WEST BENGAL UNIVERSITY OF HEALTH SCIENCES

CURRICULUM
OF
PAEDIATRICS including NEONATOLOGY

The course includes systemic instructions in growth and development, nutritional needs of a child , immunization schedules and management of common diseases of infancy and childhood, scope of Social Pediatrics and counseling.

GOAL :

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

A. OBJECTIVES :

1. KNOWLEDGE – At the end of the course students will be able to :

    a) describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof.
    b) describe the common paediatric disorders and emergencies in terms of epidemiology, aetiopathogenesis , clinical manifestations, diagnosis, rational therapy and rehabilitation.
    c) state age related requirements of calories, fluids, nutrients, drugs etc. in health and disease.
    d) describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisoning, accidents and child abuse.
    e) outline national programmes relating to child health including immunization programmes.

2. SKILL : At the end of the course the students will be able to:

    a) take a detailed paediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigation results, and plan and institute therapy.
    b) take anthropometrics measurements ,resuscitate newborn infants at birth, prepare ORS, perform tuberculin test, administer vaccines available under current national programme, perform venesection, provide nasogastric feeding, and start an I/V fluid etc.

c) conduct diagnostic proceduces such as lumbar puncture , liver and kidney biopsy ,bone marrow aspirations, pleural and ascitic tap.
d) distinguish between normal newborn babies and those requiring special care, and institute early care to all newborn babies including care of preterm and low birth weight babies, provide guidance and counselling in breast feeding.
e) provide ambulatory care for all sick children, identify indications for specialized/ in-patient care and ensure timely referral for those who require hospitalization.

3. INTEGRATION :

The training in Pediatrics should prepare the students to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team in an integrated form with other disciplines, e.g. Anatomy , Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine, Physical Medicine and rehabilitation.

SYLLABUS OF PAEDIATRICS including NEONATOLOGY

COURSE SCHEDULE :

GENERAL PAEDIATRICS

I Didactic teaching : 90 +10 hrs. in Neonatology = Total 100 hours.

Lectures	: 30 in no.	: 1 hour each.
Seminars	: 10 in no.	: 2 hours each.
Demonstration	: 20 in no.	: 2 hours each.

II Clinical / Practical :

Clinical postings :	4th. Semester	: 2 weeks
	6th. Semester	: 2 weeks
	7th. Semester	: 2 weeks
	8th. Semester	: 4 weeks.
	Total	: 10 weeks.

5- 6 days a week : 3 hours daily.

NEONATOLOGY

I Didactic teaching :
Lectures : 10 in no. : 1 hour each.

II Clinical / Practical :
In 8th. Semester 10 classes : 3 hours each.

CONTENTS

1. Growth and Development :

    a) Definitions, determinants of growth and assessment of growth, concept of percentiles.
    b) Growth & sexual development during childhood and adolescence, anthropometry, velocity of growth, growth monitoring, road to health, deviation from normal.
    c) Development of milestones, determinants of normal development and factors affecting development.
    d) Assessment of development- gross motor, fine motor, language, social/adaptive, concept of DQ.
    e) Approach to a child with failure to thrive, growth retardation, short stature, obesity.

2. Nutrition and disorders.

    a) Age related requirements of calories, nutrients, vitamins, minerals, trace elements.
    b) Feeding – normal/during illness, weaning.
    c) PEM – diagnosis, growth charts, clinical features, complications, management.
    d) Deficiency disorders – Vit. A D E K, Vit C, B complex.
    e) Nutritional anaemia in infancy and childhood.

3. Immunisations: UIP, EPI, contra indications /adverse reactions to vaccines, cold chain, pulse polio.

4. Fluid and electrolyte – Pathophysiology and principle of management.

5. Infections diseases.

    a) Common childhood exanthematous illnesses e.g. measles, chicken pox.
    b) Mumps, Whooping cough.
    c) Typhoid, Diphtheria, Tuberculosis – pulmonary and extra- pulmonary.
    d) Parasitic infestations e.g. Malaria, Kalazar, amoebic dysentery, giardiasis.
    e) Childhood AIDS.

6. Respiratory system.

    a) AURI - Common cold, Otitis media, pharyngitis, croup.
    b) ALRI - Pneumonia / Bronchiolitis.
    c) Bronchial asthma.

7. Cardiovascular system :

   a) Congestic cardiac failure – cause, diagnosis, management.
   b) Congenital heart diseases – acyanotic /cyanotic.
   c) Rheumatic fever and rheumatic heart disease.

8. Genitourinary system :

   a) Acute post-streptococcal glomerulonephritis.
   b) Nephrotic syndrome.
   c) Urinary tract infection.
   d) Childhood hypertension

9. GI system :

   a) Acute diarrhoea /dysentery – etiology, pathophysiology, C.F., management.
   b) Persistent diarrhoea.
   c) Jaundice in childhood.
   d) Cirrhosis of liver.

10. Haemato-oncology :

   a) Anaemia in children – classification.
   b) Thalassaemias.
   c) Acute Leukaemia, lymphoma.
   d) Hemophilia / ITP.

11. CNS disorders :

   a) Meningitis – Tubercular, Bacterial, viral.
   b) Encephalitis.
   c) Cerebral palsy- aetiology, diagnosis, prevention, treatment.
   d) Mental retardation- ---------- do----------
   e) Hydrocephalus, microcephaly.
   f) Acute ant poliomyelitis, GB syndrome.

12. Endocrine system :

   a) Cretinism- early diagnosis, management.
   b) Juvénile diabètes mellitus.

13. Miscellaneous : Child abuse /accidents /poisoning (K. Oil, snake bite, scorpion bite)

Lectures : 30 (Thirty)

1. Growth and development.
2. Nutrition-age related requirements, PEM, vitamin / mineral deficiencies.
3. Bronchial asthma .
4. Pulmonary and extra pulmonary TB .
5. Pneumonia / Bronchiolitis .
6. Rheumatic fever and rheumatic heart disease.
7. Congenital heart disease – acynotic (VSD) / cyanotic (Fallot's)
8. Meningitis – TB, pyogenic, viral encephalitis.
9. Cerebral palsy
10. Convulsive disorders
11. Diarrhoea / dysentery, dehydration , malabsorption.
12. Liver diseases – hepatitis, complications.
13. I. C. C.
14. Parasitic infest.-malaria , kalazar
15. Failure to thrive.
16. Anemia in children-chronic hemolytic anemia, nutritional anemia.
17. AGN / nephrotic systrome.
18. UTI, childhood hypertension.
19. Juvenile diabetes mellitus.
20. Hypothyroidism, Down syndrome.
21. Vaccine preventable diseases.
22. Acute leukaemia / lymphoma.
23. Poliomyelitis.
24. JRA
25. Common childhood poisoning, accidents.
26. Child abuse.
27. Fluid electrolytes.
28. Childhood AIDS
29. National programme related to RCH / ICDS.
30. Acute Febrile illnesses with exanthems.

SEMINARS :

1. PEM
2. Immunization
3. Acute diarrhoea in children.
4. ARI
5. Shock
6. Heart failure
7. Convulsions
8. Bleeding
9. Jaundice
10. Coma

DEMONSTRATION:

1. Paediatric history taking including dietary history
2. Anthropometry
3. Development assessment
4. Common paediatric equipments.
5. Common X-rays.
6. Treatment of diarrhoea – ORS therapy
7. Procedures – LP, bone marrow aspirations, venous blood sampling, pleural tap, ascitic tap, liver biopsy.
8. IV line with fluid therapy.
9. MT, BCG vaccination.
10. Blood transfusion, blood component therapy.
11. Cardiopulmonary resuscitation.
12. Drug dosage.
13. Nebuliser therapy
14. Oxygen therapy.
15. Feeding normal newborn, LBW and in diseased state.
16. Handling paediatric emergencies under supervision- status asthmaticus /cyanotic spell.
17. A.F.P. Stool collection, storage, referral.
18. Vaccinations-storage, maintenance of cold chain.
19. Health education talks in small groups – Neonatal / breast feeding / home care during diarrhoea and ARI.
20. Urine examination- RE, ME, urine collection, PBS, sepsis screen.

NEONATOLOGY COMPONENT

AIM :

To acquire competence to promote rational care of normal neonates and to undertake appropriate management of at risk and sick neonates.

Primary objectives :

At the end of training undergraduate Medical students will be able to :-

1. resuscitate newborn at birth.
2. identify at risk/sick neonates and decide required level of care.
3. provide care to normal newborn.
4. diagnose and manage common neonatal problems.
5. impart health education to mother and the family regarding care of neonates with birth spacing.
6. promote breast feeding, impart lactation management and feeding.
7. learn specific neonatal procedures.
8. interpret reports of investigations.
9. maintain neonatal case record and use basic neonatal equipments.
10. implementation of national programmes aimed at newborn.

SYLLABUS

LECTURES **: (10)**

1. Introduction to neonatology. Classification of sick neonates. Concept of high risk neonates in community and health center. Identification of high risk neonates . Neonatal transport .
2. Care of the normal newborn, natural phenomena of neonates.
3. LBW – etiology, complications, management.
4. Neonatal feeding – breast feeding, lactation management.
5. Fluid and nutrition therapy . Hypothermia of neonates.
6. Infection.
7. Jaundice
8. Respiratory distress.
9. CNS (asphyxia and seizure) and metabolic problems (hypoglycaemia etc.)
10. Miscellaneous :
    a) Congenital malformations and common surgical problem.
       - External-meningomyelocel TEV/Cleft lip palate, CDR. Internal Esophageal atresia and fistula, diaphragmatic hernia, anal atresia, congenital heart disease.

    b) Birth trauma - Caput, cephalhematoma, brachial plexus injury ,fracture of clavicle & other long bones, intracranial haemorrhage.

CLINICAL:

1. History taking- relevant to making diagnosis and relating to antenatal, natal, neonatal and family history from parents.
2. Clinical examination to normal newborn :
   i) Anthropometry
   ii) Identification of common malformations and birth trauma
   iii) Neonatal reflexes
   iv) Vital signs -breathing, heart rate, perfusion, temp.recording.
   v) Some normal phenomena -physiological jaundice, erythema toxicum, Mongolian spot, epstein pearls, skin-hemangiomas, breast enlargement, withdrawal vaginal bleeding, non-retractile prepuce, subconjunctival haemorhage, caput, cephalhaematoma, watering of eyes, sleep pattern, maconium passage, transitional stool, vomiting, urine passage, etc.
   vi) Systemic examinations.
3. Clinical examination of LBW and sick newborn and their management.
   i) Gestational age assessment,
   ii) Abnormal signs e.g. cold stress, hypothermia, CGT, poor pulse, apnoea, chest retraction, grunting, sclerema, abnormal fontanelle, abnormal cry, poor activities, cyanosis, abnormal umbilical stump, abdominal distension, abnormal sensorium, seizures, jitteriness, neonatal jaundice .
   iii) Levels of neonatal care with elements of service.

4. Diagnosis and management of common neonatal problems :
   - i) Infection
   - ii) Jaundice
   - iii) Respiratory distress
   - iv) Convulsions
   - v) Bleeding
   - vi) Common malformations.
5. Breast feeding and lactation management :
6. Equipments demonstration-- (phototherapy unit, radiant warmer, incubator, oxygen hood, infantometer, pulse oxymeter etc.)

PRACTICAL :(with manikin) NEONATAL RESUSCITATION - one full session of demonstration, then assisted practice , & finally independent practice.

EVALUATION SCHEME

INTERNAL ASSESSMENT -. 20 MARKS

Continuous internal assessment :

Theory & oral	=	5 marks
Clinical / practical	=	5 marks
Total	=	10 marks

Final internal assessment :

Theory & oral	=	5 marks
Clinical / practical	=	5 marks
Total	=	10 marks

Thus, INTERNAL ASSESSMENT has two parts:

(i) Theory + oral = 5 (continuous I.A.) + 5 (final I.A.) = 10 marks.

(ii) Clinical / practical = 5 (continuous I.A.) + 5 (final I.A.) = 10 marks.

Marks obtained out of 10 marks in each category of (i) and (ii) above, are to be added separately with the same category of marks obtained in University examination.

FINAL UNIVERSITY EXAMINATION

THEORY : Total marks = 40.

1. One question on basic science & allied subject = 10 marks.
2. Short answer type (two out of three) = 5 x 2 = 10 marks
3. Short notes (three out of four) = 4 x 3 = 12 marks.
4. Short problem based question = 8 marks

ORAL : 10 marks

1. X- rays (Paediatric), other images (CT, USG, MRI) = 5 marks
2. ECG, charts, instruments = 5 marks

CLINICAL / PRACTICAL : 30 marks.

1. One long case = 20 marks
2. One short case = 10 marks

* In Theory + Oral & Clinical / Practical parts of examn. – approx. 25 % of the marks should be allotted to Neonatology part.

Thus, University Exam. -- Theory (40 marks) + Oral (10 marks)
Internal Assessment – Theory & Oral –10 marks

Total Theory + Oral = 60 marks.

University Exam. - Clinical / Practical = 30 marks
Internal assessment - Clinical / Practical = 10 marks

Total Clinical / Practical = 40 marks

GRAND TOTAL = 100 MARKS.

CONTINUOUS INTERNAL ASSESSMENT CARD

THEORY / ORAL

Semester	Lectures / seminars **held**	Lectures/ seminars **attended**	SEMESTER TESTS		
			FULL MARKS	MARKS OBTAINED	Signature of the teacher
5 th.					
6 th.					
7 th.					
8 th.					
TOTAL					

ATTENDANCE ----------% Marks = Conversion out of 5 =

CLINICAL / PRACTICAL

SEMESTER Clinical, Demonstration etc.	ITEMS	EVALUATION		
		Full Marks	Marks obtained	Signature of teacher
4 th. Semester Classes held = Classes attended =	1. Paediatric history taking & general examination. 2. Assessment of growth & development & nutrition			
% attendance	TOTAL			

6 th. semester	ITEMS	EVALUATION		
		Full marks	Marks secured	Signature of teacher
Classes held = Classes attended =	3.G.I.system including Liver diseases. 4.Genito-urinary system			
% attendance	TOTAL			

7th. semester	ITEMS	EVALUATION		
		Full marks	Marks obtained	Signature of teacher
Classes held = Classes attended =	5.Respiratory system 6.Cardiovascular system			
% attendance	TOTAL			

8 th. semester	ITEMS	EVALUATION		
		Full marks	Marks obtained	Signature of teacher
Classes held = Classes attended =	7. Haemopoietic system 8. Nervous system 9. Newborn 10.Miscellaneous			
% attendance				

Total marks in items = Total marks obtained = Conversion out of 5 =

Signature of Head of the Department.

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Model Question paper
(Theory)

PAEDIATRICS including Neonatology

Full Marks – 40. Time – 2 hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own as far as practicable.

1. Name the aetiopathogens for acute gastroenteritis in children.
   Give an outline of the effects of acute diarrhoea on water, electrolyte, and acid-base balance of the body.

   5 +5

2. Answer any two :-

   a) Outline differential diagnosis of Acute Flaccid Paralysis in a 2-yr. old child.
   b) Write the developmental milestones of a 10 month old baby.
   c) Briefly write the differential diagnosis of jaundice in a 6- day old neonate.

   5 +5

3. Write short notes on:-(any three)

   a) Sepsis screen in neonate.
   b) Measles vaccine
   c) Mantoux test
   d) Complications of nephrotic syndrome.

   4 x 3

3. A 2- year old child has presented with fever , severe pallor , hepatosplenomegaly and purpuric spots all over the body. Write the differential diagnosis. Suggest the investigations to reach the final diagnosis.

   5+3