D.Y. PATIL EDUCATION SOCIETY
[Deemed to be University], Kolhapur
Re-accredited by NAAC with 'A' Grade

D. Y. PATIL MEDICAL COLLEGE KOLHAPUR

Syllabus For

NATIONAL MEDICAL COMMISSION
Postgraduate Medical Education Board

GUIDELINES FOR COMPETENCY BASED
POSTGRADUATE TRAINING PROGRAMME FOR

MD IN PAEDIATRICS

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Year of Implementation : 2022-23
Year of Examination : 2025-26

MD-PAEDIATRICS

Vision

To be a centre of excellence for training and quality research in the field of paediatrics and child health.

Mission

To develop high quality undergraduates and post graduates to cope up with present and future needs of the country in the field of pediatric and child health, using modern information technology and human resource development innovations.

Goal

The broad goal of the teaching of UG students in Pediatrics is to acquire adequate knowledge and appropriate skills for optimally dealing with major health problems of children to ensure their optimal growth and development.

To enable pediatric residents to develop the knowledge, skills and attitude needed to effectively diagnose and manage common-newborn, pediatric and adolescent problems in community and hospital set up.

Objectives

1. Provide high quality training in paediatrics and child health.
2. Espouse and impact the virtues of professional ethics and moral Standards in training research and practice.
3. Promote evidence based health care provision.
4. Promote creative and inventive research for the benefit of mankind.
5. Nurture responsible professionalism through a culture of mentorship

Preamble

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. S/He should also acquire skills in teaching of medical/para - medical students.

The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by various subject-content specialists.

The Reconciliation Board of the Academic Committee has attempted to render uniformity without compromise to purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies".

Programme Outcomes

Graduate Attributes: Medical and Scientific Knowledge.

PO 1 :

- Demonstrate knowledge of normal and abnormal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- Demonstrate knowledge about established and evolving biomedical and clinical sciences.
  Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety

2.Graduate Attributes: Planning Patient Care and problem solving abilities

PO 2:

- Demonstrate ability to apply this knowledge to the practice of medicine in routine, emergency and disaster situations.
- Demonstrate ability to appraise and assimilate scientific evidence into their own ongoing learning, research, and patient care.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context
- Demonstrate ability to provide evidence-based care that is compassionate, respectful of patients' differences, values, and preferences.

3. Graduate Attributes: Professional excellence & Ethics

PO 3:

- Demonstrate commitment to the highest standards of professional responsibility towards patient, colleagues, society, growth of medical professional and adhere to universally accepted code of ethics.
- Demonstrate personal attributes of compassion, honesty, integrity, accountability, empathy in patient encounters.

4. Graduate Attributes: Communication Skills.

PO 4:

- Demonstrate ability to communicate effectively, respectfully, non-judgemental, empathetic manner with patients, their families and colleagues that will improve patient satisfaction ,health care and encourages participation and shared decision-making.
- Demonstrate the ability to listen clearly, inform, communicate and educate patients &/ caregivers for the promotion of health, diagnosis of disease and the treatment of illness; advocate for disease prevention, wellness and the promotion of healthy lifestyles including a focus on population health

5. Graduate attributes: Leader & Member of the health care team & System

PO 5:

- Demonstrate the ability to work effectively, efficiently & in rational way with his/ her colleagues and other team members, educate & motivate the team members in a manner to maximize the health delivery potential of the team, considering various roles, responsibilities and competencies of the other health professionals.
- Identify the self- potential, functioning ability as a team leader in primary and secondary health care settings, utilize various indicators of the health care system and to promote appropriate, low cost, ethical, fair and qualitative health delivery.

6. Graduate attributes: Life long learner

PO 6:

- Demonstrate ability to acquire new knowledge, skills and reflect upon their experience to enhance personal and professional growth and apply the information in the care of the patient.
- Demonstrate self-motivation and awareness to their own limitations.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

7. Graduate attributes: Research Aptitude

PO7:

- Demonstrate an attitude of inquiry/search/investigation ,scientific and objective effort to uncover facts**.**

8. Graduate attributes: Societal Responsibilities

PO8 :

- Demonstrate accountability in fulfilling their duty for the benefit of the entire society.

9. Graduate attributes: Awareness towards Environment and sustainability

PO9 :

- Demonstrates responsibility to conserve natural resources and protect global ecosystems to support health and wellbeing, now and in the future.

Course Outcome

CO1: To learn the normal growth and development during fetal life, neonatal period, childhood andadolescence and identify deviations there of; state age related requirements of calories, nutrients,fluids, drugs etc. in health and disease.

CO2: To identify and manage the common pediatric emergencies and systemic diseases in children in termsof epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy, holistic careincluding counseling the parents and child rehabilitation.

CO3: To know preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents, child abuse, protection and rights of children. Outline national programs related to child health including immunization program.

CO4: Able to take detailed pediatric history, conduct an appropriate physical examination ofchildren including neonates, make clinical diagnosis, conduct common bedside and invasive investigative procedures, interpret laboratory investigation results including genetic test, plan and
institute therapy.

CO5: Able to take anthropometric measurements, interpret results. Resuscitate newborn infantsat Birth (basic and advanced), knows how to prepare oral rehydration solution, and perform
tuberculin test, nasogastric feeding, IV cannulation, administer vaccines, knows and shows how toperform lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap, ascitic tap,ventricular tap, peritoneal dialysis, pediatric ventillation.

CO6: Normal newborn baby care and neonatal intensive care including care of sick term, preterm andlow birth weight babies, provide correct guidance and support to parents and provide counseling inNICU. Perform procedures like IV line, oxygen therapy, phototherapy, ICD insertion, PICC line,exchange transfusion, umbilical catheterization, surfactant administration and ventilation.

CO7: To describe and discuss social aspects of pediatrics, preventive, primitive, curative and rehabilitativeservices to children, and keep him updated with recent developments regarding same.

CO8: To update knowledge regarding recent advances and newer techniques in the management ofpatients.

CO9: To participate regularly in departmental academic activities by presenting seminars, case discussions,journal club and topic discussion on weekly basis and maintain logbook

CO10: To know the basic concept of research methodology, plan a research project and knowhow toconsult library.

CO11: To demonstrate and practice procedural skills in simulated environment.

CO12: To show integrity accountability, respect, compassion and dedication in patient-care anddemonstrate a commitment to excellence and continuous professional development.

CO13: To demonstrate sensitivity and responsiveness to patients culture, age gender and disabilitiesand show commitment to ethical principles related to providing patient care and confidentiality of patient information.

PROGRAM SPECIFIC OUTCOMES FOR PAEDIATRICS

1. Describe aetoiology, pathophysiology, principles of diagnosis and management of common pediatric problems including emergencies.
2. Demonstrate the theoretical knowledge to choose, and interpret appropriate diagnostic and therapeutic imaging including ultrasound, X-ray CT scan, MRI, C
3. Arrive at a logical working diagnosis/ differential diagnosis after clinical examination
4. Perform bedside and emergency procedures independently in children and neonates.

SUBJECT SPECIFIC OBJECTIVES

The objectives of MD Course in Paediatrics are to produce a competent paediatrician 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 Pediatrics that are required to be practiced it he community and at all levels of health system
- Has acquired skills ineffectively 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

SUBJECT SPECIFIC COMPETENCIES

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 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 neuro-development and behavioral assessment and anthropometric measurements in the child and make clinical diagnosis.
6. Performrelevantinvestigativeandtherapeuticproceduresforthepediatricpatient.
7. Inter prêt 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 to wards 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 counselling 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 Pediatrics.
19. Demonstrate competence in basic concepts of research methodology and epidemiology.
20. Facilitate learning of medical /nursing students ,practicing physicians , para medical 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 Annexure1.

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

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

ii. Recognition and demonstration of physical findings

iii. 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.

iv. Assessment of pubertal growth

v. Complete development assessment by history and physical examination ,and recognizing development

vi. disabilities, including autism

vii. Systematic examination

viii. Neonatal examination including gestation assessment by physical neurological criteria

ix. Examination of the fund us and the ear-drum

x. Skills related to IMNCI and IYCF

I. Monitoring Skills

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

II. 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

III. 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 heir administration.

v. Neonatal and Pediatric basic and advanced life support

vi. Oxygen administration, CP AP 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; intercostals tube insertion

xii. Basic principles of rehabilitation

xiii. Peritoneal dialysis

xiv. Mechanical ventilation

IV. 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

V. Patient Management Skills

i. Proficiency in management of pediatric emergencies, including emergency 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 normal & sick newborn management of neonatal disorders
v. Hypothermia, sepsis, convulsions, jaundice, metabolic problems.
vi. Identifying need for timely referral appropriate departments/health facility and
vii. Pre-transport stabilization of the sick child.

VI. Communication Skills; Attitudes; Professionalism

i. Communicating with parents /child about nature fellness 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.

VII. Interpretation of Investigations

i. Plan x-ray chest ,abdomen, skeletal system
ii. Contrast radiological studies: Barium swallow, barium meal ,barium enema ,MCU
iii. Ultra sound 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, neuro -physiological 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. Conducing clinical session for undergraduate's medical students.

iv. Desirable writing and presenting a paper. teaching sessions for nurse & medical students.

Syllabus

Course contents: **Guidelines**

During the training period, effort must be made that adequate time is spent in discussing child health problems of public health importance in the country or particular region.

Basic Sciences

- Principles of inheritance, chromosomal disorders, single gene disorders, multi factorial /polygenic disorders, genetic diagnosis and prenatal diagnosis, pedigree drawing.
- Embryogenesis of different organ systems especially heart, genitourinary system, gastro-intestinal tract .Applied anatomy and functions of different organ systems.
- Physiology of maturation and defecation; placental physiology; fetal and neonatal circulation ;regulation of temperature ,blood pressure ,acid base balance ,fluid electrolyte balance and calcium metabolism.
- Vitamins and their functions.
- Hematopoiesis, hemostasis, bilirubin metabolism.
- Growth and development at different ages, growth charts; puberty and its regulation.
- Nutrition: requirements and sources of various nutrients.
- Pharmacokinetics of common drugs, microbial agents and their epidemiology.
- Basic immunology ,biostatistics ,clinical epidemiology, ethical and medico-legal issues.
- Teaching methodology and managerial skills.

Understanding the definition, epidemiology, aetiopathogenesis, presentation, complications, differential diagnosis and treatment of the following, but not limited to:
Growth and development

- Principles of growth and development
- normal growth and development
- normal growth and development,
- sexual maturation and its disturbances
- failure to thrive and short stature
- Autism(as mentionedinobjective24)

Neonatology

- perinatal care
- low birth weight
- care in the labor room and resuscitation
- new born feeding

- prematurity

  respiratory distress
- common transient phenomena
- apnea
- infections
- anemia and bleeding disorders
- jaundice
- gastrointestinal disorders
- neurologic disorders
- malformations
- renal disorders
- understanding of perinatal medicine
- thermoregulation and its disorders

Nutrition

- maternal nutritional disorders;
- nutrition for the low birth weight
- impact on fetal outcome
- breastfeeding
- infant feeding including
- vitamin and mineral deficiencies complementary feeding
- protein energy malnutrition
- obesity
- adolescent nutrition
- parenteral and enteral nutrition
- nutritional management of systemic illness(GI ,hepatic, renal illness)

Cardiovascular

- congenital heart diseases (cyanotic and acyanotic)
- rheumatic fever and rheumatic heart disease
- infective endocarditis
- arrhythmia
- disease of myocardium
- diseases of pericardium (cardiomyopathy, myocarditis)
- systemic hypertension
- hyperlipidemia in children

Respiratory

- congenital and acquired disorders of nose
- infections of upper respiratory tract tonsils and adenoids
- obstructive sleep apnea
- congenital anomalies of lower respiratory tract
- acute upper air way obstruction
- foreign body in larynx trachea and bronchus
- trauma to larynx
- subglottic stenosis (acute, chronic)
- neoplasm of larynx and trachea
- bronchial asthma
- bronchiolitis
- acute pneumonia, bronchiolitis
- aspiration pneumonia, GER
- recurrent ,interstitial pneumonia
- suppurative lung disease
- atelectasis
- lung cysts, mediastinal mass
- pleural effusion

Gastro in testinal and liver disease.

- disease of oral cavity
- disorders of deglutition and esophagus
- peptic ulcer disease
- congenital pyloric stenosis
- intestinal obstruction
- acute and chronic pancreatic
- disorders
- malabsorption syndrome
- acute and chronic diarrhea
- irritable bowel syndrome
- inflammatory bowel disease
- Hirschsprung disease
- anorectal malformations
- hepatitis
- hepatic failure
- chronic liver disease
- Budd- Chiari syndrome
- metabolic diseases of liver
- cirrhosis and portal hypertension

Nephrologic and Urologic disorders

- acute and chronic glomerulonephritis
- xanthema syndrome
- hemolytic uremic syndrome
- urinary tract infection
- VUR and renal scarring
- involvement in systemic diseases
- Renal tubular disorders
- neurogenic bladder, voiding

- dysfunction
- congenital and hereditary renal disorders
- renal and bladder stones
- posterior urethral valves
- hydronephrosis
- undescended testis ,hernia, hydrocoele
- Wilms tumor

Neurologic disorders

- seizure and non-seizure paroxysmal events
- epilepsy ,epileptic syndromes
- meningitis ,encephalitis
- brain abscess
- febrile encephalopathies
- Guillain- Barre syndrome
- neurocysticercosis and other neuro infestations
- HIV encephalopathy
- SSPE
- cerebral palsy
- Neurometabolic disorders
- neurodegenerative disorders
- Neuromuscular disorders
- mental retardation
- learning disabilities
- muscular dystrophies
- acute flaccid paralysis and AFP surveillance
- malformations
- movement disorders
- Tumors

Hematology and Oncology

- deficiency anemias
- hemolytic anemias
- aplastic anemia
- pancytopenia
- thrombocytopenia
- disorders of hemostasis
- blood component therapy
- transfusion related infections
- bone marrow transplant /stemcell transplant
- acute and chronicleukemia
- myelodys plastic syndrome
- Lymphoma
- Neuro blastoma
- Hyper coagulable states

Endocrinology

- hypopituitarism/ hyperpituitarism
- diabetes insipidus
- pubertaldisorders
- hypo–and hyper-thyroidism
- adrenal insufficiency
- Cushing ’s syndrome
- adrenogenital syndromes
- diabetes mellitus
- hypoglycemia
- short stature
- gonadal dysfunction and intersexuality
- obesity

Infections

- bacterial (including tuberculosis)
- viral(including HIV)
- fungal
- parasitic
- rickettssial
- mycoplasma
- protozoal and parasitic
- nosocomial infections
- control of epidemics and infection prevention
- safe disposal of infective material

Emergency and Critical Care

- emergency care of shock
- cardio-respiratory arrest
- respiratory failure
- acute renal failure
- status epilepticus
- acute severe asthma
- fluid and electrolyte disturbances
- acid- base disturbances
- poisoning
- accidents
- scorpion and snakebites

Immunology and Rheumatology

- arthritis(acute and chronic)
- vasculitides
- immunodeficiency syndromes
- systemic lupus erythematosus

ENT

- acute and chronic otitis media
- hearing loss
- post-diphtheriticpalatalpalsy
- acute/chronictonsillitis/adenoids
- allergic rhinitis/sinusitis
- foreign body

Skin Diseases

- exanthematous illnesses
- vascular lesions
- pigment disorders
- vesicobullous disorders
- infections
- Steven-Johnson syndrome
- atopic ,seborrheic dermatitis
- drug rash
- alopecia
- icthyosis

Eye problems

- refraction and accommodation
- partial /total loss of vision
- cataract
- night blindness
- strabismus
- conjunctival and corneal disorders
- disorders of retina ,Including tumors

Behavioral and Developmental disorders

- rumination, pica
- enuresis ,encopresis
- sleep disorders
- habit disorders
- breath holding spells
- anxiety disorders
- mood disorders
- temper tantrums
- attention deficit hyperactivity disorders
- autism(as mentionedinobjective24)

Social /Community Pediatrics.

- National health programs related to child health
- IMNCI
- Vaccines :constituents ,efficacy ,storage, contraindications and adverse reactions
- Rationale and methodology of pulse polio immunization
- Child labor, abuse ,neglect
- adoption
- Disability and rehabilitation
- rights of the child
- National policy of child health and population
- juvenile delinquency
- Principles of prevention ,control of infections (food, water ,soil, vector borne)
- Investigation of an epidemic

Orthopedics .

- Major congenital orthopedic deformities
- bone and joint infections
- Common bone tumors

Approach to clinical problems Growth and development

- Precocious and delayed puberty
- developmental delay
- impaired learning

Neonatology

- low birth weight newborn
- sick newborn

Nutrition

- lactation management and complementary
- protein energy malnutrition feeding (underweight, wasting ,stunting)
- failure to thrive and micronutrient deficiencies

Cardiovascular

- Murmur
- cyanosis
- congestive heart failure
- systemic hypertension
- arrhythmia
- shock

GIT and Liver

- Acute diarrhea
- persistent and chronic diarrhea
- Abdominal pain and distension
- ascites
- vomiting
- constipation
- gastrointestinal bleeding
- jaundice
- hepatosplenomegaly
- hepatic failure and encephalopathy

Respiratory

- Cough/chronic cough
- hemoptysis
- Wheezy child
- respiratory distress

Infections

- acute onset pyrexia
- prolonged pyrexia with and
- recurrent infections
- without localizing signs
- nosocomial infections
- fever with xanthema

Renal

- Hematuria /dysuria
- bladder/bowel incontinence
- Voiding dysfunctions
- renal failure (acute and chronic)
- hypertension

Hematology and Oncology

- anemia
- bleeding

Neurology

- limping child
- convulsions
- paraplegia ,quadriplegia
- cerebral palsy
- macrocephaly and microcephaly
- floppy infant

- acute flaccid paralysis
- headache

Neurology

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- convulsions
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- floppy infant
- acute flaccid paralysis
- headache

Endocrine

- thyroid swelling
- ambiguous genitalia
- obesity
- short stature

Miscellaneous

- skin rash
- lymphadenopathy
- epistaxis
- proptosis
- arthralgia, arthritis

TEACHING AND LEARNING METHODS

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.

Teaching methodology

This should include regular bedside case presentations and demonstrations , didactic Lectures, seminars, journal clubs, clinical meetings, and combined conferences with allied departments. The post graduate student should be given the responsibility of managing and caring for patients in a gradual manner under supervision .Department should encourage e-learning activities.

Formal teaching sessions

In addition to bedside teaching rounds, at least5-hr of formal teaching per week are necessary. The departments may select a mix of the following sessions:

- Journal club — Once a week
- Seminar — Once a fortnight
- Case discussions — Once a month Once a month
- Interdepartmental case or seminar [Cardiology , Pediatric Surgery]

- Attend accredited scientific meetings (CME, symposia, and conferences).
- Additional sessions on resuscitation, basic sciences, biostatistics research methodology, teaching methodology, hospital waste management, health economics, medical ethics and legal issues related to pediatric practice are suggested.
- The postgraduate students shall be required to participate in the teaching and training programme of under graduate students and interns.
- **A postgraduate student in MD Pediatrics would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published /accepted for publication /sent for publication during the period of his post graduate studies so as to make him eligible to appear at the postgraduate degree examination.**

Log book: During the training period, the post graduate student should maintain a Log Book indicating the duration of the postings/work done in Pediatric Wards, OPDs and Casualty. This should indicate the procedures assisted and performed ,and the teaching sessions attended The purpose of the Log Book is to:

a. Help maintain a record of the work done during training,
b. Enable Consultants to have direct information about the work; intervene if necessary,
c. Use it to assess the experience gained periodically.

The log book shall be used to aid the internal evaluation of the student. The Logbooks shall be checked and assessed periodically by the faculty members imparting the training.

Rotations

The postgraduate student should rotate through all the clinical units in the department .In addition, following special rotations should be undertaken**:**

Mandatory

Neonatology, perinatology Intensive care, emergency

Desirable

Posting in Out Patient Services of the following specialties is recommended
Skin, Pediatric Surgery, Physical Medicine and Rehabilitation Community

Note: Additionally, the PG students may be sent to allied specialties (Cardiology, Neurology, nephrology *etc.*) depending on facilities available. It should be ensured that the training conforms to the curriculum.

Thesis

- **Objectives**

By carrying out a research project and presenting his work in the form of thesis, the student shall be able to:

- Identify a relevant research question
- Conduct a critical review of literature
- Formulate a hypothesis
- Determine the most suitable study design
- State the objectives of the study

- Prepare a study protocol
- undertake a study according to the protocol
- analyze and interpret research data ,and draw conclusions
- write a research paper

Guidelines

While selecting the topic following should be kept in mind:

- the scope of study is limited to enable its conduct within their sources and time available
- the study must be ethically appropriate
- the emphasis should be on the process of research rather than the results
- the protocol ,interim progress and final presentations made formally to the department
- only one student per teacher/thesis guide

There should be periodic department review of the thesis is work ,as per following schedule:

End of 6months	Sub mission of protocol
During 2nd yr	Mid-term presentation
6 months prior to examination	Final presentation; submission

During the training programme patient safety is of paramount importance ;therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently. For this purpose, provision of skills laboratories in medical colleges is mandatory.

ASSESSMENT

FORMATIVE ASSESSMENT, I e., assessment to improve learning

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.

General Principles

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and practical/ clinical examination.

Quarterly assessment during the MD training should be based on:

1. Journal based /recent advances learning
2. Patient based/ Laboratory or Skill based learning
3. Self directed learning and teaching
4. Departmental and interdepartmental learning activity
5. External and Outreach Activities /CMEs
6. At the end of completion of 1st& 2nd year there will a theory exam/ assessment & prelim exam will be take one month before the University Examination .

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).

SUMMATIVE ASSESSMENT, I e., assessment at the end of training

The summative examination would be carried out as per the Rules given in POST GRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

The post graduate examination shall be in three parts:

1. **Thesis**

Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination .A postgraduate student, shall be allowed to appear for the Theory and Practical/ Clinical examination only after the acceptance of the Thesis by the examiners**.**

2. **Theory examination**

The examinations shall be organized on the basis of' Grading 'or' Marking system' to evaluate and to certify post graduate student's level of knowledge, skill and competence at the end of the training. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical 'separately shall be mandatory for passing examination as a whole. The examination for M.D./ MS shall be held at the end of 3rd academic year. An academic term shall mean six month' straining period.
There shall be four theory papers .Each paper should have10 short essay questions (SEQ).

Paper: I	Basic sciences as applied to Pediatrics
Paper :II	Neonatology and community Pediatrics
Paper :III	General Pediatrics including advances in Pediatrics relating to Cluster I specialties
Paper :IV	Pediatric Medicine including advances in Pediatrics relating to Cluster II specialties

Cluster I	Nutrition, Growth and Development ,Immunization, Infectious disease,Genetics,Immunology,Rheumatology,PsychiatryandBehavioral Sciences, Skin, Eye, ENT, Adolescent Health, Critical Care, Accidents and Poisoning
Cluster II	Neurology and Disabilities, Nephrology, Hematology and Oncology, Endocrinology, Gastroenterology and Hematology, Respiratory and Cardiovascular disorders

University examination after completion of 3 years of residency

*** 4 theory papers 100 marks each – duration 3 hours**

*** Minimum passing marks in each head 40% and aggregates 50% in all papers**

Paper	Marks
Paper 1	Total 10questions of each 10 marks
Paper 2	Total 10questions of each 10 marks
Paper 3	Total 10questions of each 10 marks
Paper 4	Total 10questions of each 10 marks
Total	400 marks

NOTE: THE DISTRIBUTION OF TOPICS IN PAPERS ARE SUGGESTIVE ONLY AND MAY OVERLAP AND CHANGE

3. Practical/ clinical and Oral/viva voce examination Practical examination

Case I

Case II (Newborn)

Case III

OSCE may be used.

Practical examination.

Total marks 400

1.Long case –(Multisystem case including neurology)	100 marks
2.Short Cases (2) 50 Marks Each	100 marks
3.Viva Voce (4-Tables) -25 Marks Each(x-ray & Diagnosis ,drugs ,instrument , nutrition & instrument)	100 marks
4.OSCE (10 spots -10 Marks Each)-	100 marks
Total marks	400 marks

Minimum Passing Marks -50% Separate In Clinics, Viva and OSCE

Oral/ Viva voce examination on defined areas by each examiner separately. Oral examination shall be comprehensive enough to test the post graduate student's overall knowledge of the subject.

Recommended Reading:

Books (latest edition)

1. Nelson's Textbook of Pediatrics ,Kliegman et al (Editors)
2. Manual of Neonatal car, Cloherty
3. Nada 's Pediatric Cardiology, Kaene
4. PG Textbook of Pediatrics, IAPP Gupta et al(Ediotors)
5. Clinical Methods in Pediatrics, P Gupta.
6. Care of the newborn, Meharban Singh.

Journals

international Journals and 02 national (all indexed)journals

Annexure I

Orientation sessions for PG students joining MD in Pediatrics

This could be spread over 4-5 sessions once or twice a week depending on departmental routine and feasibility.
For all PG students

Orientation to the Hospital: Various Departments and facilities available

- Communication skills :Patients and colleagues
- Literature search
- Basic research methodology
- Protocol writing and thesis

Pediatric PGs

Introduction to Residency in Pediatrics

- Universal precautions and appropriate disposal of hospital waste
- Management of shock
- Congestive cardiac failure
- Normal fluid and electrolyte requirement and their disorders
- Interpretation and management of disorders of acid- base balance
- Evaluation of a sick new born
- Management of seizures, hypothermia and hypoglycemia in the new born
- Management of seizures and status epilepticus
- Management of comatose patients
- Hospital management of severe PEM
- Acute kidney injury
- Fulminant hepatic failure
- Management of respiratory distress
- Management of acute diarrhea
- Approach to a bleeding child and its management
- Rational antibiotic therapy

Annexure II

Postgraduate Students Appraisal Form
Pre/Para /Clinical Disciplines

Name of the Department /Unit :

Name of the PG Student :

Period of Training : FROM ……TO……

Sr. No.	PARTICULARS	Not Satisfactory	Satisfactory	More Than Satisfactory	Remarks
		1 2 3	4 5 6	7 8 9	
1.	Journal based / recent advances learning				
2.	Patient based /Laboratory or Skill based learning				
3.	Self directed learning and teaching				
4.	Departmental and interdepartmental learning activity				
5.	External and Outreach Activities/CMEs				
6.	Thesis/Research work				
7.	Log Book Maintenance				

Publications **Yes/No**

Remarks*_____

_____

_____

***REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For scoreless than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.**

SIGNATURE OF ASSESSEE **SIGNATURE OF CONSULTANT** **SIGNATURE OF HOD**

D.Y. PATIL EDUCATION SOCIETY

[Deemed to be University], Kolhapur

Re-accredited by NAAC with 'A' Grade