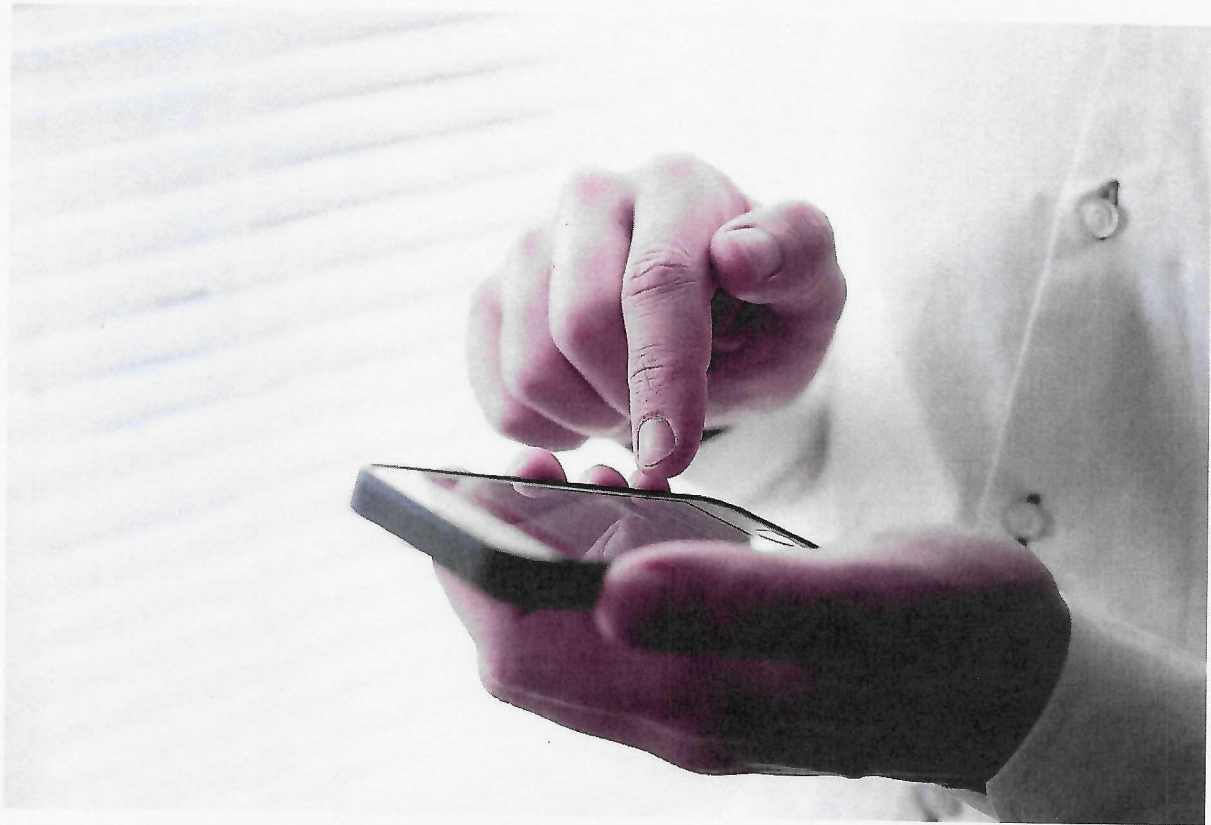


Syllabus for MCh (Paediatric Surgery) Programme



Guru Gobind Singh Indraprastha University

A State University established by the Govt. of NCT of Delhi

University School of Medicine and Allied Health Sciences

① Dr. Rajni Rani, Scientist F, NII. New Delhi
(Immunology)

② Prof. Utham Pathi, Molecular biology, IITD

③ Dr. Shantanu Sengupta, Genet. Scientist F
ICMR, Delhi University Campus

Hon'ble VC

H. C. V.
Dean

PAEDIATRIC SURGERY — M Ch

A. INSTRUCTIONAL GOALS

At the end of the training the candidate should have acquired knowledge, abilities and attitudes to be able to function as a pediatric surgeon in a teaching/non teaching hospital with confidence and competence to diagnose and manage surgical conditions of infancy and childhood. He would also have acquired skills to identify, plan and carry out surgical treatment and the ability to transfer knowledge and skills of his speciality and thus fulfil the function of a teacher.

B. INSTRUCTIONAL OBJECTIVES

At the end of the course the student should have acquired:

- i) A broad understanding of the principles of basic sciences related to Paediatric Surgery.
- ii) Ability and skills to perform and interpret investigative procedures relating to his speciality.
- iii) Skills in the clinical diagnosis and management, with capabilities to take independent decisions in emergency situations, perform major paediatric surgical operation and guide postoperative treatment and manage complications, thereof.
- iv) Competence in intensive care of newborn infants before and after surgery with practical knowledge of working with resuscitative and monitoring equipments.
- v) Ability of self learning critically appraise published literature, interpret data and to broaden his knowledge by keeping abreast with modern developments in Paediatric Surgery.
- vi) Ability to identify, outline and initiate research projects relating to his speciality and draw relevant/pertinent scientific conclusions.
- vii) Ability to search online, use information technology to his advantage, and critically evaluate medical literature and draw own conclusion.
- viii) Ability to impart instructions and transfer knowledge and skills to postgraduates and undergraduate and nursing students in the basic management of surgical diseases of infancy and childhood.

- ix) Necessary knowledge of basic pediatric health care and principles of management of common ailments of childhood.
- x) Keep abreast of Government's latest policies and procedures as related to health care.

C. SYLLABUS

- I. General knowledge of basic medical sciences as applied to Paediatric Surgery:
 - 1.1 Developmental Anatomy and physiology.
 - 1.2 Applied and regional anatomy.
 - 1.3 Physiology as applied to children.
 - 1.4 Neonatal physiology, metabolism and pathology.
 - 1.5 General pathology-with special emphasis on paediatric conditions.
 - 1.6 Pharmacokinetics in paediatric and neonates.
 - 1.7 Biochemical and metabolic considerations related to paediatric surgery.
 - 1.8 Foetal anatomy physiology and pathology.
- II. Growth & Development.
- III. Genetics as applied to surgery: parent counselling.
- IV. Knowledge of common Paediatric medical conditions and their treatment.
- V. Neonatal surgery.
- VI. Etiology and treatment of congenital malformations.
- VII. Organisation of intensive care unit, referral & transfer services.
- VIII. Specialised investigative procedure : technique and interpretation of results.
- IX. Pathology of surgical conditions of childhood and broad knowledge of microscopic appearances.
- X. Systemic and Regional paediatric surgery. Including Paediatric Urology, Plastic Surgery thoracic and neurosurgery etc.
- XI. Paediatric operative surgery.
- XII. Trauma in children-including burns.
- XIII. Malignancy in childhood – knowledge of antineoplastic drugs and radiation therapy.

There are some items common to the teaching of Pediatrics and can be jointly taken up. Similarly rotation through Paediatric, Newborn ICU and genetics should planned.

D. RESEARCH WORK

The candidate should carry out research during the period of training for M Ch. However, the department should see that the work is of a satisfactory quality and completed well in time for the M Ch examination. The research work can be submitted either in dissertation form or a manuscript ready for publication, if not already accepted for publication.

CURRICULUM FOR M Ch COURSE IN PAEDIATRIC SURGERY

The list below is only a guideline and not comprehensive

All candidates admitted to the 3 years and 6 years M Ch course in paediatric surgery should be proficient in the following areas at the end of the training period.

A. Basic Sciences

Ethics

Molecular biology

(relevant to Pediatric Surgery)

Genetics

(relevant to Pediatric Surgery)

Embryology Growth & Development

Fetal medicine

(diagnosis and management of Surgically correctable lesions)

Physiology as applicable to surgery

(including neonatal physiology, Monitoring, acid-base etc.)

Respiratory physiology

(including ventilatory support)

Metabolism and nutrition

(including principles and practice of parenteral nutrition)

Haematology

(including coagulation defects and transfusion medicine)

B. Training of Surgery

B (I). Neonatal Surgery

Special Anatomy and Physiology as applicable to fetus and newborn

- Surgical technique
- Pre and post operative management
- Ventilatory/respiratory care
- Monitoring
- Investigative Procedures

B (II). General Paediatric Surgery

Wound healing

Infections and sepsis

• Organ transplantation

Anesthesia

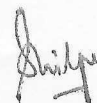
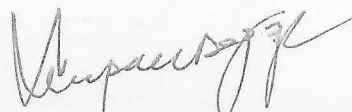

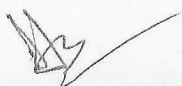
(including pain relief)

Trauma

(including burns)

Head and neck

(excluding ophthalmic and otorhinolaryngologic disorders)



Abdomen

Umbilicus
Abdominal wall
Hernia
Testis
Adrenals

Vascular Malformations

Hemangioma
Lymphangiomas
Peripheral arterio-venous disorders

*Soft Tissue Lesions**Twinnig**Oncology***B (III). Imaging Techniques**

Including ultrasound, conventional and specialized Radiology and nuclear scans MRI (Knowledge of radiation biology).

Gastroesophageal reflux
Meconium ileus
Disorders of rotation and fixation
Intestinal obstruction due to various causes
Short bowel syndrome
GI bleeding
Ascites
Necrotising enterocolitis
Inflammatory bowel disease
Peritonitis, other infections
Stomas
Constipation
Obstructive and hemolytic jaundice

B (IV). Genitourinary Tract

Anatomy and physiology
Congenital anomalies
Kidney

Ureter
Bladder
Urethra
Renal
Bladder

Adrenal

Obstructive uropathy
Vesicoureteral reflux, Megaureter
Urinary tract infections
Urinary lithiasis
Renal vein thrombosis, renovascular hypertension
Urinary diversion and undiversion
Functional disorders of bladder
Hypospadias and epispadias
Other disorders of urethra, penis and scrotum
Ambiguous genitalia
Female genital tract
Endoscopy, laparoscopy
Urodynamic studies

B (V). Gastrointestinal, Pancreatic, Hepatobiliary

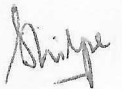
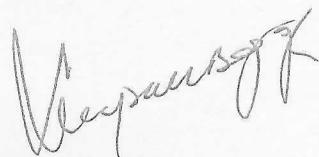
Anatomy and physiology

Congenital anomalies

Esophagus
Stomach
Small bowel
Large bowel
Anorectum
Liver and biliary tree
Pancreas
Spleen

Esophagus

Esophageal burns, strictures, replacement
Esophageal manometry and pH studies
Gastroesophageal reflux



Meconium ileus
Disorders of rotation and fixation
Intestinal obstruction due to various causes
GI Bleeding
Ascites
Necrotising enterocolitis
Short Bowel syndrome
Inflammatory bowel disease
Peritonitis and other infections

Tumors

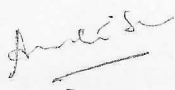
Gastrointestinal
Hepatobiliary
Pancreatic
Portal Hypertension
Anorectal manometry
* Endoscopy and Laparoscopy

B (VI). Thoracic

Anatomy and Physiology
Chest wall deformities
Congenital Malformation
Tumors
Chest wall
Mediastinal
Lungs and pleura
Infection of lung and pleura
Foreign bodies
Airway

Congenital Malformations

Breast
Chest wall
Diaphragm
Mediastinum
Aerodigestive tract
Lungs
Disorders of breast



→ **B (VII). Surgical staplers & Endoscopy**

B (VIII). Plastic Surgery

Principles, anatomy (relevant)
Burn management and sequele
Cleft lip and Palate,
Choanal Atresia
Syndactyly
Skin graft, flap rotation, z-plasty

B (IX). Neurosurgery

Anatomy and physiology of brain, CSF pathways and spine
Hydrocephalus
Cranio-spinal dysraphism and sequele
Craniofacial deformities

B (X). Oncologic Surgery

Physiologic effects mode of actions, synergism of chemotherapy

- Biopsies
- Curative/palliative resections
- Use of CUSA and Argon laser
- Administration of chemotherapeutic agents, monitoring and management of their complications.

C (I). Educational methods/

C (II). Teaching experience

C (III). Research methods

Lectures

Demonstrations

Case discussions

Journal clubs

Seminars

Projects leading to the degree

- Clinical
- Experimental
 - small animal
 - laboratory based

Other projects

Clinical case studies

Epidemiologic studies

Statistical methods

Literature search, critical
Of published

C(IV). Assessment/evaluation of performance

Day to day performance
Academic exercises
work
Outpatient/special clinics
Operation theatre
End term assessments
(at the end of each semester)
Final examination

C (V). Attitudes

- Punctuality
- Behaviour
- Keeness
- Motivation and initiative
- Reliability
- Aptitude for research

Dr. S. C.

Vijay B. G.

Shilpa

Dr. S. C.
Dean

LIST OF BOOKS AND JOURNALS FOR MCh PEDIATRIC SURGERY

JOURNALS

- ① JOURNAL OF PEDIATRIC SURGERY
- ② PEDIATRIC SURGERY INTERNATIONAL
- ③ EUROPEAN JOURNAL OF PEDIATRIC SURGERY,
- ④ SEMINARS IN PEDIATRIC SURGERY.
- ⑤ JOURNAL OF INDIAN ASSOCIATION OF PEDIATRIC SURGEONS.

BOOKS - SUGGESTED READING LIST FOR MCh Pediatric Surgery

- ① TEXT BOOK OF PEDIATRIC SURGERY.
(Principles and Practice.) Eds - J. Grosfeld et al
- ② OPERATIVE SURGERY - (Rob & Smith) - Pediatric Surgery.
- ③ NEONATAL SURGERY - Eds - PP Rickham.
- ④ CLINICAL PEDIATRIC SURGERY Eds - P. Kelalis & L. King.
- ⑤ ORBITHIS - TEXT BOOK OF PEDIATRIC SURGERY.
- ⑥ PEDIATRIC ONCOLOGY - POPLACK + DI ARZIO.
- ⑦ HENDER + ASHCROFTS - TEXT BOOK OF PEDIATRIC SURGERY.
- ⑧ OPERATIVE PEDIATRIC SURGERY - FRANK KIMMEL
- ⑨ EMBRYOLOGY FOR THE SURGEON - SKANDARAKIS + GRANT.
- ⑩ NEONATAL SURGERY - Ed. Dr D.K. GUPTA.
- ⑪ DISEASES OF NEONATE - Ed Prem Puri
- ⑫ ANO RECTAL MALFORMATIONS - Ed SOBIE CHAIKOFF.

Amrinder
11/12/2015

SYLLABUS OF Mch Pediatric surgery divided in three papers as suggested by Dr H.K.Kar, Dean ,
Faculty of Medical Sciences GGSIP University. New Delhi.

Paper1- BASIC SCIENCES-

ETHICS

MOLECULAR BIOLOGY

GENETICS

EMBRYOLOGY, GROWTH AND DEVELOPMENT

FETAL MEDICINE

PHYSIOLOGY AS APPLICABLE TO SURGERY [neonatal physiology, monitoring, acid-base]

RESPIRATORY PHYSIOLOGY [INCLUDING VENTILATORY SUPPORT]

METABOLISM AND NUTRITION [TPN-PRINCIPLES AND PRACTISE]

HEMATOLOGY [COAGULATION DEFECTS AND TRANSFUSION MEDICINE]

SPECIAL ANATOMY AND PHYSIOLOGY AS APPLICABLE TO THE NEONATE]

Paper2- CLINICAL THERAPEUTICS AND TRAINING OF SURGERY

ALL TOPICS LISTED UNDER TRAINING OF SURGERY [except those being covered under recent advances.]

1 NEONATAL SURGERY

2 GENERAL PEDIATRIC SURGERY

3 IMAGING TECHNIQUES

4 GENITO URINARY TRACT

5 GASTROINTESTINAL, PANCREATIC, HEPATOBILIARY.

6 THORACIC

7 PLASTIC SURGERY

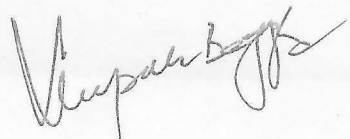
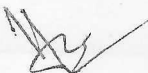
8 NEUROSURGERY

9 ONCOLOGICAL SURGERY.

Paper3- RECENT ADVANCES

ORGANISATION OF INTENSIVE CARE UNIT, REFERRAL AND TRANSFER SERVICES.

SPECIALISED INVESTIGATIVE PROCEDURES: TECHNIQUES AND INTERPRETATION OF RESULTS



ORGAN TRANSPLANTATION

RADIATION BIOLOGY

ENDOSCOPY

LAPAROSCOPY

URODYNAMIC STUDIES

ANORECTAL MANOMETRY

SURGICAL STAPLERS AND ENDOSCOPY

USE OF CUSA AND ARGON LASER IN ONCOLOGICAL SURGERY

THIS IS A DIVISION IN BROAD TERMS OF THE SYLLABUS PAPERWISE, HOWEVER CERTAIN ASPECTS WILL OVERLAP DURING THE PRACTICAL TRAINING AND THIS IS PRIMARILY A GUIDELINE FOR THE THEORITICAL EXAMINATION PAPERS.

Anil Sen

24-4-2013

Venugopal

Shirya

