



NUMS
NATIONAL UNIVERSITY
OF MEDICAL SCIENCES

**MBBS
Final Year**

**Curriculum
Paediatrics
(2020-21)**

**National University of Medical Sciences
Pakistan**

I. Context/Preamble:

Paediatrics is an integral part of the undergraduate curriculum. Basis of paediatrics is established in the initial years through contribution from basic sciences. It is being taught as a major subject in last two years.

II. Mission

To equip the average student with minimum essential knowledge, skill and attitude so as to enable them to manage patients appropriately.

III. Competencies

- a. Communication skills
- b. Critical thinking
- c. Problem solving
- d. Clinical skills
- e. Examination skills

IV. Expectations from students

- a. Be professional in behavior and dress code when communicating with patient and his/her family
- b. Respect patient and their family's wishes along with social and cultural norms
- c. Examine patients with their permission in the presence of chaperon
- d. Inculcate behavior of regular self-learning for academic sessions & clinical problem encounters
- e. Keep yourself abreast with current relevant information about your patients
- f. Document and update patient's progress in his/her file regularly

V. Course Outcomes

To equip them with essential knowledge, skill and attitude in order to enable them to:

- a. Diagnose common Pediatric problems, suggest and interpret appropriate investigation, rationalize treatment plan and if appropriate, refer patient for specialist opinion/management.
- b. Suggest preventive measure for the common public health problem in the community
- c. Perform relevant procedures
- d. Convey relevant information and explanations accurately to patients, families, colleagues and other professionals
- e. Participate effectively and appropriately in an inter professional health care team
- f. Understand medical ethics and its application pertaining to paediatrics and maintain the confidentiality of the patient.
- g. Adapt research findings appropriately to the individual patient situation or relevant patient population

I. Teaching hours - Paeds

YEARS	CONTACT HOURS
V	200
TOTAL	200

VI. **Learning Strategies & Situations**

A variety of pedagogies are used in this course, including didactic teaching, team-based and evidence-based learning in class rooms and patient side environment. Students are encouraged to adopt and inculcate self-learning strategies during the course

VII. **Learning Opportunities**

- a. Teaching Ward Rounds
- b. Case presentations
- c. Case based Discussion
- d. Short cases in OPD
- e. Bedside Discussion
- f. Small Group Discussion
- g. Workshops (Neonatal resuscitation, fluid & electrolyte balance and Oxygen therapy)
- h. Self-learning Activities
- i. Skill Lab Activity

VIII. **Venues for learning opportunities**

- a. Outpatient clinic
- b. Emergency room
- c. Inpatient ward
- d. Tutorial room
- e. Libraries including audio-visuals

IX. **Specific Learning Outcomes**

Learning outcomes specific to the Paediatrics course have been tabulated below in the table of specification and matched with educational strategies.

X. **Implementation of curriculum**

*The university will give details of all content including learning outcomes and table of specifications, distribution of which across the three years and rotations is upon the discretion of the medical college/institute. Rotation plan is devised by the institute itself.

All institute to follow PM&DC minimum requirements i.e. 150 contact hours with 50% weighting to theory content and 50% to practical/skills

XI. **Attendance & Discipline:**

- a. A record of attendance of medical students, test results, end of module/rotation test result, workshop marks should be updated regularly.
- b. Each Head of unit would keep a log of all clinical activities
- c. Attendance of each student would be endorsed in his logbook as well.
- d. Overall 75% attendance is mandatory to appear in final professional exam

XII. **Assessment**

Assessment is an important aspect of any training program which not only includes assessment of students but also of the training program itself. The performance of each student would be

marked and counted towards final internal assessment. The following tools/ methods would be used for this purpose:

a. **Theory**

- **Periodical class tests**
- **End Modular/End of Rotation Exams:** At the end of each clinical rotation, a theory exam would be held for the entire class from the syllabus covered during this period

b. **Practical**

- **Log Book:** Each student would complete his log book and get it countersigned from HOD at the end of each rotation. Log book is maintained during the rotation
- **CBL performance:** Performance of each student would be marked and sent to Head of Clinical Training
- **End of Rotation Exams:** At the end of each clinical rotation, the whole group would have a clinical exam.
- **Workshops:** Three Workshops (Neonatal resuscitation, fluid & electrolyte balance and Oxygen therapy) will be held during the rotation. In addition, students will also attend a Basic Life Support (BLS) workshop (**only attendance is required to get marks**)

XIII. **Evaluation of the Course**

- Student portfolio should be maintained in the department in which students should give their feedback either by name or anonymously
- Faculty suggestions, if any, for improvement of training may be incorporated in the next rotation

XIV. **Recommended Readings**

- Basis of Paediatrics
- Current Pediatric Diagnosis & Treatment
- Harriet & Lane Handbook of Paediatrics
- Paediatrics illustrated text book

S. No	Themes	Topics	Learning Outcomes		Educational Strategies	Weighting	Assessment Tools
			Knowledge/ Outcome	Skill/Attitude			
I. IMMUNIZATION AND NUTRITION							
1	Immunization	<ul style="list-style-type: none"> EPI Schedule Vaccine administration 	Students should be able to <ul style="list-style-type: none"> Discuss the importance of immunization in healthcare field and identify vaccine preventable diseases. Tabulate the EPI immunization schedule Recognize important global vaccine preventable diseases. Discuss the childhood immunization plan according to age of child. 	Administer EPI vaccine to infants	Lecture demonstration in OPD		MCQ/SAQ/OSCE
2	Nutrition	<ul style="list-style-type: none"> Basis of Pediatric Nutrition Breast feeding, infant feeding, weaning Protein Energy Malnutrition Rickets Micronutrient/ vitamin deficiency 	<ul style="list-style-type: none"> Assess nutritional status based on feeding history and clinical examination Interpret anthropometry, basic hematological and biochemical indices to identify basic dietary deficiency. Identify the causes, clinical presentation of child with PEM. Discriminate the assessment findings and laboratory findings of kwashiorkor and marasmus. Formulate the treatment plan for PEM. 	<ul style="list-style-type: none"> Perform mid upper arm circumference and skin fold thickness to estimate body composition. Take weight, length, OFC of children. Calculate BMI advise appropriate nutritional measures for healthy and sick children (Breast feeding, avoidance of bottle, proper weaning) Identify signs of micronutrient deficiencies 	Bedside Teaching CBL Lecture Demonstration in OPD		Short case Long Case OSCE

- Identify the causes and clinical signs of micronutrient deficiency

II. **GROWTH AND DEVELOPMENT**

			<ul style="list-style-type: none"> • Identify the causes and clinical signs of micronutrient deficiency 			
II. GROWTH AND DEVELOPMENT						
3	Genetics	Patterns of inheritance Down syndrome Common genetic disorder/malformation	<ul style="list-style-type: none"> • Recall Patterns of inheritance • Diagnose Down Syndrome • Diagnose common malformations 		Bedside Teaching CBL Lecture Demonstration in OPD	MCQ/SAQ/OSCE
4	Growth and development	<ul style="list-style-type: none"> • Developmental Milestones • Anthropometry 	<p>Student should be able to</p> <ul style="list-style-type: none"> • Recognize growth development and maturation. • Justify use the tools for measuring growth and development. • Identify the genetic, nutritional and environmental factors that can influence child growth and development. 	<ul style="list-style-type: none"> • Plot weight and height on centile charts • To identify age appropriate centile charts. • Demonstrate use of weight and height to monitor growth and development. • Demonstrate effective skills aspects when communicating with children of various ages and family caregivers 	Lecture demonstration in OPD	MCQs SEQs OSCE

III. RESPIRATORY SYSTEM							
5	Respiratory Diseases	Stridor Diphtheria Pertussis ARI (Acute respiratory infections) IMNCI Guidelines Asthma Pneumonia Tuberculosis (Pulmonary) Bronchiolitis Pleural effusion	<ul style="list-style-type: none"> • Student should be able to • Discuss the clinical presentation and common etiology of acute respiratory infections. • Generate differential diagnosis and choose appropriate lab investigations for acute respiratory infections. • Devise management plan for pneumonia, parapneumonic effusions and empyema. • Justify factors that predispose children to TB. • Interpret laboratory diagnosis and investigations for diagnosing TB. • Manage the Complications of TB in children. • Differentiate between pertussis and diphtheria. • Diagnose acute exacerbations of asthma • Propose management plan for acute exacerbation of asthma. 	<ul style="list-style-type: none"> • Differentiate between stridor and wheeze. • Perform bedside examination of children with diphtheria and pertussis, TB using the necessary precautionary measures • Perform BCG vaccination • Identify BCG scars • Demonstrate technique of inhaler use to patients care giver. 	Lecture CBL Bedside Oxygen therapy workshop		Short case Long case SAQs

			Discuss the steps of asthma management according to GINA guidelines				
IV. INFECTIONS							
6	Infections	<ul style="list-style-type: none"> • Measles • Mumps • Chickenpox • Rheumatic Fever • Infective Endocarditis • Malaria/ cerebral malaria • Enteric Fever • Meningitis • Encephalitis • Poliomyelitis • Croup • Tetnus • AGE • Ear infections • HIV 	<ul style="list-style-type: none"> • Student should be able to • Recognize the incidence and etiology of Measles, Mumps and Rubella. • Identify the clinical presentation of Enteric fever. • Develop management plan for enteric fever • Develop management plan for Encephalitis, Poliomyelitis, Croup, Tetanus and AGE • Develop management plan for suspected Enteric fever • Elaborate complications and Preventive measures of Enteric fever. • Correlate pathological changes induced by malarial parasite to the clinical presentation and complications of different types of malaria in children. • Develop management plan for Malaria in children 	<ul style="list-style-type: none"> • Perform Immunization 	CBL Lecture Demonstration in OPD		MCQs SEQs Short case Long case

			<ul style="list-style-type: none"> Identify the clinical presentation of HIV infection in children 				
V. GASTROINTESTINAL TRACT							
7	Gastroenterology	<ul style="list-style-type: none"> Acute Gastroenteritis Recurrent abdominal pain Acute hepatitis Chronic Liver Disease Chronic Diarrhoea Dysentery Celiac Disease Malabsorption Worms infestation Giardia amoebiasis 	<ul style="list-style-type: none"> The student should be able to Differentiate between organic and inorganic causes of recurrent abdominal pain Identify signs and symptoms of hepatitis and hepatic encephalopathy Identify the clinical presentation of malabsorption. Identify the signs and symptoms of gluten enteropathy/ coeliac disease Identify the clinical presentation of Worms infestation, Giardia and Amoebiasis Describe the treatment options of Worms infestation, Giardia and Amoebiasis 	<ul style="list-style-type: none"> Demonstrate use of hand hygiene Recognize jaundice in children Plan management of diarrhoea according to WHO guidelines. 	Lectures CBLs Ward Teaching		SEQs MCQs

			Correlate the common causes of diarrhoea to the pathophysiological changes seen in acute and chronic diarrhoea.				
VI. NEONATOLOGY							
8	Neonatology	<ul style="list-style-type: none"> • Normal newborn • Neonatal Jaundice • Neonatal Sepsis • Low birthweight/ Preterm • Neonatal Convulsions • Vomiting in newborn • Resuscitation of Newborn • Respiratory disorders of newborn- Birth Asphyxia • Respiratory Distress Syndrome • Necrotizing Enterocolitis • Hypoxic Ischaemic Encephalopathy 	<ul style="list-style-type: none"> • demonstrate understanding of the normal growth of newborn • Identify need for resuscitation in newborn and risks of birth asphyxia • Explain APGAR scoring system • Recognize signs and symptoms of neonatal jaundice. • Plan treatment of neonatal jaundice and its complications of neonatal jaundice • Devise treatment plan for neonatal convulsions based on the etiology. 	<ul style="list-style-type: none"> • Demonstrate stepwise resuscitation protocol in newborn • Perform initial steps of resuscitation • Perform ambu bagging and ventilation • Perform cardiac compressions in neonates • Recognize jaundice in neonates • Recognize signs of bilirubin encephalopathy • Identify minor & major malformations in neonates 	Lectures CBLs Workshops (Resuscitation)		MCQs SEQs TOACS

VI. CARDIOLOGY						
9	Congenital and Acquired Heart Disease	<ul style="list-style-type: none"> • Acyanotic Heart Diseases • Cyanotic heart disease • Tetralogy of Fallot • CCF in children • Rheumatic Heart Disease 	Student should be able to <ul style="list-style-type: none"> • Differentiate between cyanotic and acyanotic heart diseases • Correlate pathophysiology of pediatric CCF to its clinical presentation. • Identify common pediatric cardiac failure syndromes • Discuss the treatment of CCF • Identify clinical features of rheumatic heart disease 	<ul style="list-style-type: none"> • Identify clinical signs of CCF in children • Recognize common types of murmurs 	Lectures CBLs Bedside Learning	MCQs SAQs Long case Short case
VII. CENTRAL NERVOUS SYSTEM						
10	CNS Diseases	<ul style="list-style-type: none"> • Febrile Seizures • Epilepsy • Meningitis • Cerebral Palsy • Acute Flaccid Paralysis • Ataxia & movement disorders • Neurodegenerative disorders • Neuromuscular disorders • Floppy infant 	Student should be able to <ul style="list-style-type: none"> • Identify diagnostic criteria for febrile, afebrile seizures and status epilepticus. • Recognize trends related to epilepsy and seizure management. • Identify different types of CP • Identify various causes of meningitis in different age groups • Plan management of meningitis in children • Recognize various forms of acute flaccid paralysis • Identify Ataxia & movement disorders, Neuromuscular 	<ul style="list-style-type: none"> • Recognize tonic/clonic epileptic seizure • Manage seizures in hospital setting • Perform lumbar puncture • Examine motor system of children • Identify hypotonia on examination 	Lectures CBLs Bedside	MCQs SEQs Long case short cases

			disorders and Neurodegenerative disorders				
			<ul style="list-style-type: none"> Recognize hypotonia in children To enlist causes of hypotonia in children 				
11	Psychological Paediatrics	Enuresis, Encoparesis, hyperactivity, Dyslexia, attention deficit order, child abuse, right of child	<ul style="list-style-type: none"> Recognize these disorders in children To enlist causes of these disorders in children 		Lectures CBLs Bedside		MCQs SEQs Long case short cases
VIII. ENDOCRINOLOGY							
12	Endocrinology	<ul style="list-style-type: none"> Diabetes Mellitus DKA Hypothyroidism Short stature 	The student should be able to :- <ul style="list-style-type: none"> Identify common endocrinological diseases Develop management plans of short stature due to various causes 	Perform anthropometry and plot it on growth charts	Lectures CBL		MCQs SEQs Short cases
IX. BLOOD							
13	Hematology	IDA Thalassemia Hemolytic anemias G6PD Hereditary Spherocytosis Bleeding disorders Aplastic anemia	The student should be able to <ul style="list-style-type: none"> Explain classification and causes of anaemias. Classify bleeding disorders in children Generate differential diagnosis based on Interpretation of investigations Discuss management of anemias with special reference to nutritional rehabilitation 	<ul style="list-style-type: none"> Identify pallor, lymphadenopathy, visceromegaly in children on clinical examination Clinically differentiate between petechiae, bruises and purpura. Counsel mothers on proper nutrition 	CBL Lectures Bedside Teaching		MCQs SAQs Long case

14	Malignancies of childhood	ALL AML CML CLL • Neuroblastoma • Wilms tumour	The student should be able to <ul style="list-style-type: none"> • Describe the epidemiology of childhood malignancies • Identify different types of malignancies in children • Recognize the clinical presentation of the most common pediatric cancers • Interpret laboratory findings indicative of a possible cancer diagnosis • Determine the approaches to cancer treatment 	• Perform the clinical assessment of a child with cancer	Lectures Bedside teaching		MCQs SEQs
XII. NEPHROLOGY/ UROLOGY							
15	Renal Diseases	• UTI • Nephrotic Syndrome • AKI • CKD • APSGN	<ul style="list-style-type: none"> • Differentiate nephrotic and nephritic syndromes • Manage nephrotic and nephritic syndrome according to Interpretation of initial investigations • Recognize complications of common renal diseases in children. 	<ul style="list-style-type: none"> • Perform and interpret dipstick urine • Measure Blood Pressure of a child. • Perform clinical examination of child with edema. 	CBL Bedside Teaching Lectures		MCQs SEQs Short & Long case

XIII. Poisoning						
16	Childhood Poisoning	Poisonings	<ul style="list-style-type: none"> Differentiate the various types of poisoning and their signs and symptoms Define the goals of treatment Appraise the pharmacological basis for enhancing elimination of drugs and use of specific antidotes 	<ul style="list-style-type: none"> Perform stomach lavage in children with poisonings 	Lectures Bedside Teaching	MCQs
XIV. Paediatrics Surgery						
17	Paeds Surgery	Intestinal atresia Hernia TEV DDH Cleft lip & Palate Vesico ureteral reflux, pyloric stenosis, myelomeningocele, hydrocephalus, birth trauma	To identify the management of these diseases	<ul style="list-style-type: none"> Recognize TEV DDH Cleft lip & palate myelomeningocele, hydrocephalus in children 	Lecture Bedside Teaching	<ul style="list-style-type: none"> Short case TOACS

Procedural skills:

Observe the Following Procedures:

Lumbar Puncture	Pericardiocentesis
Bone marrow aspiration	Liver Biopsy
Supra pubic puncture	Renal biopsy
Subdural tap	Passing of catheter
Thoracocentesis	Pericardial tap