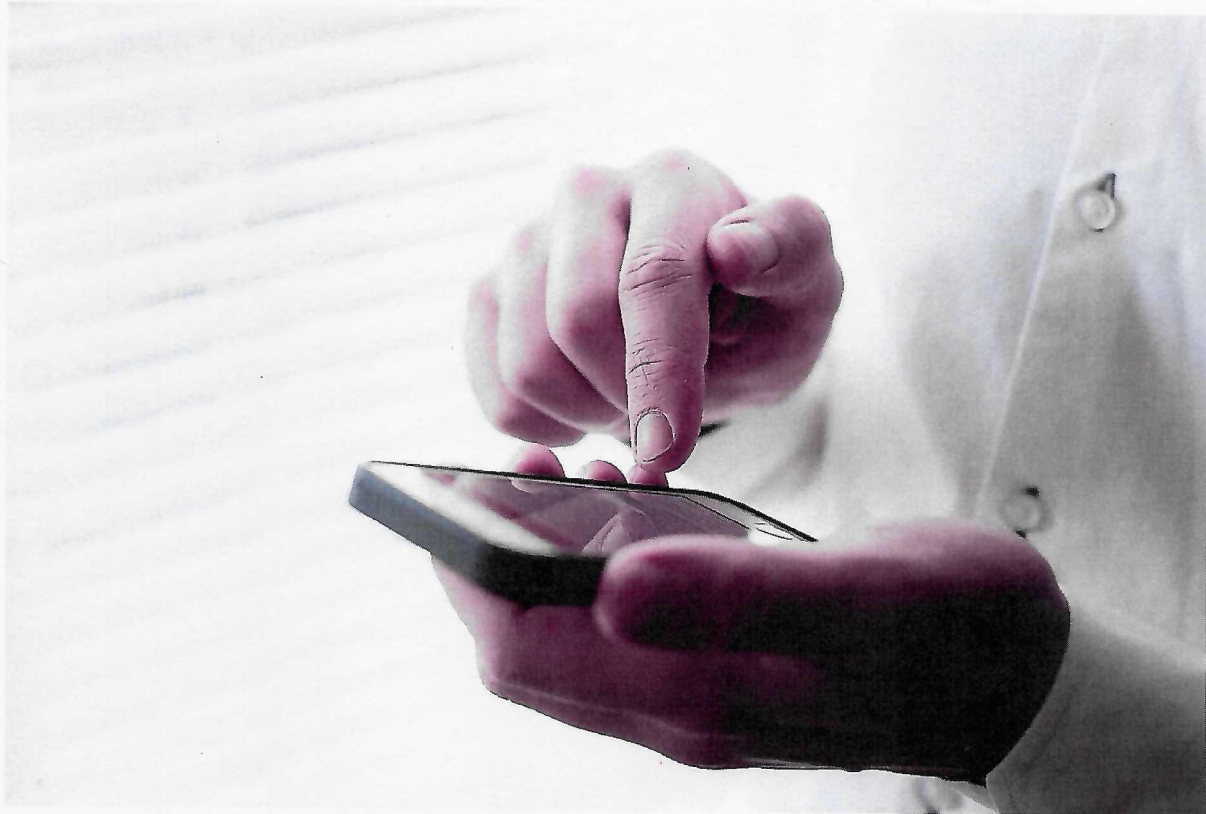


Syllabus for MD (Paediatrics) Programme



Guru Gobind Singh Indraprastha University

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

University School of Medicine and Allied Health Sciences

MD Pediatrics

Programme Objectives

The goal of MD course in Pediatrics is to produce a competent pediatrician who:

- recognizes the health needs of infants, children and adolescents and carries out professional obligations in keeping with principles of National Health Policy and professional ethics
- has acquired the competencies pertaining to pediatrics that are required to be practiced in the community and at all levels of health system
- has acquired skills in effectively communicating with the child, family and the community
- is aware of the contemporary advances and developments in medical sciences as related to child health
- is oriented to principles of research methodology
- has acquired skills in educating medical and paramedical professionals

Specific Learning Objectives

At the end of the MD course in Pediatrics, the student should be able to:-

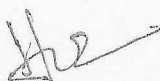
1. Recognize the key importance of child health in the context of the health priority of the country.
2. Practice the specialty of Pediatrics in keeping with the principles of professional ethics.
3. Identify social, economic, environmental, biological and emotional determinants of child and adolescent health, and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to children.
4. Recognize the importance of growth and development as the foundation of Pediatrics; and help each child realize her/his optimal potential in this regard.
5. Take detailed history, perform full physical examination including neurodevelopment and behavioral assessment and anthropometric measurements in the child and make clinical diagnosis.
6. Perform relevant investigative and therapeutic procedures for the pediatric patient.
7. Interpret important imaging and laboratory results.

bm

Ag

8. Diagnose illness in children based on the analysis of history, physical examination and investigate work up.
9. Plan and deliver comprehensive treatment for illness in children using principles of rational drug therapy.
10. Plan and advice measures for the prevention of childhood disease and disability.
11. Plan rehabilitation of children suffering from chronic illness and handicap, and those with special needs.
12. Manage childhood emergencies efficiently.
13. Provide comprehensive care to normal, 'at risk' and sick neonates.
14. Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation.
15. Recognize the emotional and behavioral characteristics of children, and keep these fundamental attributes in focus while dealing with them.
16. Demonstrate empathy and humane approach towards patients and their families and keep their sensibilities in high esteem.
17. Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
18. Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based pediatrics.
19. Demonstrate competence in basic concepts of research methodology and Epidemiology.
20. Facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher-trainer.
21. Play the assigned role in the implementation of National Health Programs, effectively Programs, effectively and responsible.
22. Organize and supervise the desired managerial and leadership skills.
23. Function as a productive member of a team engaged in health care, research and education.

Skills



1. **History & Examination.** History taking including psychosocial history, physical examination including fundus examination, newborn examination, including gestation assessment. Thermal protection of young infants, nutritional anthropometry and its assessment, assessment of growth, use of growth chart, SMR rating, developmental assessment, communication with children, parents, health functionaries, social support groups, family tree and genetic counseling.

2. Bed side Procedure.

- a. Monitoring skills: Temperature recoding, capillary blood sampling, arterial blood sampling.
- b. Therapeutic skills: Hydrotherapy, nasogastric feeding, endotracheal intubation, cardio-pulmonary resuscitation (Pediatric and neonatal), administration of oxygen, venepuncture and establishment of vascular access, administration of fluids, blood, blood components, parenteral nutrition, intraosseous fluid administration, intra-theal administration of drugs. Common dressings and abscess drainage and basic principles of rehabilitation.
- c. Investigative skills: Lumbar puncture, ventricular tap, bone marrow aspiration, pleural, peritoneal, pericardial and subdural tap, Biopsy of liver and kidney. Collection of urine for culture, urethral catheterization, suprapubic aspiration.

3. Diagnostic

- **Bed Side Investigations.** Hemoglobin, TLC, ESR, peripheral smear, staining, examination, urine routine and microscopic examination, stool microscopy, hanging drop, examination of CSF and other body fluids, gram stain, ZN stain, shake stain test on gastric aspirate.
- **Interpretation of** Plain X-ray chest, abdomen, bone, head; ECG, ABG report ct scan.

Understanding of common EEG patterns, audiograms, Ultrasonographic abnormalities and isotope studies.

Postgraduate Teaching Programme

General principles

- Acquisition of practical competencies being the keystone of PG medical education, PG training should be skills oriented.



- Learning in PG program should be essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

Formal teaching sessions

In addition to bedside teaching rounds, at least 5 hours of formal teaching per week are a must. The departments may select a mix of the following sessions.

Journal Club/Medical and perinatal Audit	-	Once a week
Seminar / Lecture	-	Once a week
Case Discussion	-	Twice a week
Interdepartmental case / seminar	-	Once a week

[Cardiology, Pediatrics, Surgery etc.]

Attend accredited scientific meetings (CME, symposia, conference)

Additional sessions of basic sciences, biostatistics, research methodology, teaching methodology, health economics, medical ethics and legal issues related to pediatric practice are suggested.

Note: These sessions may be organized as an institutional activity for all postgraduates.

Rotations

The postgraduate student should rotate through all the clinical units in the department.

In addition, following special rotations should be undertaken:

Must

- Neonatology - 6 months
(including perinatology)
- Intensive care/Emergency - 3 months

Desirable

Posting in Out Patient Services of the following specialities is recommended for the duration indicated below:

- Skin - 12 hours (e.g. 3 hours/day for 4 days or 2 hours/day for 6 days)
- Pediatric Surgery - 24 hours (e.g. 3 hours/day for 8 days)




- Physical Medicine and Rehabilitation - 12 hours (e.g. 3 hours/day for 4 days)
- Community - 24 hours (e.g. 3 hours/day for 8 days)

Note: In addition the candidate may be sent to allied specialties such as cardiology, neurology etc. depending on facilities available locally. It should be ensured that it must conform and focus on contents of curriculum for that area as provided in this document.

Thesis, to be submitted by each candidate at least 6 months before the date of commencement of the theory examination.

PAPER (Theory)

- 1 Basic Sciences as applied to pediatrics
 - 2 Neonatology and Community pediatrics
 - 3 General pediatrics including advances in pediatrics related to Cluster – I Specialities
 - 4 General pediatrics including advances in pediatrics related to Cluster – II Specialities
- ❖ Cluster-I – Nutrition, Growth and development, Immunization, Infectious disease, Genetics, Immunology, Rheumatology Psychiatry and Behavioral Sciences, Skin, Eye, ENT, Adolescent Health,
 - ❖ Cal Care, Accidents and Poisoning.
 - ❖ Cluster-II – Neurology and disabilities, Nephrology, Hematology-oncology, endocrinology, Gastroenterology and Hepatology, Respiratory and cardiovascular disorders.

Practicals.

Case I

- Case II (Newborn)
- Case III
- Case IV (Ambulatory/Emergency care)
- Viva on defined areas by each examiner separately

COURSE CONTENT

Paper I

1. Basic sciences

Chromosomal disorders, single gene disorders, multifactorial disorder/polygenic, genetic diagnosis, and prenatal diagnosis. Embryogenesis of different organ system especially heart, genitourinary system, gastrointestinal tract, applied anatomy of different organs, functions of kidney, liver, lungs, heart and endocrinal glands. Physiology of micturition and defecation, placental physiology, fetal and neonatal circulation, regulation of temperature (esp. newborn), blood pressure, acid base balance, fluid electrolyte balance, calcium metabolism, vitamins and their functions, hematopoiesis, hemostasis, bilirubin metabolism, growth and development at different ages, puberty and its regulation, nutrition, normal requirements of various nutrients, basic immunology, biostatistics, clinical epidemiology, ethical and medico-legal issues, teaching methodology and managerial skills. Pharmacokinetics of commonly used drugs, microbial agents and their epidemiology.

Paper II

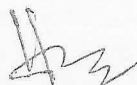
2. Neonatology and Community Paediatrics.

- **Neonatology.** Normal newborn, low birth weight newborn, sick newborn. Perinatal care, normal newborn, care in the labor room and resuscitation, low birth weight, prematurity, newborn feeding, common transient phenomena, respiratory distress, apnea, infections, jaundice, anemia and bleeding disorders, neurologic disorders, gastrointestinal disorders, renal disorders, malformations, thermoregulation and its disorders, understanding of perinatal medicine. Maternal nutritional disorders: impact on fetal outcome, nutrition for the low birth weight, breast feeding, infant feeding including complementary feeding,
- **Community Pediatrics.** National health programs related to child health, nutrition screening of community, prevention of blindness, school health legislation, child labor, adoption disability and rehabilitation, rights of the child, national policy of child health and population, juvenile delinquency, government and non-government support services for children, investigation of adverse events following immunization in a community, general principles of prevention and control of infections including food borne, water, soil borne and vector borne diseases and investigation of an epidemic in a community.

Paper II

3. General Pediatrics including advances in Pediatrics

- **Nutrition.** Protein energy malnutrition (underweight, wasting, stunting) vitamin and mineral deficiencies trace elements and micro nutrient deficiencies obesity. Adolescent nutrition, nutritional management in diarrhea, nutritional management of systemic



illness (celiac disease, hepatobiliary disorders, nephritic syndrome), parenteral and enteral nutrition in neonates and children.

- **Growth and development.** Principles of growth and development, normal growth and development in childhood and adolescence, deviations in growth and development, sexual maturation and its disturbances. Short stature, obesity, precocious & delayed puberty, developmental delay, impaired learning.
- **Infections.** Bacterial, viral, fungal, parasitic, reckettssial, mycoplasma, Pneumocystis carini infections, Chlamydia, protozoal and parasitic, tuberculosis, HIV, nosocomial infections. Control of epidemics and infection prevention.
- **Immunization & Infections diseases:** Bacterial, viral, fungal, parasitic, reckettssial, mycoplasma, Pneumocystis carini infections, Chlamydia, protozoal and parasitic, tuberculosis, HIV, nosocomial infections. Control of epidemics and infection prevention.
- **Behavioral and psychological disorders.** Rumination, pica, enuresis, encopresis, sleep disorders, habit disorders, breath holding spells, anxiety disorders, mood disorders, temper tantrums, attention deficit hyperactivity disorder, infantile autism.
- **Skin diseases.** Exanthematous illnesses vascular lesions, pigment disorders, vesicobullous disorders, infection: pyogenic and fungal and parasitic, Steven-Johnson syndrome, eczema, seborrhea dermatitis, drug rash, urticaria, alopecia, ichthyosis.
- **Eye problems.** Refraction & accommodation, partial/total loss of vision, cataract, night blindness, chorioretinitis, strabismus, conjunctival & corneal disorders, ROP, retinoblastoma, optic atrophy, papilloedema.
- **ENT.** Acute and chronic otitis media, conductive/sensorineural hearing loss, diphtheria – tonsillar, nasal, post-diphtheritic palatal palsy, acute/chronic tonsillitis/adenoids, allergic rhinitis/sinusitis.
- **Emergency and critical care.** Emergency care of shock, cardiorespiratory arrest, respiratory failure, congestive cardiac failure, acute renal failure, status epilepticus, fluid and electrolyte disturbances and its therapy, acidbase disturbances, poisoning, accidents, scorpion & snake bites.
- Accidents and Common Poisoning.

Paper IV

4. General Pediatrics including Recent Advances:

- **Neurology.** Limping child, convulsions, abnormality of gait, intracranial space or occupying lesion, paraplegia, quadriplegia, large head, small head, floppy infant, acute flaccid paralysis, cerebral palsy and other neuromotor disability, headache.



- **Hematology & Oncology.** Deficiency anemia, hemolytic anemia, aplastic anemia/pancytopenia, disorders of hemostasis, thrombocytopenia, blood component therapy, transfusion related infections, bone marrow transplant/stem cell transplant, acute and chronic leukemia, myelodysplastic syndrome, Hodgkin disease, non-Hodgkin's lymphoma, neuroblastoma, Wilms tumor, hypercoagulable states.
- **GIT and Liver.** Acute, persistent and chronic diarrhea. Abdominal pain and distension, ascitis, vomiting, constipation, gastrointestinal bleeding, jaundice, hepato-splenomegaly and chronic liver disease, hepatic failure and encephalopathy.
- **Endocrinology.** Hypopituitarism/hyperpituitarism, Diabetes insipidus, pubertal disorders, hypo- and hyperthyroidism, hypo- and hyperparathyroidism, adrenal insufficiency, Cushing's syndrome, adrenogenital syndromes, diabetes mellitus, short stature, failure to thrive, gonadal dysfunction and intersexuality, pubertal changes and gynecological disorders.
- **Gastrointestinal and liver diseases.** Diseases of mouth, oral cavity and tongue, Disorders of deglutition and esophagus, peptic ulcer disease, H. pylori infection, foreign body, congenital pyloric stenosis, intestinal obstruction, malabsorption syndrome, acute and chronic diarrhea, Irritable bowel syndrome, ulcerative colitis, Hirschsprung disease, anorectal malformations. Liver disorders: hepatitis, hepatic failure, chronic liver disease, Wilson's disease, Budd-Chiari syndrome, metabolic diseases of liver, cirrhosis, and portal hypertension.
- **Cardiovascular.** Murmur, cyanosis, congestive heart failure, systemic hypertension, arrhythmia, shock.
- **Respiratory.** Cough/chronic cough, noisy breathing, wheezy child, respiratory distress, hemoptysis.
- **Miscellaneous.** Habit disorders, hyperactivity and attention deficit syndrome, arthralgia, arthritis, multiple congenital anomalies.

ju

43