

SYLLABUS

Syllabus gives an outline and summary of topics to be covered in the MD Paediatric Course.

In Competency Based Education, outcomes are required to be defined, taught, learnt, and assessed that determines competence at the end of the course. Defined Outcomes should focus on what is expected practically in the “real world” by the professional performing roles of the expert physician. This syllabus is focused on all age group of children from neonates to toddlers to children to adolescents as per existing practice. The syllabus thus stresses on “real world presentation of symptoms and signs” and is categorized under the following:

- A. Cognitive Domain
 - a. Basic Sciences
 - b. Approaches/Management of common symptoms/signs inclusive of analysis, interpretation, and application of investigations
 - c. Specific Topics classified as per traditional systems
- B. Psychomotor Domain
- C. Affective Domain
- D. Pedagogic and Research Skills

A) Predominant in Cognitive (Knowledge) Domain

a. Basic Sciences

- *Should be able to justify and apply in the practice of Paediatrics, an understanding of the fundamentals of basic sciences as listed below:*

1. Applied Anatomy

- 1.1. Embryogenesis of all organ systems
- 1.2. Central Nervous System
 - 1.2.1. Structures, Functions, Clinical considerations
 - 1.2.1.1. Cerebral Cortex
 - 1.2.1.2. Corticospinal tracts
 - 1.2.1.3. Extrapyramidal tracts
 - 1.2.1.4. Cerebellar connections
 - 1.2.1.5. Sensory tracts
 - 1.2.1.6. Ventricles
- 1.3. Spinal Cord, Peripheral Nerves
 - 1.3.1. Structures, Functions, Clinical considerations
 - 1.3.1.1. Lower Motor Neuron

- 1.4. Bladder and Bowel control
- 1.5. Vascular supply – Principal arteries and veins
- 1.6. Extremities, Abdomen, Thorax, Head and Neck
- 1.7. Fetal circulation

2. Physiological basis and Pathophysiology in Health and Disease

- 2.1. Physical Growth
- 2.2. Temperature regulation
- 2.3. Acid Base Balance
- 2.4. Fluid Balance
- 2.5. Hematopoiesis
- 2.6. Hemostasis
- 2.7. Electrolyte balance
- 2.8. Bone mineralization: Calcium-Phosphate balance
- 2.9. Puberty
- 2.10. Renal function
- 2.11. Hepatic function
 - 2.11.1. Bilirubin
 - 2.11.2. Drug metabolism
- 2.12. Respiratory function
- 2.13. Cardiac function
- 2.14. Gastrointestinal
- 2.15. Endocrine functions
- 2.16. Developmental Milestones
- 2.17. Adolescence
- 2.18. Placenta functions
- 2.19. Fetal to Infant Transitions (Cardio-respiratory)
- 2.20. Nutrition
- 2.21. Allergy

3. Biochemical basis of health and disease

- 3.1. Cell biology
 - 3.1.1. Cell cycle
 - 3.1.2. Cell signaling
- 3.2. CHO metabolism
- 3.3. Lipid metabolism
- 3.4. Protein metabolism
- 3.5. TCA Cycle
- 3.6. Hemoglobin
- 3.7. Clinical Chemistry
 - 3.7.1. Vitamins
 - 3.7.2. Minerals
- 3.8. Plasma Proteins
- 3.9. Coagulation Pathway

4. Genetics and Molecular Medicine

- 4.1. Human Genome
- 4.2. Nucleic acids

- 4.2.1. Protein synthesis
- 4.3. Recombinant DNA Technology
 - 4.3.1. Basic techniques
 - 4.3.2. Applications
- 4.4. Chromosomal abnormalities
 - 4.4.1. Pedigree charting
- 4.5. Prenatal/Postnatal diagnosis
- 4.6. Immunogenetics
 - 4.6.1. HLA

5. Clinical Microbiology

- 5.1. Virology
 - 5.1.1. Classifications
 - 5.1.2. Diagnostics
 - 5.1.3. Therapeutics
 - 5.1.4. Resistance
- 5.2. Bacteriology
 - 5.2.1. Classification
 - 5.2.2. Endo/Exotoxins
 - 5.2.3. Diagnostics
 - 5.2.4. Therapeutics
 - 5.2.5. Resistance
 - 5.2.6. Antibiotic Stewardship
- 5.3. Mycology
 - 5.3.1. Classification
 - 5.3.2. Diagnostics
 - 5.3.3. Therapeutics
 - 5.3.4. Resistance
- 5.4. Parasitology (Protozoology and Helminthology)
 - 5.4.1. Classification
 - 5.4.2. Diagnostics
 - 5.4.3. Therapeutics
 - 5.4.4. Resistance
- 5.5. Waste disposal, sterilization, disinfection
 - 5.5.1. Infection Control

6. Immunology

- 6.1. Immune response system
 - 6.1.1. Innate, Adaptive
 - 6.1.2. Cellular
 - 6.1.3. Antibodies
 - 6.1.4. Cytokines
 - 6.1.5. Clinical considerations
- 6.2. Immunoglobulins

- 6.2.1. Types
- 6.2.2. Clinical considerations
- 6.3. Complement
 - 6.3.1. Components
 - 6.3.2. Pathways
 - 6.3.3. Deficiencies
 - 6.3.4. Clinical considerations
- 6.4. Hypersensitivity reactions
- 6.5. Blood group Immunology
 - 6.5.1. ABO
 - 6.5.2. Rh
 - 6.5.3. Minor groups
- 6.6. Immunological assays
- 6.7. Science of Vaccinology
 - 6.7.1. Vaccines
 - 6.7.2. Classification
 - 6.7.3. Schedule
 - 6.7.4. Indications, contraindications
 - 6.7.5. Adverse effects
 - 6.7.6. Catch up doses
- 6.8. Immunodeficiency
 - 6.8.1. Primary
 - 6.8.2. Secondary
- 6.9. Autoimmune disease
 - 6.9.1. Basis
 - 6.9.2. Autoantibodies
 - 6.9.3. Clinical considerations
- 6.10. Transplant Immunology
 - 6.10.1. Stem cell
 - 6.10.2. GVH disease
 - 6.10.3. Solid organ transplant
- 6.11. Cancer Immunology

7. Pharmacology

- 7.1. Pharmacokinetics – common medications
- 7.2. Antimicrobials
- 7.3. Analgesia, sedation
- 7.4. Drug interactions
- 7.5. Adverse effects
- 7.6. Antidotes for poisons
- 7.7. Drug induced disease

8. Epidemiology

- 8.1. Rates
- 8.2. Principles of study design
- 8.3. Measures of effects
- 8.4. Association and causation
- 8.5. Diagnostic tests

9. Statistics

- 9.1. Distribution of data
- 9.2. Measures of Central tendency
- 9.3. Measures of dispersion
- 9.4. Probability distributions
- 9.5. Sampling
- 9.6. Statistical significance

10. Professionalism and Ethics

- 10.1. Professionalism
 - 10.1.1. Clinical competencies
 - 10.1.2. Effective communication
 - 10.1.3. Understanding of Ethics
 - 10.1.4. Accountability
 - 10.1.5. Altruism
 - 10.1.6. Excellence
 - 10.1.7. Humanism
- 10.2. Ethics
 - 10.2.1. Code of ethics
 - 10.2.2. Principles of Ethics
 - 10.2.3. Ethical workup
 - 10.2.4. Doctor-Patient relationship
 - 10.2.5. Confidentiality and privacy
 - 10.2.6. Doctor-Doctor relationship
- 10.3. Medico-legal essentials
 - 10.3.1. POSCO
 - 10.3.2. Certifications
 - 10.3.3. Documentation
 - 10.3.4. Informed consent
 - 10.3.5. MLC formalities

11. Pedagogy

- 11.1. How adults learn
- 11.2. Competencies and Specific Learning Objectives
- 11.3. Teaching Learning Methodologies
- 11.4. T-L Media including Power Point Presentations
- 11.5. Assessments- Formative and Summative

12. Management

- 12.1. Time Management
- 12.2. Conflict Management
- 12.3. Communication especially Listening

- 12.4. How to study – Lectures? Wards? Journal club?
- 12.5. Fundamentals of Counselling
- 12.6. Stress Management
- 12.7. Teamwork
- 12.8. Leadership

b. *Approaches/Management of common symptoms/signs inclusive of analysis, interpretation, and application of investigations (In every age group from newborn to adolescent)*

- ***Approaches (Clinical and Investigation) of the following clinical symptoms/ signs Management plans (Investigation, Treatment, Care, Counselling, Education, Follow Up, Rehabilitation Plans) of healthy children (section 1.1) and children with the following clinical symptoms/signs.***

1.1. Healthy Children

- 1.1.1. Healthy neonate
- 1.1.2. Healthy infant
- 1.1.3. Healthy child
- 1.1.4. Healthy adolescent

1.2. Cardiovascular Symptoms/Signs

- 1.2.1. Murmurs
- 1.2.2. Cyanosis
- 1.2.3. Syncope
- 1.2.4. Dizziness
- 1.2.5. Breathlessness
- 1.2.6. Palpitations
- 1.2.7. Chest Pain

1.3. Development (and Behavioral) Symptoms/ Signs

- 1.3.1. Normal development
- 1.3.2. Delayed milestones
- 1.3.3. Regression of milestones
- 1.3.4. Unusual behaviors
- 1.3.5. Poor scholastic performance
- 1.3.6. Deviations in sexuality
- 1.3.7. Dysmorphic features
- 1.3.8. Suicide attempt
- 1.3.9. Behavioral issues -disinterest, isolation, poor social interaction
- 1.3.10. Substance abuse
- 1.3.11. Abnormal eating behavior
- 1.3.12. Sleep disturbance
- 1.3.13. Breath holding spells
- 1.3.14. Multiple unexplained unrelated complaints
- 1.3.15. Technology dependence
- 1.3.16. Speech abnormalities

1.4. Dermatology

- 1.4.1. Neonatal skin lesions
- 1.4.2. Infantile skin lesions
- 1.4.3. Acquired skin rashes in childhood
- 1.4.4. Urticaria
- 1.4.5. Neurocutaneous presentations

1.5. Emergencies

- 1.5.1. Dehydration
- 1.5.2. Respiratory distress
- 1.5.3. Hypoxia
- 1.5.4. Shock
- 1.5.5. Incessant crying
- 1.5.6. Sick looking
- 1.5.7. Status epilepticus
- 1.5.8. Acute Severe Asthma
- 1.5.9. Trauma
- 1.5.10. Animal/human bite
- 1.5.11. Abuse
- 1.5.12. Cardio-pulmonary failure
- 1.5.13. Oliguria/Anuria
- 1.5.14. Raised intracranial pressure
- 1.5.15. Coma
- 1.5.16. Traumatic Brain Injury
- 1.5.17. Acute poisoning
- 1.5.18. Envenomation
- 1.5.19. Medico-legal conditions

1.6. Endocrine Symptoms

- 1.6.1. Abnormal stature
- 1.6.2. Hypoglycemia
- 1.6.3. Delayed puberty
- 1.6.4. Precocious puberty
- 1.6.5. Goiter

1.7. Gastrointestinal (and Hepatic) Symptoms

- 1.7.1. Tongue tie
- 1.7.2. Vomiting and regurgitation
- 1.7.3. Diarrhea – Acute
- 1.7.4. Diarrhea – Chronic, persistent, recurrent
- 1.7.5. Abdominal pain – Acute
- 1.7.6. Abdominal Pain - Recurrent
- 1.7.7. Constipation
- 1.7.8. Jaundice
- 1.7.9. Gastrointestinal bleed
- 1.7.10. Hepatomegaly
- 1.7.11. Splenomegaly
- 1.7.12. Hepatosplenomegaly
- 1.7.13. Encopresis
- 1.7.14. Abdominal distention

1.7.15. Abnormal Liver Function tests

1.8. Genital Symptoms

- 1.8.1. Atypical or ambiguous genitalia
- 1.8.2. Menstrual abnormalities
- 1.8.3. Injuries to genitalia
- 1.8.4. Foreskin, penile problems
- 1.8.5. Labial adhesions

1.9. Growth (and Nutrition related) Symptoms

- 1.9.1. Normal growth
- 1.9.2. Normal diet
- 1.9.3. Poor feeding in Infancy
- 1.9.4. Undernutrition
- 1.9.5. Failure to thrive
- 1.9.6. Overweight and obesity

1.10. Hematological Symptoms

- 1.10.1. Pallor
- 1.10.2. Bleeding manifestations
- 1.10.3. Lymphadenopathy
- 1.10.4. Thrombotic manifestations
- 1.10.5. Abnormal Hematological parameters including Pancytopenia

1.11. Infectious (and Immunological) Symptoms

- 1.11.1. Fever with focus
- 1.11.2. Fever without focus
- 1.11.3. Fever - persistent or recurrent
- 1.11.4. Exanthematous Fever
- 1.11.5. Recurrent infections
- 1.11.6. Hospital acquired infection
- 1.11.7. Vaccination Issues– complete, incomplete

1.12. Metabolic Symptoms

- 1.12.1. Acidosis – metabolic, respiratory
- 1.12.2. Alkalosis – metabolic, respiratory
- 1.12.3. Mixed Acid-Base disturbance
- 1.12.4. Dyselectrolytemia – Hypo/Hyponatremia, Hypo/Hyperkalemia, Hypo/hypercalcemia
- 1.12.5. Hyperammoniaemia
- 1.12.6. Hypoglycemia

1.13. Musculoskeletal Symptoms

- 1.13.1. Joint pains with or without swelling
- 1.13.2. Low back pain
- 1.13.3. Deformities of bone growth
- 1.13.4. Scoliosis

1.13.5. Growing Pains involving lower limbs

1.14. Neonatology

- 1.14.1. Term gestation
- 1.14.2. Prematurity
- 1.14.3. Low birth weight
- 1.14.4. Neonatal Jaundice
- 1.14.5. Ill/Sick
- 1.14.6. Neonatal seizures
- 1.14.7. Neonatal respiratory distress
- 1.14.8. Neonatal Apnea
- 1.14.9. Neonatal Shock
- 1.14.10. Metabolic/electrolyte disturbances – Glucose, Sodium, Potassium, Calcium, Bicarbonate, Lactate, Ammonia
- 1.14.11. Feed Intolerance
- 1.14.12. Spinal/Cranial abnormalities
- 1.14.13. Post NICU follow up
- 1.14.14. HIV-HepB-Syphilis exposure/infection
- 1.14.15. Inadequate breast milk
- 1.14.16. Antenatal detected renal abnormalities

1.15. Neurological Symptoms

- 1.15.1. Seizures
- 1.15.2. Altered sensorium/Coma
- 1.15.3. Motor weakness
- 1.15.4. Incessant Irritability
- 1.15.5. Headache
- 1.15.6. Abnormal Head circumference
- 1.15.7. Sensory abnormalities
- 1.15.8. Abnormal gait
- 1.15.9. Ataxia
- 1.15.10. Facial weakness
- 1.15.11. Involuntary movements

1.16. Ophthalmological Symptoms

- 1.16.1. Red eye
- 1.16.2. Watering of eye
- 1.16.3. Discharge from eye
- 1.16.4. Poor vision
- 1.16.5. White reflex
- 1.16.6. Deviation of eyes

1.17. Otorhino-laryngology Symptoms

- 1.17.1. Nasal discharge, Nasal congestion, Sneezing
- 1.17.2. Sore Throat
- 1.17.3. Ear Pain/discharge
- 1.17.4. Tonsillar hypertrophy
- 1.17.5. Epistaxis
- 1.17.6. Impaired hearing

1.18. Renal and Urological Symptoms

- 1.18.1. Enuresis
- 1.18.2. Dysuria
- 1.18.3. Proteinuria
- 1.18.4. Hematuria
- 1.18.5. Edema
- 1.18.6. Hypertension
- 1.18.7. Dyselectrolytemia
- 1.18.8. Polyuria
- 1.18.9. Scrotal and Inguinal swelling
- 1.18.10. Oliguria/Anuria

1.19. Respiratory Symptoms

- 1.19.1. Cough
- 1.19.2. Breathlessness
- 1.19.3. Noisy breathing - snoring, stridor, wheeze
- 1.19.4. Hemoptysis

1.20. Community Situations

- 1.20.1. Vaccination camps
- 1.20.2. School Health Checkups
- 1.20.3. Outbreaks of childhood diseases

1.21 Analysis, interpretation, and application of Investigations

- 1.21.1. Radiology X-rays (Chest AP/PA/Lateral, abdomen, spine, extremities)
- 1.21.2. Contrast X-rays (Micturating cystourethrogram)
- 1.21.3. Ultrasound (Lung: Consolidation, Left Heart failure, effusion; Circulation: Intravascular Volume; Neonatal Brain: Hydrocephalus, Intracranial Collections; Central veins: Patency for US guided central lines; Lymphadenopathy: For US guided FNAC aspirations)
- 1.21.4. CT scan with/without contrast (Brain: Cerebral edema, Midline shift, Meningitis, Encephalitis, ADEM, Hemorrhage, Infarction, SOLS, Hydrocephalus)
- 1.21.5. MRI scan (Brain: Gross White vs Grey matter degeneration)
- 1.21.6. HIDA Scan

1.22. Microbiology

- 1.22.1. Grams stain of CSF, Pus, Peritoneal fluid
- 1.22.2. Ziehl Neilson Stain of Sputum, Pus
- 1.22.3. Hanging drop for motile cholera
- 1.22.4. PCR reports for infectious disease diagnosis
- 1.22.5. Culture and sensitivity reports of body fluids

1.23. Pathology

- 1.23.1. Pathology reports of human tissue

1.24. Routine labs

- 1.24.1. Hematology reports of Blood counts, peripheral smear, Bleeding and Coagulation parameters, basic immunology
- 1.24.2. Urine routine analysis

1.25. Biochemical

- 1.25.1. Biochemical routine (Electrolytes, Calcium-Phosphate, Renal, Liver profiles, Arterial/venous Blood Gases)
- 1.25.2. Inborn error of metabolism newborn screening reports
- 1.25.3. Endocrine (Glucose related, Thyroid related, Hormonal assays, Lipid profiles)

1.26. Electrophysiological Studies

- 1.26.1. Electrocardiogram

1.27. Lung Function Tests

- 1.27.1. Spirometry

C. *Specific Topics*

Understanding the definition, epidemiology, etiopathogenesis, clinical presentation, investigations, complications, differential diagnosis, treatment, prognosis, prevention, follow up and rehabilitation, if required, of the following, but not limited to:

1. Overview

- 1.1. History of Paediatrics
- 1.2. State of Health of Children – Global, Regional and India
- 1.3. Evidence-based Care in Pediatrics
- 1.4. WHO's Sustainable Development Goals
- 1.5. National Programs relevant to Child Health
- 1.6. Ethics in the Care of Children
- 1.7. Medico-legal aspects relevant to Paediatrics including:
Documentation (Initial History/Examination/Differential Sheet, Progress (SOAP, Problem Oriented), Death and other Certification, Informed Consent, Wound Certificates, POSCO, Financial Receipts, Outpatient/In Patient Registers)

2. Genetics

- 2.1. Inheritance Patterns
- 2.2. Genetic Counseling
- 2.3. Prevention of Genetic Disorders
Management of Genetic Disorders

3. Metabolic Disorders

- 3.1. Approach to Inborn Errors of Metabolism
- 3.2. Approach to Hypoglycemia
- 3.3. Defects of Amino Acid Metabolism
 - 3.3.1. Phenylalanine
 - 3.3.2. Urea Cycle Disorders
- 3.4. Defects of Lipid Metabolism

- 3.4.1. Organic Acidemias
 - 3.4.2. Fatty Acid Oxidation
 - 3.4.3. Mitochondrial Disorders
 - 3.4.4. Peroxisomal Disorders
 - 3.4.5. Lysosomal Storage Disorders
 - 3.4.6. Gaucher Disease
 - 3.4.7. Niemann-Pick Disease
 - 3.5. Defects of Carbohydrate Metabolism
 - 3.5.1. Glycogen Storage Disease
 - 3.6. GM1 and GM2 Gangliosidosis
 - 3.7. Mucopolysaccharidoses
 - 3.8. Porphyrias
 - 3.9. Newborn Screening
4. Immunology
- 4.1. Laboratory Diagnosis of Immune-mediated Diseases
 - 4.2. Primary Immunodeficiency Disorders
 - 4.2.1. Antibodies
 - 4.2.2. Cellular
 - 4.2.3. Multiple types
 - 4.2.3.1. SCID (Severe combined immunodeficiency)
 - 4.3. Phagocytic system
 - 4.3.1. Neutrophils
 - 4.3.2. Leukopenia
 - 4.3.3. Leucocytosis
 - 4.4. Complement pathway
 - 4.4.1. Complement deficiencies
 - 4.5. Intravenous Immunoglobulin
 - 4.6. Multisystem Inflammatory Syndrome of Childhood
5. Allergy
- 5.1. Basis of Allergy
 - 5.2. Allergic rhinitis
 - 5.3. Atopic dermatitis
 - 5.4. Urticaria, Angioedema
 - 5.5. Anaphylaxis
 - 5.6. Asthma
 - 5.7. Serum sickness
 - 5.8. Drug allergies
 - 5.9. Food allergies

6. Fluid and Electrolytes
 - 6.1. Body Fluids – Composition, Osmolality
 - 6.2. Fluid Therapy - Maintenance, Replacement
 - 6.3. Sodium
 - 6.4. Potassium
 - 6.5. Calcium
 - 6.6. Magnesium
 - 6.7. Phosphorus
 - 6.8. Acid-base Abnormalities

7. Therapeutics
 - 7.1. Principles of Drug Therapy
 - 7.2. Administration of Medications
 - 7.3. Pre-anesthesia Checkup
 - 7.4. Procedural sedation
 - 7.5. Analgesia

8. Acutely Ill
 - 8.1. Assessment and Triage
 - 8.2. Cardiopulmonary Resuscitation
 - 8.2.1. Basic Life Support
 - 8.2.2. Pediatric Advanced Life Support
 - 8.3. Minor Injuries – Abrasions, Lacerations

9. Pediatric Intensive Care
 - 9.1. Shock
 - 9.2. Respiratory Failure
 - 9.3. Pediatric Acute Respiratory Distress Syndrome
 - 9.4. Ventilation – Non-Invasive and Invasive
 - 9.5. Sedation, Analgesia and Paralysis
 - 9.6. Nutrition in Intensive Care
 - 9.7. ECMO
 - 9.8. Concepts of Futility, Do not Resuscitate, Withdrawal of Care
 - 9.9. Palliative Care
 - 9.10. Death

10. Toxins
 - 10.1. Clinical Approach to a Poisoned Child
 - 10.2. Poisonings by Common Drugs
 - 10.3. Hydrocarbon Poisoning
 - 10.4. Poisoning in the Household
 - 10.5. Corrosive Poisoning
 - 10.6. Snakebite
 - 10.7. Insect Stings including Bee, Wasp, Scorpion Sting

11. Injuries
 - 11.1. Poly Trauma: Stabilization, Triage, and Transport
 - 11.2. Drowning/Submersion Injuries
 - 11.3. Animal-related Injuries
 - 11.4. Burn Injuries
 - 11.5. Cold Injuries

12. Neonatology
 - 12.1. Neonatal Mortality and Morbidities
 - 12.2. Fetal Physiology and Growth
 - 12.3. Maternal Influences on Fetus
 - 12.4. Transition of the Fetus to Newborn
 - 12.5. Intrauterine diagnosis and management of Fetal disease
 - 12.6. Organization of Neonatal Care

13. Normal Newborn
 - 13.1. Delivery Room Care of the Newborn
 - 13.2. Newborn Resuscitation
 - 13.3. Assessment of the Newborn
 - 13.4. Care of the Normal Newborn
 - 13.5. Maintenance of Temperature
 - 13.6. Breastfeeding and Lactation Management

14. Disorders of Weight and Gestation in Neonates
 - 14.1. Low Birthweight
 - 14.1.1. Feeding of Low-birth weight
 - 14.1.2. Intrauterine Growth Restriction
 - 14.2. Prematurity
 - 14.3. Post term
 - 14.4. Large for Gestational Age

15. High-risk Newborn
 - 15.1. Recognition of High-risk neonate
 - 15.2. Multiple-gestational pregnancies
 - 15.3. Birth Injuries
 - 15.4. Perinatal Asphyxia
 - 15.5. Jaundice in the newborn
 - 15.6. Infant of Diabetic Mother
 - 15.7. Neonatal Hypoglycemia
 - 15.8. Anemia and Polycythemia
 - 15.9. The Bleeding Neonate
 - 15.10. Hemorrhagic Disease of the
 - 15.11. Thrombocytopenia in the Newborn
 - 15.12. Cyanosis in the Newborn
 - 15.13. Necrotizing Enterocolitis
 - 15.14. Retinopathy of Prematurity
 - 15.15. Dyselectrolytemia, Hypocalcemia, Hypermagnesemia

- 15.16. Neonatal Transport
- 15.17. Follow-up of the High-risk Neonate
- 16. Neonatal Infections
 - 16.1. Neonatal Sepsis – Early and Late
 - 16.2. Superficial Infections in Neonates
 - 16.3. Neonatal Meningitis
 - 16.4. Deep-seated Infections in Neonates
 - 16.5. Neonatal Tetanus
 - 16.6. Intrauterine Infections
- 17. Neonatal Neurological Problems
 - 17.1. Seizures in the Neonates
 - 17.2. Hypoxic Ischemic Encephalopathy
 - 17.3. Intra-cranial/ventricular Hemorrhage
 - 17.4. Peripheral nerve injuries
- 18. Neonatal Respiratory Problems
 - 18.1. Approach to a Neonate with Respiratory Distress
 - 18.2. Neonatal Apnea Neonatal Ventilation
 - 18.3. Hyaline Membrane Disease
 - 18.4. Transient Tachypnea of the Newborn
 - 18.5. Meconium Aspiration Syndrome
 - 18.6. Pulmonary Air Leaks in the Newborn
 - 18.7. Persistent Pulmonary Hypertension (PPHN)
 - 18.8. Pulmonary Hemorrhage
 - 18.9. Bronchopulmonary Dysplasia
 - 18.10. Extra pulmonary air leaks
- 19. Neonatal Cardiac Problems
 - 19.1. Neonate with a murmur
 - 19.2. Patent ductus arteriosus
 - 19.3. Ductus dependent shunts
- 20. Hematological disorders in Neonates
 - 20.1. Anemia in Neonate
 - 20.2. Hemolytic Disease
 - 20.3. Polycythemia
 - 20.4. Hemorrhagic Disease
- 21. Congenital Malformations
 - 21.1. Esophageal Atresia and Tracheoesophageal Fistula
 - 21.2. Diaphragmatic Hernia and Eventration
 - 21.3. Gastrointestinal and Abdominal Malformation
 - 21.4. Genitourinary Malformations
 - 21.5. CNS Malformations
 - 21.6. Single Umbilical Artery, Polydactyly, Skin Tags
- 22. Growth: Normal and Abnormal

- 22.1. Normal Growth
 - 22.2. Factors Affecting Growth
 - 22.3. Assessment of Physical Growth
 - 22.4. Disorders of Growth (Failure to Thrive, Overweight and Obesity)
 - 22.5. Abnormalities of Stature
23. Development and Developmental Delay
- 23.1. Theories of Development and Behaviour
 - 23.2. Laws of Development
 - 23.3. Factors Affecting Development
 - 23.4. Normal Development
 - 23.5. Screening of Development and Behaviour
 - 23.6. Approach to Diagnosis of Developmental Delay: Developmental Screening and Surveillance
 - 23.7. Global Developmental Delay
 - 23.8. Specific Developmental Delays
 - 23.9. Cerebral Palsy
 - 23.10. Intellectual Disability
 - 23.11. Learning disabilities
 - 23.12. Hearing Impairment
 - 23.13. Mental Retardation
24. Behavior and Learning
- 24.1. Evaluation of Mental Well-Being
 - 24.2. Psychosocial assessments
 - 24.3. Technology Dependence
 - 24.4. Bullying
 - 24.5. Common Behavioral Problems
 - 24.6. Tantrums and Breath-Holding
 - 24.7. Enuresis and Encopresis
 - 24.8. Sleep Medicine
 - 24.9. Common Speech, Language, and Communication Disorders
 - 24.10. Learning Disorders
 - 24.11. Dyslexia
 - 24.12. Attention-Deficit Hyperactivity Disorder
 - 24.13. Oppositional Defiant and Conduct Disorders
 - 24.14. Autism Spectrum Disorder
 - 24.15. Rett Syndrome
 - 24.16. Anorexia Nervosa and Bulimia
 - 24.17. Anxiety Disorders
 - 24.18. Suicide
 - 24.19. Management of Psychological Illness
25. Nutrition and Nutritional Disorders
- 25.1. Nutritional Requirements
 - 25.2. Nutritive Values of Indian Foods
 - 25.3. Infant and Young Child Feeding
 - 25.4. Adolescent Feeding
 - 25.5. Feeding during Childhood and Food Allergy
 - 25.6. Undernutrition: Prevalence and Etiology

- 25.7. Pathophysiology of Undernutrition
- 25.8. Malnutrition – Moderate and Severe Acute
- 25.9. Vitamin A
- 25.10. Vitamin B Complex
- 25.11. Vitamin C and Scurvy
- 25.12. Vitamin D, Nutritional Rickets, and Hypervitaminosis D
- 25.13. Iodine Deficiency Disorders
- 25.14. Zinc in Child Health
- 25.15. Trace Elements in Nutrition and Health
- 25.16. Fluorosis
- 25.17. Nutritional Rehabilitation including Diet Prescription
- 25.18. Enteral and Parenteral Nutrition
- 25.19. National Nutrition Programs

26. Immunization

- 26.1. Basic Concepts of Vaccination
- 26.2. Vaccine Administration Practices
- 26.3. Scheduling of Vaccines
- 26.4. Vaccine Storage and Cold Chain
- 26.5. Adverse Events following Immunization
- 26.6. BCG Vaccine
- 26.7. Poliovirus Vaccines
- 26.8. Diphtheria, Tetanus, and Pertussis Vaccines
- 26.9. Hepatitis B Vaccine
- 26.10. Haemophilus Influenzae Type B (HIB) Vaccines
- 26.11. Measles Vaccine
- 26.12. Rubella Vaccines
- 26.13. Mumps Vaccine
- 26.14. Typhoid Fever Vaccines
- 26.15. Japanese Encephalitis Vaccine
- 26.16. Rabies Vaccines
- 26.17. Pneumococcal Vaccines
- 26.18. Rotavirus Vaccines
- 26.19. Cholera Vaccines
- 26.20. Varicella Vaccine
- 26.21. Hepatitis A Vaccine
- 26.22. Meningococcal Vaccine
- 26.23. Seasonal and Pandemic Influenza Vaccines
- 26.24. Human Papillomavirus Vaccines
- 26.25. Dengue Vaccines
- 26.26. Yellow Fever Vaccine
- 26.27. Combination Vaccines
- 26.28. Covid-19 Vaccines
- 26.29. Immunization in Special Situations

27. Adolescence

- 27.1. Gender, Sexual Identity and Sexuality
- 27.2. Psychosocial Development

- 28. Health Issues in Adolescence
 - 28.1. Factors Influencing Adolescent Health
 - 28.2. Adolescent Nutrition
 - 28.3. Mental Health
 - 28.4. Injuries, Violence, and Suicide
 - 28.5. Menstrual Disorders
 - 28.6. Polycystic Ovary Syndrome
 - 28.7. Teenage Pregnancy
 - 28.8. Sexually Transmitted Infections
 - 28.9. Substance Abuse
 - 28.9.1. Alcohol
 - 28.9.2. Tobacco
 - 28.9.3. Other substances

- 29. Care of the Adolescents
 - 29.1. Adolescent Counseling
 - 29.2. Promoting Health of Adolescents
 - 29.3. Adolescent Friendly Health Services

- 30. Infectious Diseases
 - 30.1. Epidemiology of Infectious Diseases
 - 30.2. Laboratory Diagnosis of Infection
 - 30.3. Microbiome and Child Health
 - 30.4. Antimicrobial Resistance
 - 30.5. Infection Control and Prevention

- 31. Fever
 - 31.1. Fever: General Principles of Management
 - 31.2. Fever with/without focus
 - 31.3. Fever of Unknown Origin
 - 31.4. Infections in Immunocompromised conditions

- 32. Bacterial Infections
 - 32.1. Natural History of Bacterial Infection
 - 32.2. Principles of Antibiotic Therapy
 - 32.3. Gram Positive Infections
 - 32.3.1. Streptococcal Infections
 - 32.3.1.1. Pneumococcal Infections
 - 32.3.1.2. Streptococcal Group A
 - 32.3.1.3. Streptococcal Group B
 - 32.3.1.4. Streptococcal Non A, Non B
 - 32.3.2. Staphylococcal Infections
 - 32.3.3. Enterococcus
 - 32.3.4. Diphtheria
 - 32.3.5. Nocardiosis
 - 32.3.6. *Listeria monocytogenes*
 - 32.3.7. Actinomycosis

32.4. Gram Negative Infections

32.4.1. Haemophilus influenzae

32.4.2. Neisseria

32.4.3. Pseudomonas

32.4.4. Pertussis

32.4.5. Salmonella

32.4.5.1. Nontyphoidal Salmonellosis

32.4.5.2. Enteric Fever

32.4.6. Shigella

32.4.7. Escherichia coli

32.4.8. Cholera

32.4.9. Campylobacter

32.4.10. Yersinia

32.4.11. Aeromonas

32.4.12. Brucella

32.4.13. Moraxella catarrhalis

32.4.14. Helicobacter pylori

32.5. Anaerobic Bacterial

32.5.1. Clostridium tetani

32.5.2. Clostridium botulinum

32.5.3. Clostridium difficile

32.6. Spirochetal Infections

32.6.1. Treponema pallidum

32.6.2. Leptospirosis

32.6.3. Borrelia

32.6.3.1. Lyme

32.6.3.2. Relapsing Fever

32.7. Mycoplasma

32.7.1. Mycoplasma pneumoniae

32.8. Chlamydia

32.8.1. Chlamydia pneumoniae

32.8.2. Chlamydia trachomatis

32.8.3. Psittacosis

32.9. Rickettsia

32.9.1. Spotted Fever

32.9.2. Scrub Typhus

32.9.3. Typhus

32.9.4. Ehrlichiosis

32.9.5. Q fever

33. Mycobacterial Infections

33.1. Childhood Tuberculosis: Epidemiology, Pathogenesis, Clinical Features, and Prevention

- 33.2. Diagnostic Tools for Tuberculosis in Children
- 33.3. Antitubercular Drugs and RNTCP
- 33.4. Guidelines for Childhood Tuberculosis
- 33.5. Drug Resistant Tuberculosis
- 33.6. Atypical Mycobacterial Infections
- 33.7. Leprosy

34. Viral Diseases

- 34.1. Epidemiology of Viral Infections
- 34.2. Principles of Antiviral Drugs
- 34.3. Measles
- 34.4. Mumps
- 34.5. Rubella
- 34.6. Roseola
- 34.7. Epstein-Barr
- 34.8. Cytomegalovirus
- 34.9. Influenza
- 34.10. Parainfluenza
- 34.11. Respiratory syncytial virus
- 34.12. Human metapneumovirus
- 34.13. Rhinovirus
- 34.14. Adenovirus
- 34.15. Coronavirus
- 34.16. Rotavirus
- 34.17. Human Papillomavirus
- 34.18. Arbovirus
 - 34.18.1. Japanese Encephalitis
 - 34.18.2. Other Encephalitis
 - 34.18.3. Tick-borne Encephalitis
 - 34.18.4. Chikungunya
 - 34.18.5. Zika
- 34.19. Varicella-zoster
- 34.20. Herpes Simplex
- 34.21. Rabies
- 34.22. Parvovirus Infections
- 34.23. NonpolioEnteroviral Infections
- 34.24. Poliomyelitis
- 34.25. Viral Hepatitis
- 34.26. HIV
- 34.27. Human Lymphotropic 1 and 2
- 34.28. Dengue
- 34.29. Yellow Fever
- 34.30. Ebola, Hanta
- 34.31. Rabies
- 34.32. Viral Hemorrhagic Fevers
- 34.33. Covid-19

35. Protozoal Disease

- 35.1. Epidemiology of Parasitic Infections
- 35.2. Principles of Antiparasitic therapy
- 35.3. Malaria
- 35.4. Leishmaniasis
- 35.5. Giardiasis
- 35.6. Amebiasis
- 35.7. Filariasis
- 35.8. Cryptosporidiosis
- 35.9. Toxoplasmosis
- 35.10. Helminthiasis
 - 35.10.1. Hookworm Infestation
 - 35.10.2. Ascariasis
 - 35.10.3. Trichuriasis
 - 35.10.4. Enterobiasis
 - 35.10.5. Strongyloidiasis
 - 35.10.6. Tapeworm Diseases
 - 35.10.7. Cysticercosis
 - 35.10.8. Trichinosis
 - 35.10.9. Toxocara
 - 35.10.10. Intestinal, Liver, and Lung Flukes
 - 35.10.11. Hydatid Disease: Echinococcosis
 - 35.10.12. Schistosomiasis

36. Fungal Infections

- 36.1. Fungi
- 36.2. Principles of Antifungal Therapy
- 36.3. Candidiasis
- 36.4. Aspergillosis
- 36.5. Malassezia
- 36.6. Cryptococcosis
- 36.7. Coccidioidomycosis
- 36.8. Blastomycosis
- 36.9. Histoplasmosis
- 36.10. Mucormycosis
- 36.11. Pneumocystis Jirovecii

37. Diarrheal Illnesses

- 37.1. Acute Watery Diarrhea
- 37.2. Dysentery
- 37.3. Cholera
- 37.4. Persistent Diarrhea
- 37.5. Chronic *Diarrhea*
- 37.6. Antibiotic Associated Diarrhea

38. Gastrointestinal Disorders

- 38.1. Anatomy and Physiology
- 38.2. Common Symptoms of Gastrointestinal Diseases
- 38.3. Oral Cavity disorders

- 38.3.1. Malocclusion
- 38.3.2. Dental Caries
- 38.3.3. Periodontal disease
- 38.3.4. Common lesions of soft palate
- 38.3.5. Cleft Lip and Cleft Palate
- 38.3.6. Diseases of Salivary Glands
- 38.4. Esophageal atresia, Tracheoesophageal Fistula
- 38.5. Disorders of Esophageal Motility
- 38.6. Gastroesophageal Reflux
- 38.7. Esophagitis
- 38.8. Hiatal Hernia
- 38.9. Ingestions
 - 38.9.1. Foreign Body
 - 38.9.2. Caustic
- 38.10. Infantile Hypertrophic Pyloric Stenosis, Volvulus, Duplication
- 38.11. Duodenal Obstruction
- 38.12. Malrotation
- 38.13. Intestinal duplication
- 38.14. Meckel Diverticulum
- 38.15. Chronic obstructive pseudoobstruction
- 38.16. Chronic Abdominal Pain—Functional Abdominal Pain
- 38.17. Acid Peptic Disease
- 38.18. Pancreas – Function, Tests
 - 38.18.1. Pancreatitis
 - 38.18.2. Treatment of Pancreatic insufficiency
- 38.19. Constipation
- 38.20. Hirschsprung Disease
- 38.21. Malabsorption Disorders
 - 38.21.1. Assessment
 - 38.21.2. Celiac
 - 38.21.3. Enzyme Deficiencies
- 38.22. Inflammatory Bowel Disease
- 38.23. Intestinal Obstruction
- 38.24. Intussusception
- 38.25. Appendicitis
- 38.26. Abdominal Tuberculosis
- 38.27. Ascites
- 38.28. Umbilical Hernia
- 38.29. Inguinal Hernia
- 38.30. Testicular Torsion
- 38.31. Anorectal Disorders
 - 38.31.1. Anal Fissure
 - 38.31.2. Hemorrhoids
 - 38.31.3. Prolapse

- 38.31.4. Pilonidal sinus
- 38.31.5. Anorectal malformations

38.32. Cyclic vomiting

39. Hepatobiliary Diseases

- 39.1. Liver Function Tests
- 39.2. Neonatal Cholestasis
- 39.3. Portal Hypertension
- 39.4. Gastrointestinal Bleeding
- 39.5. Metabolic Liver disease

39.5.1. Wilson

39.5.2. Others

- 39.6. Liver Abscess
- 39.7. Viral Hepatitis
- 39.8. Chronic Liver Disease
- 39.9. Acute Liver Failure
- 39.10. Autoimmune Hepatitis
- 39.11. Drug induced Hepatitis
- 39.12. Cystic disease of Liver
- 39.13. Liver transplantation
- 39.14. Liver Tumors
- 39.15. Peritoneum

39.15.1. Ascites

39.15.2. Peritonitis

39.16. Epigastric hernia

40. Disorders of Hematopoietic System

- 40.1. The Hematopoietic System
- 40.2. Anemia: Etiology and Classification
- 40.3. Inadequate Production
 - 40.3.1. Physiological anemia of infancy
 - 40.3.2. Congenital Bone Marrow Failure
 - 40.3.3. Aplastic Anemia
 - 40.3.4. Iron Deficiency Anemia
 - 40.3.5. Megaloblastic Anemia
 - 40.3.6. Anemia of Chronic disease
 - 40.3.7. Congenital dyserythropoietic anemia

40.4. Hemolytic Anemia

40.4.1. Hemoglobinopathies

40.4.1.1. Sickle Cell Disease

40.4.1.2. Thalassemia

40.4.2. RBC Membrane Defects

40.4.3. Red Blood Cell Enzyme Defects

40.4.4. Immune Hemolytic Anemia

- 40.5. Polycythemia
- 40.6. Hemorrhagic and Thrombotic disorders
 - 40.6.1. Coagulation Disorders
 - 40.6.2. Hemophilia
 - 40.6.3. Other Clotting Factor Deficiencies
 - 40.6.4. Von Willebrand Disease
 - 40.6.5. Thrombotic disorders
 - 40.6.6. Disseminated Intravascular Coagulation
- 40.7. Platelet
 - 40.7.1. Immune Thrombocytopenia
 - 40.7.2. Hemolytic Uremic Syndrome
 - 40.7.3. Thrombotic Thrombocytopenic Purpura
 - 40.7.4. Kasabach- Merritt Syndrome
 - 40.7.5. Platelet Function Defects
- 40.8. Blood Component Therapy
- 40.9. Spleen
 - 40.9.1. Splenomegaly
 - 40.9.2. Splenectomy
- 40.10. Lymphatics
 - 40.10.1. Lymphadenopathy
- 41. Respiratory Diseases
 - 41.1. Congenital Malformations of the Upper Respiratory Tract
 - 41.2. Epistaxis
 - 41.3. Nasal Polyps
 - 41.4. Allergic Rhinitis
 - 41.5. Otitis Media
 - 41.6. Common Cold
 - 41.7. Acute Pharyngitis
 - 41.8. Retropharyngeal abscess
 - 41.9. Sinusitis
 - 41.10. Tonsils and Adenoids
 - 41.11. Community Acquired Pneumonia
 - 41.12. Pleural effusion, Empyema
 - 41.13. Bronchiectasis
 - 41.14. Pneumothorax, Pneumomediastinum, Pyopneumothorax
 - 41.15. Skeletal deformities of Chest
 - 41.16. Obstructive Sleep Apnea
 - 41.17. Congenital Malformations of the Respiratory Tract
 - 41.18. Congenital disorders of Lung
 - 41.19. Croup, Epiglottitis, Laryngitis, Tracheitis
 - 41.20. Bronchiolitis
 - 41.21. Alpha-1 Antitrypsin Deficiency

- 41.22. Aspiration Syndromes
- 41.23. Preschool Wheeze and Bronchial Asthma
- 41.24. Aerosol Therapy
- 41.25. Pneumonia
- 41.26. Parapneumonic Effusion and Empyema
- 41.27. Pneumothorax and Air Leaks
- 41.28. Persistent and Recurrent Pneumonia
- 41.29. Interstitial Lung Disease
- 41.30. Hemoptysis and Alveolar Bleeds
- 41.31. Primary Ciliary Dyskinesia
- 41.32. Cystic Fibrosis
- 41.33. Bronchiectasis
- 41.34. Lung Abscess
- 41.35. Foreign Body Aspiration
- 41.36. Central Hypoventilation
- 41.37. Acute Respiratory Distress Syndrome
- 41.38. SIDS

42. Cardiovascular Disorders

- 42.1. Genetic Basis of Heart Diseases
- 42.2. Chest Skiagram in Heart Disease
- 42.3. Electrocardiogram
- 42.4. Echocardiography
- 42.5. Congestive Heart Failure
- 42.6. Cardiac Malposition
- 42.7. Acyanotic Congenital Heart Disease, Left to Right shunt
 - 42.7.1. Ventricular Septal Defects
 - 42.7.2. Patent Ductus Arteriosus
 - 42.7.3. Atrial Septal Defects
 - 42.7.4. PAPVC
 - 42.7.5. Atrioventricular Septal Defects
- 42.8. Acyanotic Congenital Heart Disease, Obstructive
 - 42.8.1. Pulmonary Valve Stenosis
 - 42.8.2. Coarctation of Aorta
 - 42.8.3. Pulmonary Venous Hypertension
- 42.9. Acyanotic Congenital Heart Disease, Regurgitation
 - 42.9.1. Mitral Valve Prolapse
- 42.10. Cyanotic Congenital Heart Disease, reduced Pulmonary flow
 - 42.10.1. Tetralogy of Fallot and Variants
 - 42.10.2. Tricuspid Atresia
 - 42.10.3. Double outlet Right Ventricle
 - 42.10.4. Ebstein Anomaly
- 42.11. Cyanotic Congenital Heart Disease, Increased Pulmonary flow

- 42.11.1. Transposition of Great Arteries and variants
- 42.11.2. Truncus Arteriosus
- 42.11.3. TAPVC
- 42.11.4. Hypoplastic Left Heart Syndrome
- 42.12. Others
 - 42.12.1. Anomalies of the Aortic Arch
 - 42.12.2. Pulmonary Arterial Hypertension
- 42.13. Acquired Heart Disease
 - 42.13.1. Acute Rheumatic Fever
 - 42.13.2. Rheumatic Heart Disease
 - 42.13.3. Infective Endocarditis
 - 42.13.4. Myocardial Diseases: Myocarditis and Cardiomyopathies
 - 42.13.5. Diseases of the Pericardium
 - 42.13.6. Kawasaki disease
- 42.14. Cardiac Arrhythmias
- 42.15. Cardiac Emergencies
- 42.16. Heart Failure
- 42.17. Systemic Hypertension
- 43. Disorders of the Kidney and Urinary Tract
 - 43.1. Investigations for Kidneys and Urinary Tract
 - 43.2. Congenital Anomalies of Kidneys and Urinary Tract
 - 43.2.1. Cystic Kidney Diseases
 - 43.3. Glomerular Disease
 - 43.3.1. Glomerulonephritis
 - 43.3.1.1. Acute Poststreptococcal Glomerulonephritis
 - 43.3.1.2. Membranous Nephropathy
 - 43.3.1.3. Membranoproliferative Glomerulonephritis
 - 43.3.1.4. Rapidly Progressive Glomerulonephritis
 - 43.3.2. IgA nephropathy
 - 43.3.3. Alport syndrome
 - 43.4. Systemic Vasculitis and Lupus Nephritis
 - 43.5. Goodpasture Disease
 - 43.6. Henoch-Schönlein Purpura Nephritis
 - 43.7. Hemolytic Uremic Syndrome
 - 43.8. Toxic Nephropathy
 - 43.9. Tubulointerstitial Disease
 - 43.9.1. Pyelonephritis
 - 43.9.2. Tubulointerstitial nephritis
 - 43.9.3. Papillary necrosis
 - 43.9.4. Acute Tubular Necrosis
 - 43.10. Vascular Disease

- 43.10.1. Renal vein Thrombosis
- 43.10.2. Hypercalciuria
- 43.10.3. Nephrocalcinosis

43.11. Infections

- 43.11.1. Urinary Tract Infection
- 43.11.2. Cystitis
- 43.11.3. Urethritis
- 43.11.4. Hemorrhagic cystitis
- 43.11.5. Pyelonephritis

43.12. Proteinuria

- 43.12.1. Transient, Orthostatic
- 43.12.2. Nephrotic Syndrome

43.13. Tubular Disorders

- 43.13.1. Renal Tubular Disorders
- 43.13.2. Nephrogenic Diabetes Insipidus
- 43.13.3. Bartter Syndrome
- 43.13.4. Gitelman Syndrome

43.14. Renal Failure

- 43.14.1. Acute Kidney Injury
- 43.14.2. Chronic Kidney disease
- 43.14.3. End-stage renal disease
- 43.14.4. Renal Replacement Therapy
- 43.14.5. Renal Transplantation

43.15. Renal Calculi

43.16. Refractory Rickets

43.17. Hypertension

43.18. Vesicoureteral Reflux

43.19. Voiding Disorders

43.20. Penile anomalies

44. Gynecological Issues

- 44.1. Vaginal bleeding in prepubertal children
- 44.2. Breast concerns
- 44.3. Female genital mutilation

45. Neurological Disorders

- 45.1. Approach to Neurological Disorders including localization
- 45.2. Cerebrospinal Fluid and Neurophysiology
- 45.3. Neuroimaging
- 45.4. Congenital Anomalies

- 45.4.1. Neural Tube Defects and Spinal Cord Malformations

- 45.4.2. Microcephaly
 - 45.4.3. Brain Malformations
 - 45.4.4. Hydrocephalus
 - 45.4.5. Craniosynostosis
 - 45.5. Seizures
 - 45.5.1. Febrile Seizures
 - 45.5.2. Unprovoked Seizures and Epilepsy
 - 45.5.2.1. Generalized
 - 45.5.2.2. Focal
 - 45.5.2.3. Reflex Seizures
 - 45.5.3. Treatment of Seizures
 - 45.5.4. Status Epilepticus
 - 45.5.5. Nonepileptic Paroxysmal Disorders
 - 45.6. Headaches
 - 45.6.1. Migraine
 - 45.6.2. Tension Headache
 - 45.6.3. Secondary Headaches
 - 45.7. Neurocutaneous Syndromes
 - 45.8. Movement Disorders
 - 45.9. Encephalopathies
 - 45.9.1. Cerebral Palsy
 - 45.9.2. Autoimmune
 - 45.9.3. Mitochondrial
 - 45.10. Neurodegenerative Disorders
 - 45.10.1. Grey versus White Matter
 - 45.10.2. Sphingolipidosis
 - 45.10.3. Neuronal CeroidLipofuscinoses
 - 45.10.4. Adrenoleucodystrophy
 - 45.11. Demyelinating Disorders
 - 45.11.1. Acute Disseminated Encephalomyelitis
 - 45.11.2. Optic Neuritis
 - 45.11.3. Transverse Myelitis
 - 45.11.4. Multiple Sclerosis
 - 45.11.5. Autoimmune and Paraneoplastic
 - 45.12. Stroke
 - 45.12.1. Arterial versus Venous
 - 45.13. CNS Vasculitis
 - 45.14. CNS Infections
 - 45.14.1. Acute Pyogenic Meningitis
 - 45.14.2. Tuberculosis of the Central Nervous
- System

- 45.14.3. Viral Meningoencephalitis
- 45.14.4. Neurocysticercosis
- 45.14.5. Brain Abscess

- 45.15. Pseudotumor Cerebri
- 45.16. Coma and Raised Intracranial Pressure
- 45.17. Brain Death
- 45.18. Infantile Tremor Syndrome
- 45.19. Neurometabolic Disorders
- 45.20. Spinal Cord Disorders
- 45.21. Traumatic Brain Injury
- 45.22. Neuro-Rehabilitation

- 45.22.1. Traumatic Brain Injury
- 45.22.2. Spinal cord Injury
- 45.22.3. Spasticity
- 45.22.4. Brachial plexus injury
- 45.22.5. Meningomyelocele
- 45.22.6. Disabled Child

46. Neuromuscular Disorders

- 46.1. Approach to Diagnosis of Neuromuscular Disorders
- 46.2. Floppy Infant
- 46.3. Congenital Muscle Disorders

- 46.3.1. Congenital Myopathies
- 46.3.2. Arthrogryposis

46.4. Muscular Dystrophies

- 46.4.1. Duchenne and Becker Muscular Dystrophy
- 46.4.2. Myotonic Muscular Dystrophy
- 46.4.3. Limb Girdle Muscular Dystrophy
- 46.4.4. Fascio-scapulo-humeral Muscular

Dystrophy

- 46.5. Endocrine/Toxic Myopathies
- 46.6. Metabolic Myopathies

- 46.6.1. Periodic Paralysis
- 46.6.2. Glucogenoses
- 46.6.3. Mitochondrial
- 46.6.4. Lipid

46.7. Neuromuscular Transmission Disorders

- 46.7.1. Myasthenia Gravis
- 46.7.2. Spinal Muscular Atrophy
- 46.7.3. Motor Neuron Disease

46.8. Hereditary Motor Sensory Neuropathies

- 46.8.1. Peroneal Muscular Atrophy
- 46.8.2. Refsum Disease
- 46.8.3. Fabry Disease
- 46.8.4. Leukodystrophy

46.8.5. Acute Flaccid Paralysis

- 46.9. Toxic Neuropathies
- 46.10. Autonomic Neuropathy
- 46.11. Guillain-Barré Syndrome
- 46.12. Bell Palsy

47. Disorders of the Endocrine System

- 47.1. Physiology of Neuroendocrinology
- 47.2. Hypopituitarism
 - 47.2.1. Growth Hormone Deficiency and Resistance
 - 47.2.2. Polyuria, Diabetes Insipidus and Syndrome of Inappropriate Secretion of ADH
- 47.3. Thyroid Disorders
 - 47.3.1. Thyroid Hormone Physiology
 - 47.3.2. Hypothyroidism
 - 47.3.3. Thyroiditis
 - 47.3.4. Hyperthyroidism
 - 47.3.5. Goiter and Thyroid Nodules
 - 47.3.6. Newborn Screening for Congenital Hypothyroidism
- 47.4. Parathyroid Disorders
 - 47.4.1. Bone Mineral and Hormone Physiology
 - 47.4.2. Calcium Disorders
 - 47.4.3. Metabolic Rickets
 - 47.4.4. Disorders with Bone Fragility
 - 47.4.5. Hypoparathyroidism
 - 47.4.6. Pseudo hypothyroidism
 - 47.4.7. Hyperparathyroidism
- 47.5. Pubertal Development
 - 47.5.1. Normal Puberty
 - 47.5.2. Delayed Puberty
 - 47.5.3. Precocious Puberty
- 47.6. Adrenal Gland Disorders
 - 47.6.1. Normal Development and Physiology of the Adrenal Gland
 - 47.6.2. Congenital Adrenal Hyperplasia
 - 47.6.3. Adrenal Insufficiency
 - 47.6.4. Cushing Syndrome
 - 47.6.5. Primary Aldosteronism
 - 47.6.6. Pheochromocytoma
- 47.7. Gonad Disorders
 - 47.7.1. Testicular Hypofunction
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 - 47.7.3. Gynecomastia
 - 47.7.4. Disorders of Sex Development

- 47.7.5. Cryptorchidism and Micropenis
- 47.8. Glucocorticoid Use and Withdrawal
- 47.9. Diabetes Mellitus
 - 47.9.1. Classification of Diabetes Mellitus
 - 47.9.2. Type 1 Diabetes Mellitus
 - 47.9.3. Type 2 Diabetes Mellitus
 - 47.9.4. Acute and Chronic Complications of Diabetes Mellitus
- 47.10. Monogenic Obesity
- 47.11. Hyperlipidemia
- 47.12. Endocrine Consequences of Thalassemia Major
- 47.13. Endocrine Effects of Radiation and Cancer Chemotherapy
- 47.14. Adult Consequences of IUGR and Preterm Birth
- 48. Malignancies in Children
 - 48.1. Epidemiology and Biology of Cancers
 - 48.2. Principles of Diagnosis and Therapy of Cancer
 - 48.3. Leukemias
 - 48.3.1. Acute Lymphoblastic Leukemia
 - 48.3.2. Acute Myelogenous Leukemia
 - 48.3.3. Chronic Myelogenous Leukemia
 - 48.3.4. Infantile Leukemia
 - 48.4. Lymphoma
 - 48.4.1. Hodgkin Lymphoma
 - 48.4.2. Non-Hodgkin Lymphoma
 - 48.5. Brain Tumors
 - 48.6. Neuroblastoma
 - 48.7. Wilms Tumor
 - 48.8. Soft Tissue Tumors
 - 48.9. Bone Tumors
 - 48.10. Retinoblastoma
 - 48.11. Gonadal, Germ cell neoplasms
 - 48.12. Hemangioma
 - 48.13. Lymphangiomas, Cystic Hygromas
 - 48.14. Thyroid Tumours
 - 48.15. Nasopharyngeal Carcinoma
 - 48.16. Adrenal Tumours
 - 48.17. Histiocytosis
 - 48.17.1. LCH
 - 48.17.2. Hemophagocytic Lymphohistiocytosis
 - 48.18. Oncological Emergencies and Supportive Care
 - 48.19. Hematopoietic Stem Cell Transplant
- 49. Rheumatological Disorders

- 49.1. Approach to a Child with Rheumatological Disorder
- 49.2. Laboratory Investigations for Rheumatological Disorders
- 49.3. Drugs and Principles of Management for Rheumatic Disorders
- 49.4. Juvenile Idiopathic Arthritis
- 49.5. Reactive, Post-Infectious Arthritis
- 49.6. Systemic Lupus Erythematosus: Clinical Features and Diagnostic Criteria
- 49.7. Management of Systemic Lupus Erythematosus
- 49.8. Juvenile Dermatomyositis
- 49.9. Large Vessel Vasculitis: Takayasu Arteritis
- 49.10. Medium Vessel Vasculitis: Kawasaki Disease and Polyarteritis Nodosa
- 49.11. Small Vessel Vasculitis: Henoch-Schönlein Purpura and ANCA Associated Vasculitis
- 49.12. Juvenile Scleroderma
- 49.13. Antiphospholipid Syndrome
- 49.14. Growing Pains
- 50. Common Eye Abnormalities
 - 50.1. Common Visual Problems
 - 50.2. Congenital Anomalies
 - 50.3. Refractive Errors
 - 50.4. Cornea and Conjunctiva
 - 50.5. Uveitis
 - 50.6. Cataract and Lens
 - 50.7. Glaucoma
 - 50.8. Optic Nerve and Pupil
 - 50.9. Strabismus and Motility Disorders
 - 50.10. Eyelid, Orbit, and Lacrimal Sac
 - 50.11. Ocular Injuries
 - 50.12. Orbital Infections
 - 50.13. Ocular Manifestations of Systemic Disorders
- 51. Common ENT Problems
 - 51.1. Hearing Loss
 - 51.2. Congenital malformations of Ear
 - 51.3. External Otitis
 - 51.4. Otitis Media
 - 51.5. Mastoiditis
 - 51.6. Inner Ear
- 52. Common Skin Problems
 - 52.1. Skin of the Newborn: Physiological and Pathological Changes
 - 52.2. Care of Skin in the Newborn
 - 52.3. Infections and Infestations
 - 52.4. Congenital Cutaneous Malformations
 - 52.5. Vitiligo and Other Hypopigmentary Diseases
 - 52.6. Atopic Dermatitis
 - 52.7. Contact Dermatitis

- 52.8. Urticaria and Mastocytosis
- 52.9. Psoriasis, Gianotti-Crosti Syndrome
- 52.10. Acanthosis Nigrans
- 52.11. Cutaneous Drug Reactions
- 52.12. Cutaneous Manifestations of Nutritional Deficiency
- 52.13. Cutaneous Manifestations of Collagen Vascular Diseases
- 52.14. Neurocutaneous Syndromes
- 52.15. Vesiculobullous Disorders
- 52.16. Papulosquamous Disorders
- 52.17. Ichthyosis
- 52.18. Genetic Cutaneous Disorders
- 52.19. Hair Disorders
- 52.20. Nail Disorders
- 52.21. Infections of Skin
 - 52.21.1. Impetigo
 - 52.21.2. Subcutaneous Infections
 - 52.21.3. Staphylococcal Scalded Skin Syndrome
 - 52.21.4. Ecthyma
 - 52.21.5. Fungal Infections
 - 52.21.6. Viral Infections
 - 52.21.7. Arthropod bites
 - 52.21.8. Scabies
 - 52.21.9. Pediculosis
 - 52.21.10. Acne

53. Disorders of Bones and Joints

- 53.1. Assessment of the Locomotor System
- 53.2. Deformities of Foot and Toes
 - 53.2.1. Congenital Talipes Equinovarus
- 53.3. Torsional deformities of Limb
- 53.4. Leg Length discrepancies
- 53.5. Transient Monoarticular synovitis
- 53.6. Legg-Calvé-Perthes Disease
- 53.7. Neck Problems
 - 53.7.1. Torticollis
 - 53.7.2. Cervical anomalies
- 53.8. Scoliosis and Kyphosis
- 53.9. Developmental Dysplasia of the Hip (DDH)
- 53.10. Osteomyelitis
- 53.11. Septic Arthritis
- 53.12. Osgood-Schlatter Disease
- 53.13. Arthrogyrosis
- 53.14. Injuries to Bones/Joints
- 53.15. Skeletal Dysplasia
- 53.16. Osteogenesis imperfecta
- 53.17. Marfan Syndrome
- 53.18. Metabolic Bone Disease

- 53.18.1. Hypo/Hyperphosphatemia
- 53.18.2. Osteoporosis

54. Vulnerable Children

- 54.1. Street Children
- 54.2. Child Labor
- 54.3. Child Abuse and Neglect
- 54.4. Adoption: Medical and Legal Issues
- 54.5. Rights of the Child

55. Environmental Health

- 55.1. Climate Change and its impact on Health
- 55.2. Air Pollution and its impact on Health
- 55.3. Biomedical Waste Management

56. Community Pediatrics

- 56.1. Indicators of Child Health
- 56.2. Environment and Child Health
- 56.3. Lead Poisoning
- 56.4. Adoption
- 56.5. Travel Medicine
- 56.6. Protection of Children from Sexual Offences ACT 2012
- 56.7. Rights of People With Disability Act 2016
- 56.8. National Programs for Child Health as relevant to National Health Mission including RBSK.
- 56.9. Integrated Management of Neonatal and Childhood Illness-Facility (IMNCI-F)
- 56.10. Investigation of an Outbreak

57. Quality Assessment and Improvement

- 57.1.1. Point of Care Quality Improvement

B. Psychomotor Domain

- *Should be able to perform independently in the practice of Paediatrics, the following diagnostic and therapeutic interventions as listed below:*

1. Physical Examination

- 1.1. Measurement of Vitals
- 1.2. Measurement of Anthropometry
- 1.3. General physical examination
- 1.4. Physical Examination of Systems
- 1.5. Development (Screening) Assessment
- 1.6. Behavioral (Screening) Assessment
- 1.7. Sexual Maturity Assessment
- 1.8. Newborn Assessment including gestational assessments
- 1.9. Breastfeeding Assessment of Position and Attachment
- 1.10. Motor Disability Assessment

- 1.11. Autism Spectrum Disorder Screening
- 1.12. Fundus examination
- 1.13. Middle ear examination
- 1.14. Throat examination
- 1.15. Triage - Rapid assessment of Airway, Breathing and Circulation
- 1.16. Hand hygiene
- 1.17. Biomedical Waste disposal guidelines

2. Non-Invasive Monitoring

- 2.1. Pulse oximetry
- 2.2. Electrocardiogram
- 2.3. Vital Data Monitor

3. Procedures – Diagnostic

- 3.1. Informed Consent
- 3.2. Aseptic measures for all invasive procedures
- 3.3. Sampling
 - 3.3.1. Venous blood
 - 3.3.2. Arterial blood
 - 3.3.3. Capillary blood
- 3.4. Vascular Access and cannulation
 - 3.4.1. Intravenous – Peripheral
 - 3.4.2. Intravenous - Central
 - 3.4.3. Intraosseous
 - 3.4.4. Intraarterial
 - 3.4.5. Umbilical Vein
- 3.5. Diagnostic Taps
 - 3.5.1. Pleural
 - 3.5.2. Peritoneal
 - 3.5.3. CSF
 - 3.5.4. Pericardial
 - 3.5.5. Joint fluid
 - 3.5.6. Subdural
 - 3.5.7. Ventricular
- 3.6. Urinary Catheterization
- 3.7. Urine collection
 - 3.7.1. Mid-stream sampling
 - 3.7.2. Catheter sampling
 - 3.7.3. Suprapubic puncture
- 3.8. Tuberculin Skin Test
- 3.9. Antibiotic Test Dose
- 3.10. Feeding/Ryles Tube
 - 3.10.1. Insertion

- 3.10.2. Gastric Aspiration
- 3.10.3. Feeds
- 3.10.4. Stomach wash
- 3.11. Respiratory
 - 3.11.1. Naso, Pharyngeal and Nasopharyngeal swab collection
- 3.12. Suppository insertion
- 3.13. Per rectal exam
- 3.14. Inspection of Vulva/Vagina
- 3.15. Aspiration/Biopsy
 - 3.15.1. Bone marrow
 - 3.15.2. Liver
 - 3.15.3. Kidney
 - 3.15.4. FNAC Lymph node
- 3.16. Ultrasound – Lung (B line, Effusion), Circulation (IVC Volume), Vascular access (Central venous), Soft Tissue (Pus)
- 3.17. Blood Group/Type
- 3.18. Smears
 - 3.18.1. Malaria Parasite Smear/Rapid Antigen Test
 - 3.18.2. Peripheral Blood Smear
 - 3.18.3. CSF/Pus Grams Stain
 - 3.18.4. Sputum Ziehl Neilson Smear
- 3.19. Urine dipstick
- 3.20. Stool Hanging drop
- 3.21. Glucometer Blood Sugar
- 3.22. Shake test (Newborn gastric aspirate)
- 3.23. Electrocardiogram
- 3.24. Specific Screening/Assessment Tools
 - 3.24.1. Gestation Assessments
 - 3.24.2. Anthropometric measurements and Growth charting
 - 3.24.3. Peak Flow Meter Measurement
 - 3.24.4. HEADSS screening (Adolescence)
 - 3.24.5. DDST screening (Development Assessment)
 - 3.24.6. Assessment of Sexual Maturity using Tanner's
 - 3.24.7. M-CHAT-R screening (Autism Assessment)
 - 3.24.8. GMSCF Assessment of Motor Disability (Cerebral Palsy)
 - 3.24.9. Pain assessment

4. Procedures – Therapeutic

- 4.1. Informed Consent
- 4.2. Prescriptions/Medication Orders
- 4.3. Neonatal Resuscitation Program including intubation
- 4.4. Basic Life Support
- 4.5. Advanced Paediatric Life Support including intubation

- 4.6. Heimlich, Foreign Body Removal
- 4.7. Exchange Transfusion
- 4.8. Stomach wash
- 4.9. Injections
 - 4.9.1. Intravenous
 - 4.9.2. Intramuscular
 - 4.9.3. Subcutaneous
 - 4.9.4. Intradermal
- 4.10. Infusions
 - 4.10.1. IV bolus
 - 4.10.2. Intravenous
 - 4.10.3. Intraosseous
 - 4.10.4. Blood Component Transfusion
- 4.11. Respiratory
 - 4.11.1. Meter dose inhalation with or without Spacer/Mask
 - 4.11.2. Nebulization
 - 4.11.3. Airway Insertion – Nasopharyngeal,
Oropharyngeal
 - 4.11.4. Needle Cricothyroidotomy
 - 4.11.5. Oxygen delivery methods
 - 4.11.6. HFNC/CPAP/Non-Invasive Ventilation
 - 4.11.7. Ventilation – Conventional
 - 4.11.8. Intercostal drainage
 - 4.11.9. Surfactant Administration (INSURE)
- 4.12. Spinal infusion/injection
- 4.13. Therapeutic Ascitic Tap
- 4.14. Peritoneal dialysis
- 4.15. Phototherapy
- 4.16. Incision and Drainage
- 4.17. Dressings
- 4.18. Sling
- 4.19. Transport onto and off stretcher
- 4.20. Neonatal Temperature Warm Chain Measures
 - 4.20.1. Wrapping up Newborn
 - 4.20.2. Kangaroo Mother Care
- 4.21. Immunization Cold Chain Measures
 - 4.21.1. Refrigerator
 - 4.21.2. Vaccine carrier
- 4.22. Restraining a child
- 4.23. Transporting a child
- 4.24. Early Interventional Therapy
- 4.25. Chest Physiotherapy

Milestones to be achieved on Psychomotor Skills through Year 1 to 3.

O-Observe

PS-Perform under supervision

PI-Perform independently

Milestones	1st Year	2nd Year	3rd Year
1. Physical Examination			
1.1. Measurement of Vitals	PI		
1.2. Measurement of Anthropometry	PI		
1.3. General physical examination	PI		
1.4. Physical Examination of Systems	PI		
1.5. Development (Screening) Assessment	O, PS	PI	
1.6. Behavioral (Screening) Assessment	O	PS	PI
1.7. Sexual Maturity Assessment	O, PS	PI	
1.8. Newborn Assessment including gestational assessments	PI		
1.9. Breastfeeding Assessment	PI		
1.10. Motor Disability Assessment	O	PS	PI
1.11. Autism Spectrum Disorder Screening	O	PS	PI
1.12. Fundus examination	PI		
1.13. Middle ear examination	PI		
1.14. Throat examination	PI		
1.15. Triage - Rapid assessment of ABC	PI		
1.16. Hand hygiene	PI		
1.17. Biomedical Waste disposal guidelines	PI		
2. Non-Invasive Monitoring			
2.1. Pulse oximetry	PI		
2.2. Electrocardiogram	PI		
2.3. Vital Data Monitor	PI		
3. Procedures – Diagnostic			
3.1. Informed Consent	PI		
3.2. Aseptic measures for all procedures	PI		
3.3. Sampling			
3.3.1. Venous blood	PI		
3.3.2. Arterial blood	PI		

3.3.3. Capillary blood	PI		
3.4. Vascular Access and cannulation			
3.4.1. Intravenous – Peripheral	PI		
3.4.2. Intravenous - Central	O	PS	PI
3.4.3. Intraosseous	PI		
3.4.4. Intraarterial	O	PS	PI
3.4.5. Umbilical Vein	PI		
3.5. Diagnostic Taps			
3.5.1. Pleural	PS	PI	
3.5.2. Peritoneal	PI		
3.5.3. CSF	PI		
3.5.4. Pericardial	O	PS	PI
3.5.5. Joint fluid	O	PS	PI
3.5.6. Subdural	O, PS	PI	
3.5.7. Ventricular	O	PS	PI
3.6. Urinary Catheterization	PI		
3.7. Urine collection			
3.7.1. Mid-stream sampling	PI		
3.7.2. Catheter sampling	PI		
3.7.3. Suprapubic puncture	PI		
3.8. Tuberculin Skin Test	PI		
3.9. Antibiotic Test Dose	PI		
3.10. Feeding/Ryles Tube			
3.10.1. Insertion	PI		
3.10.2. Gastric Aspiration	PI		
3.10.3. Feeds	PI		
3.10.4. Stomach wash	PI		
3.11. Respiratory			
3.11.1. Naso, Pharyngeal, NP swab collection	PI		
3.12. Suppository insertion	PI		
3.13. Per rectal exam	O	PS	PI

3.14. Inspection of Vulva/Vagina	PI		
3.15. Aspiration/Biopsy			
3.15.1. Bone marrow	O, PS	PI	
3.15.2. Liver	O	PS	PI
3.15.3. Kidney	O	PS	PI
3.15.4. FNAC Lymph node	O	PS	PI
3.16. Ultrasound – Lung (B line, Effusion), Circulation (IVC Volume), Vascular access (Central venous), Soft Tissue (Pus)	O	O, PS	PS
3.17. Blood Group/Type	O, PS	PI	
3.18. Smears			
3.18.1. Malaria Parasite Smear/Rapid Antigen Test	O, PS	PI	
3.18.2. Peripheral Blood Smear	O, PS	PI	
3.18.3. CSF/Pus Grams Stain	O, PS	PI	
3.18.4. Sputum Ziehl Neilson Smear	O, PS	PI	
3.19. Urine dipstick	PI		
3.20. Stool Hanging drop	O, PS	PI	
3.21. Glucometer Blood Sugar	PI		
3.22. Shake test (Neon gastric aspirate)	PI		
3.23. Electrocardiogram	PI		
3.24. Specific Screening/Assessment Tools			
3.24.1. Gestation Assessments	PI		
3.24.2. Anthropometric measurements and Growth charting	PI		
3.24.3. Peak Flow Meter Measurement	PI		
3.24.4. HEADSS screening (Adolescence)	O, PS	PI	
3.24.5. DDST screening (Development Assessment)	O, PS	PI	
3.24.6. Assessment of Sexual Maturity using Tanner's	O, PS	PI	
3.24.7. M-CHAT-R screening (Autism Assessment)	O	PS	PI
3.24.8. GMSCF Assessment of Motor Disability (Cerebral Palsy)	O	PS	PI

3.24.9. Pain assessment	PI		
4. Procedures – Therapeutic			
4.1. Informed Consent	PI		
4.2. Prescriptions/Medication Orders	PI		
4.3. Neonatal Resuscitation Program including ET	PI (BVM)	PI (ET)	
4.4. Basic Life Support	PI		
4.5. Advanced Paediatric Life Support including ET	PI (BVM)	PI (ET)	
4.6. Heimlich, Foreign Body Removal	PI		
4.7. Exchange Transfusion	O	PS	PI
4.8. Stomach wash	PI		
4.9. Injections			
4.9.1. Intravenous	PI		
4.9.2. Intramuscular	PI		
4.9.3. Subcutaneous	PI		
4.9.4. Intradermal	PI		
4.10. Infusions			
4.10.1. IV bolus	PI		
4.10.2. Intravenous	PI		
4.10.3. Intraosseous	PI		
4.10.4. Blood Component Transfusion	PI		
4.11. Respiratory			
4.11.1. Meter dose inhalation with or without Spacer/Mask	PI		
4.11.2. Nebulization	PI		
4.11.3. Airway Insertion – Nasophy, Orophy	PI		
4.11.4. Needle Cricothyroidotomy	O	PS	PI
4.11.5. Oxygen delivery methods	PI		
4.11.6. HFNC/CPAP/Non-Invasive Ventilation	O, PS	PI	
4.11.7. Ventilation – Conventional, High Freq (HFV)	O	PS	PI (Not HFV)
4.11.8. Intercostal drainage	O, PS	PI	
4.11.9. Surfactant Administration	O, PS	PI	

	(INSURE)			
4.12.	Spinal infusion/injection	O	PS	PI
4.13.	Therapeutic Ascitic Tap	O, PS	PI	
4.14.	Peritoneal dialysis	O	PS	PI
4.15.	Phototherapy	PI		
4.16.	Incision and Drainage	O	PS	PI
4.17.	Dressings	PI		
4.18.	Sling	PI		
4.19.	Transport onto and off stretcher	PI		
4.20.	Neonatal Temperature Warm Chain	PI		
4.20.1.	Wrapping up Newborn	PI		
4.20.2.	Kangaroo Mother Care	PI		
4.21.	Immunization Cold Chain Measures			
4.21.1.	Refrigerator	PI		
4.21.2.	Vaccine carrier	PI		
4.22.	Restraining a child	O, PS	PI	
4.23.	Transporting a child	O, PS	PI	
4.24.	Early Interventional Therapy	O	PS	PI
4.25.	Chest Physiotherapy	O, PS	PI	

C. Predominant in Affective Domain

Should be able to effectively and empathetically.....

1. Communication – Child/Attender/Guardian

- 1.1. Elicit a relevant and appropriate history from an attender/child including family and support systems
- 1.2. Engage and explain in appropriate language the plan (diagnostic and management including economics of plans) to an attender/child
- 1.3. Explain the prognosis of the child's condition
- 1.4. Educate a Parent, an attendant/guardian/child with regards disease/, cultural, and spiritual understanding associated with health care delivery complication prevention, health promotion, and management keeping illustrating ethical ?
- 1.5. Counsel towards an Informed Consent/Assent
- 1.6. Communicate disturbing/bad news including death

- 1.7. Demonstrates communication skills to appropriately word reports, professional opinions, patient education and counseling with regards
 - 1.7.1. Health and Disease condition with management plan
 - 1.7.2. Nutrition - Breastfeeding, complimentary feeding and nutrition using a Growth chart
 - 1.7.3. Immunization – On schedule, catch up including costs and advantages/disadvantages
 - 1.7.4. Lifestyle
 - 1.7.4.1. Dietary
 - 1.7.4.2. Habits
 - 1.7.5. Genetic risks of relevant inherited conditions
 - 1.7.6. Options for management and future approach in care with advantages and disadvantages
 - 1.7.7. Rights and responsibilities
- 1.8. Demonstrates knowledge or applies an understanding of psychological, social, and economic factors which are pertinent to the delivery of health care.
- 1.9. Demonstrates and effectively engages the patient and / or family in all communication.
- 1.10. Demonstrates ability to provide patient, family and community education through written material especially simple patient information leaflets

Should be able to effectively and respectfully.....

2. Communication – Health Team members

- 2.1. Communicate with all members of the health care team
- 2.2. Communicate with other members of the profession
- 2.3. Communicate with allied professionals associated with Health care

Should be able to

3. Professionalism and Ethical Behaviour

- 3.1. Demonstrates Professional Conduct in patient care and research
 - 3.1.1. Demonstrate respect for the Doctor-Patient relationship
 - 3.1.2. Demonstrate respect for the Doctor-Health Care Team Member relationship
 - 3.1.3. Demonstrate adherence to confidentiality and patient privacy in all communications in and outside the place of work.

- 3.1.4. Demonstrate respect of a patient's rights and decisions including the right to information and second opinion.
- 3.1.5. Demonstrate behaviour aligned with MCI/NMC code of ethics in all related dealings
- 3.1.6. Demonstrates personal and social responsibility/accountability in the provision of health care at an individual, community and population level
- 3.1.7. Demonstrate an awareness of economic costs of health care in all dealings with patients.
- 3.1.8. Demonstrate adherence to research ethics guidelines in the conduct of patient related research.
- 3.1.9. Demonstrates work ethics while working in a health care team.
- 3.1.10. Demonstrates truthfulness, honesty and integrity in all interactions.
- 3.1.11. Provides care that surpasses personal beliefs and prejudices
- 3.1.12. Demonstrates appropriate etiquette in dealings with patients, relatives and other health personnel
- 3.2. Demonstrates behavior that is Ethical and bound by the Law of the land**
 - 3.2.1. Recognizes Ethical conflicts and dilemmas seeking solutions to reduce conflicts and do the right thing.
 - 3.2.2. Complies with legal requirements while dealing with child health and includes issues dealing with the Industry Conflict, MTP Act, PCPNDT act, Child Abuse, Child labour, Legal adoption, Consent and Assent.

D. Pedagogic and Research Skills

Should be able to effectively

1. Pedagogic Skills

- 1.1. Conduct a small group learning session (Theory and Practical) using appropriate tools
- 1.2. Create and use an effective Powerpoint Presentation
- 1.3. Present to a large group

Should be able to effectively

2. Research Skills

- 2.1. Search scientific literature and critically appraise the evidence using standard study design checklists enabling application to clinical care.

- 2.2. Justify the application of the findings of a research study in clinical practice(Diagnostic and Therapeutic Studies)
- 2.3. Develop a research hypothesis supported by scientific literature review, design an appropriate study, implement the methodology, generate results by analyzing data, and draw appropriate conclusions.
- 2.4. Should be able to present or/and publish a paper based on the conducted research.

***MAPPING OF PROGRAMME OUTCOMES [POs] AND
COURSE OUTCOMES [COs] OF PG
PROGRAMMES***

No.	By the end of the programme, the Postgraduate will have / be:
PO 1	Knowledge and Skills
PO 2	Planning and problem solving abilities
PO 3	Communication
PO 4	Research Aptitude
PO 5	Professionalism and Ethics
PO 6	Leadership
PO 7	Societal Responsibilities
PO 8	Environment and Sustainability
PO 9	Lifelong Learner

DEPARTMENT OF PEDIATRICS

Course Code	Course Title
01310301	MD Pediatrics

Course Outcomes (Subject Code)

CO No.	At the end of the course, the learner should be able to:	Mapped Programme Outcomes
CO 1	Diagnose and manage all Pediatrics and neonatal diseases, genetic disorder and infection diseases.	PO1,PO2,PO3,PO4, PO5, PO 6,PO7, PO9
CO 2	Manage all paediatrics and neonatal emergencies.	PO1,PO2,PO3,PO 4,PO5, PO 6,PO 9
CO 3	Recognise the health needs of infant's children and adolescents as per retainable goals in community & Provides preventive care to children.	PO1,PO2,PO3,PO 4,PO5, PO6, PO7, PO8,PO9
CO 4	Demonstrates skills in educating medical and paramedical professionals.	PO1,PO2,PO3, PO4, PO5, PO 6, PO 8, PO 9
CO 5	Communicate and counsel parents on issues of related to nutrition immunisation, growth and developments acute and chronic illness inform clinical illness and declare death.	PO1,PO2,PO3,PO4, PO5, PO 6, PO7, PO8,PO9
CO 6	Perform skills related to emergency and chronic illness.	PO1,PO2,PO3,PO4,P O5,PO 6,PO7,PO8,PO9