediatric Surgery) Course.**
 - History of Paediatrics
 - Professional values, student teacher relationship
 - Orientation of OPD, Minor surgical procedures, ward and learning resources

- History taking and case presentation
- Examination with its description

2) Research Methodology and Biostatics

- An understanding of the development of research protocol synopsis.
- The ability to design and execute a research project
- The ability to analyze critically and scientifically articles and review current practice by following appropriate text and journals. Develop the ability to communicate scientifically.
- Develop an understanding and ability to the use of diagnostic techniques and therapeutic measures.

3) List of educational objectives of the Rotations

- Rotation of General Surgery of a student of MS Paediatric Surgery in learning the basic relationship between General Surgery & Paediatric Surgery and better understanding the Historical background and principles of management of surgical diseases and concepts in Adults for a wider understanding particularly with a perspective to be exposed to common conditions in adult population not likely to be encountered in Paediatric surgical practice.
- Rotation to Paediatric Medicine
- The rotation will enable the trainee to be exposed to the principles of management of the medical conditions in neonates and children likely to be encountered in the overall management plan of paediatric surgical patients.

General:

- Wound healing
- Surgical infections and sepsis (including hydatid disease, tetanus, gas gangrene);
- surgical sepsis, principles of antibiotic use in paediatrics
- Shock, as applied to paediatric patients
- Resuscitation and pre- and post-operative care of infants and children of all ages, including general care of the neonate, transport

of the surgical neonate, intravenous requirements, intravenous nutrition, management of respiratory failure

Trauma:

- All aspects, with emphasis on specific problems in the paediatric age group
- Emergency management and transport
- Skeletal injuries, especially of elbow area, femur, nose, pelvis; injury to the immature skeleton
- Soft tissue injuries, including nerve and tendon injuries
- Head injuries; spinal cord injuries
- Thoracic injuries
- Abdominal injuries
- Urinary tract injuries; perineal injuries; renal injuries
- Vascular injuries
- Burns

Ethical Considerations in Paediatric Surgery

- The ethics of surgery in newborn infants selective non-treatment
- Scientific Basis of Paediatric Surgical Practice
- Fetal physiology and pathology
- Post natal maturation of organ function
- Neonatal physiology: metabolism; pathology in relation to surgical conditions-Reactions to stress (surgery; trauma; hypothermia)
- Temperature regulation
- Fluid and electrolyte balance Nutrition
- Physiological disturbance and pathology of those conditions recognised as belonging to Paediatric Surgery

Clinical Component

- Neonatal birth trauma - head, viscera, nerves, limbs
- Prevention of trauma in children
- Non-accidental trauma in children
- Inguino-Scrotal Region:
 - Inguinal hernia Hydrocoele Undescended testis
 - The 'acute' inguino scrotal problem (torsion of testis and appendages, epididymo-orchitis, idiopathic scrotal oedema and infections, trauma)
- Varicocoele
- Genito-Urinary Surgery:
 - Presentation, diagnosis, investigation and treatment of urinary infection
 - Developmental anomalies of kidneys and ureter
 - (including dysplasia and hypoplasia, hydronephrosis, cystic disease, duplex systems, megaureters, ureteric reflux, urtero-coeles; ectopic ureters)
 - Development anomalies of bladder and urethra (including diverticula, posterior urethral valve and other urethral obstructions, urachal anomalies, "Triad" syndrome, hypospadias, epispadias, ectopia vesicae, vesico-intestinal fissure, penile anomalies)
- Urinary features of spinal myelomeningocele
- Urinary calculi
- Urinary incontinence, methods of urinary diversion
- Haematuria
- Circumcision; meatal ulcer and stenosis
- Diseases of female genital tract (including urogenital sinus, mucohaemato/hydro/uro/pyocolpos, gynaecology in adolescence, labial adhesions, vaginal anomalies)
- Intersex
- Neurogenic bladder
- Abdominal Surgery:

- Neonatal alimentary conditions (including malrotation, volvulus, atresia and stenosis, meconium ileus and peritonitis, Hirschprung's disease, meconium plug, gastroschisis, exomphalos, necrotising enterocolitis)
- Congenital ano-rectal anomalies
- Hirschprung's disease, intestinal neuronal dysplasia at all ages
- Appendicitis
- Primary peritonitis
- Intussusception
- Duplications
- Meckel's diverticulum
- Inflammatory bowel diseases (ulcerative colitis and Crohn's disease)
- Pyloric stenosis
- Constipation, large bowel dysmotility disorders, degenerative leiomyopathy)
- Anal and rectal conditions (including abscess, fissure and fistulae, prolapse, polyps)
- Bleeding from the alimentary tract
- Acute abdominal pain
- Recurrent abdominal pain
- Foreign bodies
- Umbilicus (sepsis, hernia, discharges)
- Jaundice, surgery of neonatal and infant biliary system
- Liver and renal transplantation
- Portal hypertension
- Liver cysts and malformations
- Diseases of spleen and indications for splenectomy, complications and contraindications
- Surgery of adrenal glands and retroperitoneum
- Retro-peritoneal cysts and tumours (including mesenteric and omental cysts)
- Head, Neck, Face, Mouth and Jaw Surgery:
- Lymphadenopathy (including pyogenic and tuberculous adenitis, malignancy)

- Lateral and mid-line swellings of the neck (including thyroglossal cyst, thyroid gland, dermoid cysts, branchial sinus and cyst, salivary (sialiectesis, infection, calculi, tumour), cystic hygroma, lymphangioma, ranula)
- Torticollis, sternomastoid tumour
- Face, mouth and jaw (including lymphangioma,
- macroglossia, micronathia, Pierre-Robin
- Syndrome, tongue-tie, maxillary frenulum, mucus cysts, tumours and cysts of maxilla and mandible, adenoids, pre-auricular sinus and tags, tonsils, dermoid cysts)
- Dental infections, cysts and swellings
- Indications and management of tracheostomy
- Thorax, Chest Wall and Oesophageal Surgery:
- Causes of respiratory distress and management of respiratory failure
- Diaphragmatic hernia
- Haemothorax, pneumothorax, chylothorax and empyaemia
- Foreign bodies, oesophyagoscopy, bronchoscopy
- Mediastinal tumours
- Chest wall deformities
- Oesophagus (atresia, caustic ingestion, stricture, achalasia, gastro-oesophageal reflux, hiatus hernia)
- Breast swellings in children
- Palmar hyperhidrosis
- Skin and Subcutaneous Tissues:
- Haemangioma
- Lymphangioma
- Naevi, verrucae and miscellaneous lesions
- Tumours
- General principles of repair of skin defects and lacerations
- Limbs and Spine:
- Causes and investigations of limp
- The acute limb (especially osteomyelitis, septic arthritis)
- Spina Bifida and its varieties

- Meningomyelocoeles
- Hydrocephalus
- Sacral and dermoid sinus
- Sacro-coccygeal tumours Musculoskeletal system
- Detailed knowledge of clinical features, diagnosis and prognosis, but principles only of treatment (especially operative treatment of -
- congenital dislocation of hip, talipes, metatarsus varus, postural deformities, genu varum and valgus, osteochondritis, arthrogyrosis,
- congenital limb deformities, syndactyly, polydactyly, bone cysts
- Principles, indication and techniques of minimal invasive surgery as applied to:
- Thoracoscopic surgery Jung biopsy and surgery, oesophageal
- surgery, pleural surgery
- Abdominal Laparoscopic surgery.

Specific Paediatric Surgery / Allied subjects

A less detailed knowledge, with emphasis on clinical features, diagnosis, prognosis, and principles only of treatment of (especially operative treatment) of the following:

General:

- Principles of immunology, with application in paediatrics
- Principles of radiology and organ imaging diagnosis and techniques.
- Principles of genetics and sexual counselling especially as applied to paediatric conditions, and the handicapped
- Relevant sociological, family and psychological factors in paediatrics, including effects of hospitalization
- Normal and abnormal coagulation of blood
- Principles of micro-surgery Congenital Heart disease

Genito-Urinary Surgery

- Peritoneal and haemodialysis
- Management of renal failure
- Surgery of hypertension

Neurosurgery

- Intracranial infections and haemorrhage
- Cranial bifida, encephalocele
- Dermoid cysts of cranium Craniostenosis
- Surgical complications of meningitis Spinal tumours and cysts

Cardio-Thoracic Surgery

- Cardiac Distress and cyanosis in infants
- Principles of extra and intra-cardiac surgery with special reference to patent ductus arteriosus, coarctation of aorta, stenosis, vascular rings, septal defects, Pallet's tetralogy, transposition of vessels, anomalous pulmonary venous flow. congenital mitral valve deformities
- Principles of lung surgery, with special reference to chest drainage, post-operative lung function, lung cysts, abscesses, agenesis, emphysema, bronchiectasis

Plastic Surgery

- Principles of skin grafting
- Cleft lip and palate Choanal atresia
- Principles of reconstructive surgery of hand, face, ears, lips and jaws

Paediatric Surgical Oncology

- General - paediatric tumours:
- Epidemiology; aetiology; clinical aspects; pathology and principles of diagnosis
- Multidisciplinary Management
- Principles of chemotherapy
- Principles of radiotherapy
- Principles of paediatric oncological surgery
- Common Paediatric Malignant Tumours

- Nephroblastoma; other renal tumours
- Neuroblastoma
- Hepatoblastoma; hepatoma
- Hodgkins and non-Hodgkins lymphoma
- Rhabdomyosarcoma
- Other soft tissue sarcomas
- Malignant bone tumours in children
- Teratoma
- Tumours of the testis and spermatic cord
- Principles of Total Care of the Patient
- Venous access; central catheters and ports The surgical complications of treatment.

KEY TO COMPETENCY LEVELS IN CLINICAL SKILLS:

- | | |
|---------------------------------|---|
| 1. Observer status. | 1 |
| 2. Assistant status. | 2 |
| 3. Performed under supervision. | 3 |
| 4. Performed independently. | 4 |

A candidate is expected to attain the laid down level of competence for the following procedures by the end of each year as given below:

A. General surgical procedures

	Level of competence				Minimum Number
	2 nd Year	3 rd Year	4 th Year		
Excision of Superficial Lump	4	4	4	10	
Biopsy of lymph node	4	4	4	10	
Drainage of deep Seated abscess	3	4	4	10	
polypectomy	3	4	4	10	
Skin grafting	2	3	4	10	
Trauma and fractures	2	3	4	20	
Diseases & malformation of the bones and joints	2	3	4	10	
Performing endoscopic examination					
--- Sigmoidoscopy	2	3	4	10	
--- Cystoscopy				10	
--- Urethroscopy				5	

B. Abdomen

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Gastrostomy	2	3	4	5
Ileostomy & Colostomy	3	4	4	10
Colostomy and closure of colostomy	2	3	4	10
Ramstedt's operation	2	3	4	7
Exploratory laparotomy	2	3	4	10
Bowel resection, anastomosis, by-pass procedure	2	3	4	10
Operative manual reduction for intussusception	2	3	4	5
Appendicectomy	3	4	4	10
Operations of Anus				
- Anoplasty	3	4	4	10
- Pull through	1	2	3	5
Excision mass and fistula of the umbilicus	2	3	4	5
Reduction and fixation of rectal prolapsed	2	3	4	10
Herniotomy / herniorrhaphy	2	3	4	15
Splenectomy	2	3	3	4
Operations of Hirschsprung's disease				
- Rectal biopsy	3	4	4	10
- Pull through	1	2	3	5
Excision of retro peritoneal mass and tumour	2	3	3	5
Repair of omphalocele and gastroschisis	1	2	3	5
Reconstruction of biliary tract				
- Biliary atresia	1	2	3	5
- Choledochal cyst				5
Cholecystectomy	1	2	3	3
Reconstruction of oesophagus	1	2	2	4
Oesophageal dilatation	1	2	3	5
Heller's operation	1	2	3	2

C. Thorax

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Repair of diaphragmatic hernia	2	3	4	5
Repair of Oesophageal Atresia +/-Fistula	1	2	3	5
Intercostal drainage	4	4	4	15
Exploratory thoracotomy and pulmonary resection	1	2	3	5
Excision of mediastinal tumour	1	2	3	3
Colonic interposition / gastric pullup	1	2	3	4

D. Head, neck and face

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Pre-auricular sinus and cyst	2	3	4	2
Cervical lymphadenopathy	3	4	4	10
Cystic hygroma	2	2	3	5
Diseases of thyroid and parathyroid	1	2	2	3
Torticollis	2	3	4	3
Repair of cleft lip and palate	2	3	4	10
Repair of nose and ear deformities	2	2	3	5
Tracheostomy	3	4	4	4

E. Oncology

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Wilms tumor	2	2	3	5
Neuroblastoma	2	2	3	5
Hepatoblastoma	1	2	2	2
Teratomas Abdominal & sacrococcygeal	2	3	3	5
Soft tissue tumors	2	3	4	2
Osteosarcoma	1	2	3	5
Adrenal tumors benign / malignant	1	2	3	2

F. Genitourinary System

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Nephrectomy / nephrostomy / nephrolithotomy	2	3	3	5
Pyeloplasty	2	3	3	3
Cystostomy / cystolithotomy	3	4	4	5
Orchiopexy	2	3	4	10
Circumcision	3	4	4	10
Repair of epispadias	2	3	4	3
Vesicostomy	3	4	4	5
Reimplantation of ureters	1	2	3	2
P.U. Valves	1	2	3	4
Bladder extrophy closure	1	2	2	5
Intersex reconstruction	1	2	2	5
Urinary Diversion and Undiversion	1	2	2	3

G. CNS

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Myelomeningocele	2	3	4	5
Hydrocephalus	1	2	3	5
Head Injury	2	3	3	5

H. Orthopedic

	Level of competence			
	2 nd Year	3 rd Year	4 th Year	Minimum Number
Plastering technique	3	4	4	10
Management of Club Foot	2	3	4	10

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 Paediatrics 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 Paediatrics 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

S #	Date	Name of Patient, Age, Sex & Admission No	Diagnosis	Procedure Performed	Supervisor's Signature

EMERGENCIES HANDLED

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

CASE PRESENTED

S #	Date	Name of Patient, Age, Sex & Admission No	Case Presented	Supervisor's Signature

SEMINAR / JOURNAL CLUB PRESENTATION

S #	Date	Topic	Supervisor's Signature

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.

S #	Date	Method of Evaluation (Oral, Practical, Theory)	Rating	Signature

- 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 Paediatrics 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 Paediatrics 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.

SUBJECT	COMPONENTS	NO OF QUESTIONS	MARKS
Basic Science Education Paper-I	MCQ's Single Best Type	100	100
Principles of Paediatrics 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
Paediatrics Surgery	MCQ Paper-A Single Best Type	100	0.75/Per	75
Paediatrics Surgery	MCQ Paper-B Single Best Type	100	0.75 /Per	75
Paediatrics Surgery	Short Essay Paper-A	10	0.75/Per	75
Paediatrics Surgery	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 PAEDIATRICS SURGERY

SUBJECT	COMPONENTS	ASSESSMENT TECHNIQUES	MARKS
Paediatrics 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 Paediatrics 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.

Bolan Medical Complex Hospital Quetta

BED STRENGTH.

BMCH, QUETTA.

UNIT	MALE	FEMALE	TOTAL
Paediatrics Surgery	10	10	20
Acute Burn Care Unit			10
Post Burn Unit			20

Total 50

Grand Total: - 50

Section-14

RECOMMENDED BOOKS & JOURNALS

Section -15

FACULTY MEMBERS

PROFESSORS.

Prof: Mohammad Iqbal Lashari.

MBBS, M.S.

Prof. Daulat Khan.

MBBS, FCPS.

Prof. Jehangir Ahmed.

MBBS, M.S.

ASSISTANT PROFESSOR.

Dr. Ghulam Nabi

MBBS, MCPS, FCPS

Dr. Tariq Hussain

MBBS, FCPS

Dr. Mohyuddin Kakar

MBBS, FCPS

SENIOR REGISTRAR

Dr. Abdul Rasheed

MBBS, M.S
