

**MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH**  
(Deemed To Be University U/S 3 OF UGC ACT, 1956)  
12, Vembullamman Koil Street, West K.K. Nagar, Chennai – 600 078

**MEENAKSHI MEDICAL COLLEGE HOSPITAL AND RESEARCH INSTITUTE,**  
**ENATHUR, KANCHIPURAM**



**DOCTOR OF MEDICINE IN PAEDIATRICS –M.D (PAED)**  
**FACULTY OF MEDICINE**  
**REGULATIONS AND SYLLABUS (REGULATIONS – 2019)**  
**Effective from the Academic Year 2019-2020**




*M. D. D.*  
**MOD-PAEDIATRICS DEPARTMENT**  
**MEENAKSHI MEDICAL COLLEGE HOSPITAL**  
**RESEARCH INSTITUTE**  
**ENATHUR, KANCHIPURAM-631009**

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MEENAKSHI MEDICAL COLLEGE HOSPITAL AND RESEARCH

INSTITUTE

MD PAEDIATRICS

REGULATIONS -2019

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

PEO 1	Recognizes the health needs of infants, children and adolescents and carries out professional obligations in keeping with principles of the National Health Policy and professional ethics
PEO 2	Should be able to teach Paediatrics to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.
PEO 3	Carry out research, systematically write a paper and publish in a journal, Able to present a paper in a conference through an oral presentation and poster presentation.
PEO 4	Should be able to function as a part of a team, provide leadership and inspire members of the team
PEO 5	Always adopt ethical principles and develop communication skills
PEO 6	Should be aware of contemporary advances and developments in medical sciences as related to child health

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PROGRAM OUTCOMES (PO's)

**PO 1: Acquisition of knowledge:** The student will be able to explain clearly concepts and principles of paediatrics and neonatology. The student will also be able to explain the disease evolution and management protocols at each stage. She/he will be able to assist and perform clinical and OPD procedures.

**PO 2 Teaching and training:** The student will be able to effectively teach postgraduate students in medicine so that they become competent healthcare professionals and able to contribute to training of postgraduate trainees.

**PO 3 Research:** The student will be able to carry out a research project (both basic and clinical) from planning to publication and be able to pursue academic interests and continue life-long learning to become more experienced in all the above areas and eventually be able to guide postgraduates in their thesis work.

**PO 4 Critical thinking skill:** The student will be able to evaluate and manage the difficult situational cases and become competent in early management of such cases. They will be able to co-ordinate with super-speciality consultants and follow protocols based on the cases

**PO 5 Technical skill:** The student will be able to assist and perform day-care, minor, major and emergency (Diagnostic & therapeutic) procedures individually as well as under the supervision of senior faculty.

**PO 6 Professional skill:** Recognize conditions that may be outside the area of his specialty/competence and refer them to the proper specialist

#### **VI. PROGRAM SPECIFIC OUTCOMES (PSO's)**

**PSO1:** Perform daily Outpatient services including history taking, clinical examination and perform basic vaccinations and management of AEFIs

**PSO2:** Ability to perform intensive care procedures (independently/or as assistant) in Paediatric emergency room, Pediatric Intensive Care Unit (PICU), Neonatal Intensive Care Unit (NICU)

**PSO3:** Ability to perform Neonatal Resuscitation as per latest WHO NRP Golden Minute Strategy

**PSO4:** Participate in community outreach activities like camps, school screening and public education.

**PSO5:** Present academic papers in State/National conference. To do thesis work in the field of Paediatrics and Neonatology under guidance of senior faculty. Teach junior post graduates & undergraduates.

**PSO6:** To participate in department research and academic activities and clinical audit.

# TRAINING PROGRAMME FOR MD IN PAEDIATRICS

## Introduction

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training.

A post graduate student after undergoing the required training should be able to deal effectively with the needs of the community and should be competent to handle the problems related to his specialty including recent advances. He/She should also acquire skills in teaching of medical/para- medical students.

## SUBJECT SPECIFIC OBJECTIVES

The objectives of MD Course in Paediatrics are 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 the National Health Policy and professional ethics
- Has acquired the competencies pertaining to Paediatrics 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 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
- Is able to recognize mental conditions and collaborate with Psychiatrists/Child Psychologists for the treatment of such patients



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A.

**Cognitive domain**

**At the end of the MD course in Paediatrics, the students should be able to:**

1. Recognize the key importance of child health in the context of the health priority of country
2. Practice the specialty of Paediatrics 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 Paediatrics and help each child realize her/his optimal potential in this regard
5. Take detailed history; perform full physical examination including neuro-development and behavioral assessment and anthropometric measurements in the child and make clinical diagnosis
6. Perform relevant investigative and therapeutic procedures for the paediatric patient
7. Interpret important imaging and laboratory results
8. Diagnose illness based on the analysis of history, physical examination and investigations
9. Plan and deliver comprehensive treatment for illness using principles of rational drug therapy
10. Plan and advice measures for the prevention of childhood disease and disability
11. Plan rehabilitation of children with 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 published literature in order to practice evidence-based Paediatrics
19. Demonstrate competence in basic concepts of research methodology and epidemiology

Facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher-trainer

21. Implement National Health Programs, effectively and responsibly
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.
24. Recognize mental conditions, characterized by self absorption, reduced ability to respond, abnormal functioning in social interaction with or without repetitive behavior, poor communication (autism) and collaborate with Psychiatrists/Child Psychologists for the treatment of such patients.

All PG students joining the course should have an orientation session to acquaint them with the requirements and other details. A plan for orientation session has been given at Annexure 1.

#### B. Affective Domain

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.


#### C. Psychomotor domain

At the end of the course, the student should have acquired following skills:

##### I. History and Examination

The student must gain proficiency in eliciting, processing and systemically presenting Paediatrics history and examination with due emphasis of the important and minimization of less important facts. The following skills must be achieved:

- i) Recognition and demonstration of physical findings
- ii) Recording of height, weight, head circumference and mid arm circumference and interpretation of these parameters using growth reference standard assessment of nutritional status and growth
- iii) Assessment of pubertal growth
- iv) Complete development assessment by history and physical examination, and recognizing developmental disabilities, including autism
- v) Systematic examination
- vi) Neonatal examination including gestation assessment by physical neurological criteria

  
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- vii) Examination of the fundus and the ear-drum
- viii) Skills related to IMNCI and IYCF

**II. Monitoring Skills**

Non-invasive monitoring of blood pressure, pulse and respiratory rates, saturation; ECG

**III. Investigative Procedures**

- i) Venous, capillary and arterial blood sampling using appropriate precautions
- ii) Pleural, peritoneal, pericardial aspiration; subdural, ventricular and lumbar puncture
- iii) Tuberculin test
- iv) Biopsy of liver and kidney
- v) Urethral catheterization and suprapubic tap
- vi) Gastric content aspiration

**IV. Therapeutic Skills**


- i) Breast feeding assessment and counseling; management of common problems
- ii) Establishment of central and peripheral vascular access; CVP monitoring
- iii) Administration of injections using safe injection practices
- iv) Determination of volume and composition of intravenous fluids and their administration
- v) Neonatal and Pediatric basic and advanced life support
- vi) Oxygen administration, CPAP and nebulization therapy
- vii) Blood and blood component therapy
- viii) Intraosseous fluid administration
- ix) Phototherapy, umbilical artery and venous catheterization and exchange transfusion
- x) Nasogastric feeding
- xi) Common dressings and abscess drainage; intercostal tube insertion
- xii) Basic principles of rehabilitation
- xiii) Peritoneal dialysis
- xiv) Mechanical ventilation

**V. Bed side investigations, including**

- i) Complete blood counts, micro ESR, peripheral smear
- ii) Urinalysis
- iii) Stool microscopy and hanging drop
- iv) Examination of CSF and other body fluids
- v) Blood sugar
- vi) Shake test on gastric aspirate
- vii) Gram stain, ZN stain

**VI. Patient Management Skills**

- i) Proficiency in management of pediatric emergencies, including emergency

  
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triaging

- ii) Drawing and executing patient management plan and long term care
- iii) Documenting patient records on day to day basis and problem oriented medical record
- iv) Care of a normal and sick newborn, management of neonatal disorders hypothermia, sepsis, convulsions, jaundice, metabolic problems
- v) Identifying need for timely referral to appropriate departments/health facility and pre-transport stabilization of the sick child

## VII. **Communication Skills; Attitudes; Professionalism**

- i) Communicating with parents/child about nature of illness and management plan prognostication, breaking bad news
- ii) Counseling parents on breast feeding, nutrition, immunization, disease prevention, promoting healthy lifestyle
- iii) Genetic counseling
- iv) Communication and relationship with colleagues, nurses and paramedical workers
- v) Appropriate relation with pharmaceutical industry
- vi) Health economics
- vii) Professional and research ethics

## VIII. **Interpretation of Investigations**

- i. Plan x-ray chest, abdomen, skeletal system
- ii. Contrast radiological studies: Barium swallow, barium meal, barium enema, MCU
- iii. Ultrasound skull and abdomen
- iv. Histopathological, biochemical and microbiological investigations
- v. CT Scan and MRI (skull, abdomen, chest)
- vi. Electrocardiogram, electroencephalogram
- vii. Arterial and venous blood gases
- viii. **Desirable:** Interpretation of radio-isotope studies, audiogram, neurophysiological studies, (BERA, VER, Electromyography [EMG], Nerve Conduction Velocity [NCV]), lung function tests

## IX. **Academic Skills**

- i. **Familiarity with basic research methodology**, basic IT skills. Planning the protocol of the thesis, its execution and final report
- ii. **Review of literature**
- iii. Conducting clinical sessions for undergraduates medical students
- iv. **Desirable:** writing and presenting a paper. Teaching sessions for nurses and medical workers

### *Syllabus*

#### Course contents:

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**SCHEME OF EXAMINATION**  
**M.D.PAEDIATRICS**

**PART - I**

**DISTRIBUTION OF MARKS**

	Theory		Duration in Hours
Paper – I (At the end of one year)	Maximum Marks		3
100	Applied Basic Science		

Model Question Paper:

Short Notes:

Anatomy	3	each 5 marks =	15
Physiology	3	each 5 marks =	15
Biochemistry	3	each 5 marks =	15
Pharmacology	3	each 5 marks =	15
Pathology	3	each 5 marks =	15
Microbiology	3	each 5 marks =	15
Biostatistic & Research Methodology	2	each 5 marks =	10
	Total		100

The applied Basic Science paper will be evaluated separately and marks qualifying for a pass shall be 50% of the total prescribed (50 100)

**PART - II (At the end of the III year)**

Theory	Title	Duration in hours	Maximum marks
Paper I	Clinical Paediatrics	3	100
Paper II	Neonatology, Development Paediatrics		
	Preventive and social paediatrics	3	100
Paper III	Specialties of paediatrics Medicine	3	100


no. of cases	Duration	Marks
Long One	1 hour	80
Short Three	45 min	120
	Total	<u>200</u>

**Practicals:**

Slides / Specimens / X rays	5X5	25
(2) (1) (2)		
Orals		75
	Total	<u>100</u>

50% of the marks in the University theory examination : 150/300  
 50% of the marks the University clinical examination : 100/200  
 50% aggregate in the theory/clinical practical/Oral  
 dissertation : 300/600

Maximum number of candidate to be examined per day : 8

  
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