

PAEDIATRIC POST GRADUATE TRAINING
MEMBERSHIP IN CHILD HEALTH

1. GENERAL REQUIREMENTS

1.1. Admission Requirements

- 1.1.1. MBCHB degree or Equivalent
- 1.1.2. Completion of 2 years housemanship of 6-month rotations of the major disciplines including paediatrics.
- 1.1.3. Full Registration with Medical & Dental Council.
- 1.1.4. Pass in the GCPS Part I Membership examination or WACP Primary examination or equivalent as determined by the GCPS.
- 1.1.5. Selection interview.

1.2. Duration of Course

- 1.2.1.** A 3-year training course for fresh applicants **OR**
- 1.2.2 A 2-year training course for GCPS DCH holders or equivalent. Such DCH holders must show proof of one year satisfactory post-diploma experience in paediatrics in a Ministry of Health Facility

1.3 Course Structure

- 1.3.1 Clinical Rotations - Evidence of clinical rotations in the following disciplines
- 1.3.2 General Paediatrics – including Infectious disease, Nutrition/Gastroenterology, Endocrinology, Neonatology, Emergency, Cardiology, Nephrology, Neurology and Neurodevelopment, Respiratory Medicine, Haematology and Oncology
- 1.3.3 District Rotation (outside Teaching Hospital) - minimum 6 months, Elective rotations-ENT, Ophthalmology, Dermatology, Pathology – 1 month
- 1.3.4 Lectures, Seminars, Revision & Update courses, Evidence of attendance – log books, certificate
- 1.3.5 Acquisition of Competencies, Leadership, teamwork, teaching
- 1.3.6 Acquisition of skills. The trainee should be proficient in and know the appropriate indications, contraindications and complications in the skills outlined in section 3.3.1 These will be documented in a logbook

1.4 Assessment

- The logbook will be used throughout the course.
- There will be a mentorship system in place.
- After every rotation the supervisor will meet and discuss the logbook and progress made, and trainee will be assessed.
- After successful completion of training, residents will take the Part 2 Membership examination i.e. final examination

1.4.1 Examination Format

1.4.1.1 Part I (Entrance Examination)

Duration	-	2.5 hours
MCQs	-	1 out of 5 (100 questions)
Content	-	Applied Basic Science

1.4.1.2 Part II

Part II (Theory):- Duration - 3hours Paper 1:- 60 MCQs (1 out of 5) & Paper 2:- 3 Essays (answer all)

Part II (Clinical):- Long case, Short cases, Orals

Paper II (Practicals) - clinical pictures and data interpretation

Successful candidates will be awarded the Membership of the Ghana College of Physicians and Surgeons.

2 **BASIC SCIENCES**

The candidate should have adequate knowledge of basic sciences relevant to paediatrics and be able to apply that knowledge to clinical situations

Comment [B1]: Shd we take each system and indicate what to cover under anatomy, embryology, physiology etc rather than as is now

2.1 **Applied Anatomy/Embryology**

2.1.1 Cardiovascular

- Fetal circulation. Circulatory changes at birth in health and disease.
- Common congenital heart defects.

2.1.2 Respiratory

- The bronchial tree and lung: important congenital abnormalities..

2.1.3 Gastroenterology

- Embryology of the GI tract including liver and pancreas

2.1.4 Endocrine

Embryology of the endocrine system and common abnormalities.

2.1.5 Genito-urinary

- Embryology of the genito-urinary tract. The relationship of abnormal embryogenesis to clinical disorders, e.g. hydronephrosis, ureteric and urethral obstructions, cystic renal disease

2.1.6 CNS

- Neuro anatomy including Neural tube defects.

2.2 **Pharmacology and Therapeutics**

2.2.1 Basic Knowledge

- Drug indications for specific diseases
- Mechanisms of action of commonly used drugs
- Important drug interactions and side effects
- Variety of formulations of different drugs: generic/proprietary Over-the-counter drugs: home remedies
- Use of antimicrobials:
 - mechanisms of drug resistance

- appropriate agents for different infections based on likely causative organism and prevalent patterns of resistance
- tissue penetration
- prophylactic use, e.g. recurrent UTIs, otitis media.
- Pharmacodynamics/Pharmacokinetics
 - antimicrobials including anti malaria, anti TB and Antiretroviral drugs.
 - endocrine drugs – steroids
 - Asthma drugs.
 - Anti-epileptic drug (AEDs).
 - Anti-inflammatory drugs.
 - Cardiovascular drugs.

2.2.2 Technical Skills

- Ability to write correct and legible prescriptions
- Preparation and administration of intravenous injections and infusions
- Calculation of drug dosage according to the weight or surface area.
- Dosage adjustment in organ failure.

2.3 **Microbiology**

- Classification of infectious agents
- Causes of vulnerability to infections
- Mechanisms of maternal-fetal-infections
- Avoidance of nosocomial infection in everyday practice.

2.4 **Haematology**

- Development, structure and function of formed elements of the blood and blood-forming organs
- Mechanisms of haemostasis and its common disorders
- Interpretation of results of FBCs and differential counts at different ages
- Recognition of common abnormalities on a blood film

2.5 **Physiology**

2.5.1 Cardiovascular

- Physiology of the fetal circulation. Circulatory changes at birth Functional consequences associated with common congenital heart defects
- Pathophysiology and management of cardiac failure and shock
- Pathophysiology and management of acute cardiopulmonary arrest
- Pathophysiology of septic shock: disseminated intravascular coagulation (DIC)

2.5.2 Respiratory

- Pulmonary physiology relevant to clinical practice: ventilation, perfusion, gas exchange, lung volume, compliance, blood gas physiology.
- Causes of respiratory failure: principles of management
- Mechanisms of respiratory symptoms and signs: cough reflex, wheezing, recession, stridor, stertor, grunting
- Understanding pathophysiology, genetics, environmental influences of atopic diseases

2.5.3 Genito-urinary System

- Physiology of control of water and electrolytes
- Requirements for fluid and electrolytes in health and disease
- Understanding acid-base balance: assessment of acidosis
- Pathophysiology of acute and chronic renal failure: renal osteodystrophy: growth in chronic renal disease.
- Indications for measurement of glomerular filtration rate, creatinine clearance, protein/creatinine ratio, calcium/creatinine ratio, renal imaging
- Knowledge of current theories regarding epidemiology of urinary reflux and secondary progression of renal damage and its possible prevention
- When to suspect neuropathic bladder: role of urodynamic studies.
- Presentation of tubular and metabolic disorders including:
 - renal tubular acidosis
 - cystinosis and other Fanconi syndromes
 - hypophosphataemic rickets
 - nephrogenic diabetes insipidus.

2.5.4 Immunology and Allergy

- Host defence mechanisms at different ages
- Host defence mechanisms of various systems
- Pathophysiology of allergic disorders
- Pathological basis of autoimmune diseases
- Immunodeficiency states: immunoglobulins, T and B cells, complement, polymorph dysfunction.

2.5.5 Musculoskeletal

- Bone growth – pathophysiology
- Rickets – pathophysiology

2.5.6 Endocrinology

- The synthesis, transport, biochemical actions and control of hormones
- Screening for endocrine disorders
- Knowledge of the basic endocrinology of growth and puberty

2.5.7 Gastroenterology and Nutrition

- Physiology of the GI tract including liver and pancreas: causes of malabsorption, steatorrhoea and protein-losing enteropathy
- Absorption and intermediary metabolism of nutrients
- Breast-milk and lactation physiology
- Nutritional deficiencies
- Nutrient composition of local foods.

2.5.8 Metabolism

- intermediary metabolism including glucose and metabolic response to fasting, lactate, ammonia, amino acids, organic acids, fatty acids
- calcium metabolism

2.5.9 CNS

- Structure and function of clinically relevant neurological pathways
- Functional anatomy and physiology of the auditory system – hearing assessment.
- Normal visual development – vision assessment.

2.5.10 Genetics

- Prenatal diagnosis.
- Genetic basis of disease e.g. haemoglobinopathies, malignancy.
- Modern developments uniparental disomy, triple expansion disorders, (eg. Fragile X). imprinting, germline mosaicism.

Cytogenetics and molecular genetics

- Modern developments e.g. FISH (fluorescent in -situ hybridisation).
- The DNA diagnosis of Duchenne Muscular Dystrophy, Cystic Fibrosis and Fragile X, Down syndrome.

2.5.11 Foetal and Neonatal Medicine

- Physiology of the newborn (full term and premature)
- Biochemical Screening and metabolic disorders in the newborn (inborn errors of metabolism).
- Pathophysiology of prematurity
- Pharmacology of the newborn
- Immunology of the newborn

3 GOALS FOR PROFESSIONAL TRAINING IN PAEDIATRICS AND CHILD HEALTH

3.1 **Basic Knowledge**

The paediatrician in training must understand fundamental concepts in order to provide a solid base for clinical studies.

3.1.1 Normal growth and development

3.1.2 Abnormalities of growth and development.

3.1.3 Deviation from the norm and disease states:

- This includes knowledge of the pathophysiology of important childhood disorders and an ability to diagnose and manage them.

3.1.4 Homeostasis and restoration of body function and structure:

- This knowledge allows logical management plans to correct the underlying cause and/or modify the course of the illness.

3.1.5 Provision of child healthcare:

- This embodies the organization of healthcare and the concept of integration; co-ordination with other services and legislation for health.
- Early diagnosis, prevention and promotion of health lifestyles are important principles.

3.1.6 Therapeutics:

- Clinical pharmacology of common drugs, particularly their functions and toxicity in relation to the child's age and maturity, disease status, other common treatments and therapies.

3.1.7 Epidemiology – The Pattern of disease in children:

- This encompasses causation, prevalence and incidence of disease; and means of data collection. The impact in adult life of disease originating in childhood.
- Biostatistics.

3.2 Clinical Skills

3.2.1 General Interviewing Skills

- Learn to establish a professional relationship with the patient, parent or caregiver in order to obtain a history, conduct a physical examination and provide appropriate management.
- Be able to talk in a manner which is understood by the child, parent or caregiver and convey appropriate interest and sensitivity. Support and listen; respond appropriately to their anxieties, expectations and frustrations, thus involving both parent and child in making decisions.

3.2.2 History Taking

Obtain and record a complete history, emphasizing those aspects germane to the presenting complaint. It should also include birth, feeding, developmental, immunization, social and family history

3.2.3 Physical Examination

- Learn to examine all body systems confidently and competently, including an assessment of development, growth status and measurement of blood pressure.
- Record this systematically. Learn to modify the examination according to the child's age and illness.

3.2.4 Communication – Record Keeping and Presentation

Communicate the patient's problems clearly, concisely and accurately in the following ways:

- A written medical record regularly updated.
- Verbal presentation at the bedside, seminar or classroom.
- Using patient records to monitor and upgrade patient care (clinical audit).
- Communicating with colleagues: establish links with professionals in primary care, especially GPs and Community Child Health doctors and health visitors; keep them regularly informed. As appropriate and with permission, communicate with teachers, social workers and other professional staff (eg. Psychologists).
- Attending to practical and ethical issues, including confidentiality, of computerized record keeping.
- Use of Child Health Record.

3.2.5 Problem Solving

- Problem identification:
 - Learn rapidly to identify the well child, the unwell child and the child with a life-threatening illness.
 - Understand the differences in approach to problem identification in the primary and secondary care setting.

- Analyse a diagnosis into the component problems by correlating history, physical examination and further laboratory and imaging tests.
 - Understand problem-orientated medical records.
 - Problem Management
 - Be able to manage problems by:
 - Utilising appropriate resources.
 - Explaining to parents and child the problem and its management, communicate with other healthcare professionals as indicated.
 - Evaluating the effectiveness of management plans through proper recording and periodic assessment of a patient's progress.
 - Interpret simple laboratory results and other investigations. Understand the importance of avoiding unnecessary investigations. .
 - Recognise personal limitations and be able to judge when to seek advice and assistance. Aim to apply knowledge derived from critical appraisal of literature.
 - Recognise the need for a multidisciplinary approach both within and without the health sector in the management of childhood conditions.
- 3.2.6 Counselling - Learn, initially by example
- Sharing bad news with parents and older children.
 - The importance of bereavement counselling
 - Understand the special aspects of child grief.
- 3.2.7 Professional Etiquette
- Learn how to handle complaints including criticisms of colleague by patients.
 - Understand the importance of a second opinion.
 - The role of the Ghana Medical and Dental Council.

3.3.1 Technical Skills

3.3.1 Become proficient in the following technical skills, understanding that the techniques and approach may vary with age and size. Recognise that counselling to diminish anxiety and effective pain relief are important pre-requisites to any procedure

- Basic Life Support and Cardio pulmonary resuscitation
- Venepuncture and cannulation
- Endotracheal intubation
- Ear, Nose and Throat (ENT) examination
- Ophthalmological examinations
- Injections – intradermal, subcutaneous, intramuscular, intravenous
- Finger and heel prick
- Lumbar puncture
- Pleural tap and chest tube insertion
- Abdominal paracentesis
- Emergency vascular access – umbilical vein, cut down and intraosseous techniques
- Arterial access – umbilical, peripheral arterial puncture
- Exchange transfusion
- Basic X-ray interpretation
- Basic electrocardiography (ECG) interpretation
- Interpretation of basic laboratory results
- Interpretation of basic haematological slides
- Appropriate use and application of non-invasive monitoring: transcutaneous oxygen saturation, etc.

- Suprapubic aspiration of urine
- Urethral catheterisation
- Urinalysis and microscopy
- Blood film for malaria parasites
- Blood transfusion
- Bone marrow aspiration
- Fine needle aspiration of tumour for cytology
- Basic skill in general ultrasonography
- Observation of echocardiography

3.4 **Attitudes**

3.4.1 Children and Families

- An interest in, and liking for children is essential; this includes the capacity to establish and maintain a responsible and trusting relationship with the young patient and the family.
- An awareness of psychosocial as well as biological factors in the assessment and management of any child.
- Honesty and compassion in dealing with all problems of paediatric practice.
- An appreciation of why the healthcare needs of children differ from those of adults. Develop a non-discriminatory attitude when dealing with parents from different social and ethnic background and also adolescents with differing cultural values.
- Promotion of active family involvement in the continuing management of the ill child.
- An appreciation that parents' perceptions of the severity of a child's illness may differ markedly for an equivalent clinical presentation.

3.4.2 Health workers

- The capacity to establish and maintain co-operative and good interpersonal relationships with colleagues and health workers in hospital and community.

3.4.3 Personal

- Flexibility and willingness to adjust appropriately to changing circumstances.
- Appreciation and logical use of protocols, texts, reference literature and related resources.
- Critical appraisal of medical publications.
- The habit and principle of self-education in order to continuously update and refresh knowledge and skills during training and as a lifelong commitment to continuing education.

4 FOETAL AND NEONATAL MEDICINE

4.1 Knowledge

4.1.1 Epidemiology

- Demographic, medical, psychosocial factors which influence perinatal mortality and morbidity.
- Methods of data collection at local and national level, including birth and death notification systems.

4.1.2 The Foetus

- Genetic aspects of perinatal disease and prenatal diagnosis.
- Occupational and environmental risks to the foetus.
- Foetal physiology, growth and development.
- Assessment of foetal well being.

4.1.3 Pregnancy disorders and their effect on the foetus

- Maternal chronic diseases and the foetus e.g.
 - Cardiovascular and renal disorders in pregnancy.
 - Endocrine and metabolic disorders in pregnancy.
 - Foetal effects of maternal autoimmune disease.
- Infections in pregnancy.
- Obstetric complications and the foetus.

4.1.4 Developmental/Neonatal Pharmacology including drug use in pregnancy

4.1.5 Pathophysiology of Prematurity

- Neonatal transition in the preterm.
- Respiratory distress syndrome and sequelae.
- Cardiovascular and Renal problems.
- Neurological problems.
- Nutritional problems

4.1.6 Intrapartum birth injuries

- Birth asphyxia - Pathophysiology, management and long term outcome
- Birth trauma – soft tissue, neurological, and orthopaedic problems

4.1.7 Congenital abnormalities

4.1.8 Intrauterine growth restriction

4.1.9 Nutrition in well and sick babies – Human milk, formula milk, and parenteral nutrition

4.1.10 General principles of care of the newborn

- Temperature regulation
- Infection prevention and control
- Developmental Care (nursing, environmental)

- Counselling parents about care of their infant
- Care of the parents including assessment of infants home and maternal support.
- The newborn at risk and identify early pointers towards significant illness.
- Post-discharge care

4.1.11 Principles of care of the sick newborn

- Neonatal resuscitation
 - Organisation of training, audit special situations.
- Recognition, stabilization and transport of the sick newborn.
- Nursing care of the sick newborn
- Respiratory care and mechanical ventilation.
 - Delivery of respiratory support including assisted ventilation
 - Assessment of pulmonary function.
 - Management of complications.
 - Long term complications of mechanical ventilation.
- Cardiovascular support
 - Assessment of cardiovascular function.
 - Circulatory support.
 - Assessment and medical management of common congenital/ developmental cardiac defects
- Feeding and Gastrointestinal function
 - Composition and use of human milk formulae and supplements.
 - Parenteral nutrition.
 - Diagnosis and medical management of gastro oesophageal reflux, necrotising enterocolitis, congenital gastrointestinal malformations, liver and biliary disorders in the newborn.
- Neurology
 - Pain relief.
 - Assessment of structural and functional integrity using clinical examination and special investigations.
 - Seizures and other major neuropathology – assessment, management.
 - Screening for retinopathy of prematurity and hearing loss in infants at risk.
- Haematology/ Immunology
 - Blood component therapy.
 - Neonatal jaundice – assessment and management.
 - Anaemia of prematurity
 - Thrombocytopenia and other haematological conditions in the newborn
 - Retroviral infection and the newborn

- Metabolic and renal function
 - Blood glucose homeostasis.
 - Fluid and electrolyte balance.
 - Acid base balance.
 - Metabolic bone disorders of premature infants
- Infections – bacterial, fungal, protozoal, viral.
 - Diagnosis and management of congenital and postnatally acquired infections
- Care of the parents
 - Effective communication.
 - Counselling parents
 - Breaking bad news.

4.1.12 Ethical issues

- Concerning congenital abnormality, neurological complications, extreme prematurity, HIV infection, death.

4.2 Skills

4.2.1 Clinical Skills

- History: Use relevant sources (and in particular liaison with the obstetric service) to elicit history of present pregnancy, social and environmental information and details of labour and delivery in order to understand problems of the newborn.
- Physical examination
 - At birth and subsequently to determine the need for appropriate care.
 - Detailed examination including an assessment of growth and development *in-utero*, gestational age, behavioural and neurological state
- Physiologic Monitoring – temperature, cardiac/respiratory, blood pressure, blood gases
- An understanding of normal variation of physical clinical findings.
- Interpretation of data – biochemistry, haematology, radiology.
- Developmental and neurological assessment of the neonate & older infant
- Advise and guide mother on feeding and general care of her infant.
- Use of different (available) methods of supporting ventilation.
- Counselling parents and Breaking bad news.
- Nursing care of the sick newborn

4.2.2 Technical Skills

- Aseptic techniques
- Blood sampling – venous, arterial, and capillary.
- Vascular access: umbilical, peripheral intravenous/arterial
- Intraosseous cannulation and infusions
- Neonatal resuscitation.
- Endotracheal intubation.
- Lumbar puncture.

- Suprapubic bladder aspiration.
- Thoracostomy tube placement.
- Use and application of non-invasive and invasive monitoring.
- Phototherapy
- Surfactant therapy.
- Placement of nasogastric and orogastric tube
- Urinary bladder catheterization
- Transfusion of blood products including exchange blood transfusion
- Drainage of superficial access

4.2.3 Diagnostic Skills

- Radiology
 - Interpretation of common acute neonatal examinations, eg, chest and abdominal X-rays.
- Ultrasonography and other imaging methods
 - Use for neuro-imaging.
 - Knowledge of use in imaging cardiovascular system and other organs.
- Laboratory medicine
 - Liaison with specialist laboratory for investigation of metabolic disease.
 - Monitoring and investigation of long-term problems, eg, metabolic bone disease, prolonged jaundice etc.
 - Role in investigation of neonatal infection including suspected congenital infection.
- Technological Skills
 - Understanding basic mechanical and electrical function of ventilators and monitoring equipment.

4.3 Attitudes

- Awareness of the attachment process of parents and child, and the long-term sequelae that might result from interference with this process.
- Understanding the importance of human milk and breast feeding. Knowledge about formula milk, indications for use and oppositions to use.
- The recognition of discomfort and pain in the newborn and provision of adequate pain relief.
- An understanding that especially in the care of the newborn, interventions have a potential for harm as well as for benefit.
- Awareness of the ethical, social and legal issues related to the care of the critically-ill newborn, the malformed or extremely immature newborn.
- Effective communication with parents.

4.4 Particular Problems

- Ability to recognize, initiate diagnostic tests and outline the management of:
 - Multiple births.
 - Perinatal asphyxia.
 - Intraventricular haemorrhage.
 - Infant of the diabetic mother or mothers with other medical problems.
 - Drug withdrawal syndromes.
 - Ambiguous genitalia.
 - Iatrogenic injuries

- Apnoea of prematurity.
- Vomiting in the first week of life.
- Seizures.
- Haemorrhagic disease.
- Viral infections in pregnancy & immunization e.g. chicken pox, hepatitis B
- Polycythemia and thrombocytopenia.
- Skin disorders.

5 GENITO-URINARY SYSTEM

5.1 Knowledge

5.1.1 General

- Presentation, investigation and management of urinary tract infection as well as possible complications.
- Assessment of common presentations of genito-urinary problems e.g. enuresis, proteinuria, oedema, haematuria, hypertension, oligo-anuria.
- Variation of blood pressure with age-diagnosis, investigation and management of hypertension.
- Indications in acute renal failure for peritoneal dialysis and haemodialysis.
- Ability to diagnose and manage (in consultation with nephrologist and surgical colleagues)
 - Vesico-ureteric junction and pelvic-ureteric junction obstruction
 - Duplex – systems
 - Ureterocele
 - Posterior urethral valves.
 - Vesicoureteric reflux
- Ability to liaise with nephrologist, radiologist, obstetrician and surgeon in counselling of mothers with an antenatal diagnosis of a urinary tract malformation in their baby.

5.1.2 Neuropathic Bladder

- When to suspect neuropathic bladder: clinical conditions associated with neuropathic bladder
- The role of urodynamic studies in assessing bladder dynamics.
- Management of bladder and bowel dysfunction in conjunction with the appropriate specialist.

5.1.3 Renal Disease

5.1.3.1: Nephrotic syndrome

- Definition of nephrotic syndromes including congenital and infantile nephrosis
- Know the aetiology, pathophysiology and pathogenesis and their corresponding clinical signs & symptoms
- Diagnosis and management of nephrotic syndrome including the available treatment options for steroid resistant nephrotic
- Understand the investigations including the indications for renal biopsy.

- Understand the complications of the nephrotic state including that resulting from therapy
- Know pathological diagnosis that portend poor prognosis

Be able to counsel parents on the challenges of managing the child with nephrotic syndrome.,

5.1.3.2 Nephritic Syndrome

- Common causes with emphasis on postinfectious glomerulonephritis and rapidly progressive glomerulonephritis
- Diagnosis and management including complications.

5.1.3.3 Haematuria And Proteinuria

- Know the causes and differential diagnosis of these signs
- Differentiate glomerular bleeding from non-glomerular bleed
- Know the steps in evaluation of a patient with haematuria or proteinuria
- Know the indications for renal biopsy
- Appreciate the danger persistent proteinuria poses and measures to control it

5.1.3.4 Hypertension

- Definition
- Correct technique of blood pressure measurement
- Common aetiology of hypertension according to age
- Clinical evaluation of a child with hypertension
- Complications of hypertension including hypertensive encephalopathy and its management
- Management of acute and chronic hypertension.

5.1.3.5 Nephrolithiasis

- Understanding of the aetiology, risk factors, clinical presentation, and investigation
- Medical and surgical treatments.

5.1.3.6 Tubular and Metabolic Dysfunction

- Presentation of tubular and metabolic disorders including:
 - Renal tubular acidosis.
 - Cystinosis and other Fanconi syndromes
 - Hypophosphataemic rickets.
 - Bartter's and Gitelman syndromes
 - Tubular disorders leading to hypercalciuria
 - Nephrogenic diabetes insipidus,

Understanding when to refer for specialist care

5.1.3.7 Acute Renal Failure

- Pathophysiology and pathogenesis
- Common causes Diagnosis, management and complications

- Know Appropriate initial investigation and management of ARF: when to refer to the specialist.
- Basic knowledge of the principles underlying dialysis and plasmapheresis and their indications

5.1.3.8 Chronic Renal Failure

- Definition of chronic kidney disease
- Common causes of chronic renal failure in children including congenital anomalies of the kidney and urinary tract
- Essential features of chronic renal failure and how to differentiate between chronic and acute renal failure
- Measures to slow down progression of renal injury to end stage renal failure

Dietary advice for a child in chronic renal failure

5.1.3.9 Multi-disciplinary Approach to Care

- The importance of a team approach in the management of nephrological disorders and to understand its advantages and limitations.
- Planning handover to adult services.

5.2 Skills

5.2.1 Clinical Skills

- Perform and interpret urinalysis.
- Understand the use and limitations of commonly used dipsticks.
- Interpretation of electrolyte and blood gas values.
- Emergency treatment of acute renal failure.

5.2.2 Technical Skills

- Obtain urine by appropriate methods including suprapubic tap.
- Catheterisation of the bladder.

5.3 Attitude

Understanding the psychological stresses associated with end stage renal failure and its management.

5.4 Particular Problems

Ability to recognize, initiate diagnostic tests and outline the management of:

- Renal abnormalities detected in fetal life.
- Hypospadias.
- Undescended testes and retractile testes.
- Vulvo-vaginitis and discharge.
- Reflux and reflux nephropathy.
- Obstructive uropathy.
- Acute urinary obstruction.
- Henoch Schonlein purpura.

- Nephrotic Syndrome.
- Haemolytic uraemic syndrome.
- Acute glomerulonephritis.
- Familial nephritides.
- Renal calculi: hypercalciuria.
- Renal causes of rickets.
- Sickle cell nephropathy
- Intra vascular haemolysis
- Renal tumours.
- Renal tubular disorders.
- Pre-endstage renal failure.
- Contraindications for circumcision.

6 ENDOCRINOLOGY AND METABOLISM

6.1 Knowledge

6.1.1 Common endocrine disorders

- Epidemiology, aetiology, presentation and management of common endocrine disorders
- Presentation, complications and management of diabetes mellitus in infancy, childhood and adolescence.
- Presentation, complications and management of thyroid disorders,

6.1.2 Growth

- Ability to conduct anthropometric assessment.
 - Assessment of skeletal maturation.
 - Know the causes of growth disorders
 - Initiate diagnostic tests and outline the management of growth disorders.
 - Know when children with short or tall stature, require endocrinological investigation.
 - Pathophysiology of abnormal growth: short stature, growth delay, excessive growth.
- Obesity: causes, management and complications.

6.1.3 Sexual Development

- Know how to conduct sexual developmental assessment
- Know the causes and possible investigations of precocious or delayed sexual development
- Be able to recognise ambiguous genitalia and its early management

6.1.4 Inborn Errors of Metabolism

- Clinical features of inborn errors of metabolism Understand the principles of prenatal diagnosis and neonatal screening.
Clinical symptoms, immediate investigations and management of common metabolic disorders
- Principles of dietary therapy in the common inborn errors of metabolism.

6.1.5 Other Metabolic Diseases

- Diagnosis and management of hypoglycaemia.
- Differential diagnosis of polyuria/polydipsia.
- Lipid biochemistry, lipid disorders, genetic diagnosis and clinical management.

- Metabolic bone disease and calcium disorders eg. Rickets.

6.2 Skills

6.2.1 Clinical Skills

Recognise, initiate and interpret diagnostic tests and manage the following Hypo and hyperthyroidism.

- Congenital adrenal hyperplasia.
- Early and late sexual development.
- Ambiguous genitalia.
- Manage diabetes ketoacidosis, hyperglycaemia, hypoglycaemia.
- Suspect that a child may have a metabolic disorder: initiate investigations and initial management and possible referral to a higher centre.

6.3 Attitudes

- Understand the importance of teamwork in diabetic care.
- Understand the psychological stress of diagnosis of metabolic disorders.
- Understand the ethnic and cultural differences in attitudes to metabolic disorders.
- Understand the challenges for the family of patients with progressive disorders
- Consult with expert colleagues on all aspects of diagnosis and management.

6.4 Particular Problems

Ability to recognize, initiate diagnostic tests and outline the management of:

- Abnormal growth.
- Abnormal sexual development.
- Thyroid disorders .
- Ambiguous genitalia.
- Adrenal disorders. Hypoglycaemia and hyperglycaemia.
- Polyuria/polydipsia.
- Hypo and hypercalcaemia.
- Consequences of treatment for malignancies on growth and endocrine functions.

7 HAEMATOLOGY/ONCOLOGY

7.1 Knowledge

7.1.1 Haematology

7.1.1.1 Anaemias

- Know the causes, presentation, investigation and management of acquired anaemias e.g. iron deficiency, megaloblastic anaemia, haemolytic – immune and non-immune, aplastic anaemia
- Know the causes, presentation, investigation and management of congenital anaemias e.g. Sickle cell anaemia, Thalassaemia, G6PD deficiency, Aplastic anaemia

7.1.1.2 Coagulation disorders

- Know the presentation, investigations and principles of management of hereditary coagulation disorders e.g Haemophilia A and B, Von Willebrand's disease
- .Know the causes, presentation, investigation and management of acquired coagulation disorders e.g vitamin K deficiency, DIC, thrombocytopenia, liver disease, renal disease

- Know the risk factors for, investigations and management of thrombosis

7.1.1.3 Transfusion of blood and blood products

Know the indications for and principles underlying transfusion of blood and blood products.
Know the indications and principles underlying bone Marrow transplantation.

7.1.2 Oncology

Know the genetic and environmental factors predisposing to childhood malignancy.

- Know the varied ways of presentation of malignancies in childhood.
- Know how to investigate the child with suspected malignancy.
- Know the principles of treatment of childhood malignancies, both immediate and long-term, of chemotherapy and radiotherapy.
- Know how to identify and manage acute complications eg febrile neutropaenia, tumour lysis syndrome
- Terminal/Palliative Care
 - Should know the principles of analgesia and other symptom control. Should know how

7.2 Skills

7.2.1 Clinical skills

- Be able to interpret results of FBC's and differential counts at different ages.
- Know the indications for further investigation e.g. film comment, biopsy, bone marrow aspiration
- Interpretation of basic coagulation screen results.
- The appropriate use of blood and blood products.
 - Documentation requirements for blood transfusion.
 - Identification and recording of blood transfusion reactions.
- Be able to order appropriate investigations and manage of thrombosis – in discussion with the specialist.

7.2.2 Technical Skills

- Perform fine needle aspirate .
- Perform a bone marrow aspirate
- Administer chemotherapy.

7.3 Attitudes

- Be aware that parents of children with minor illness may suspect underlying malignancy.
- Communicate e bad news of childhood malignancy
- Understand the impact of childhood malignancy, and its treatments, on the child and family.
- Recognise the need for multidisciplinary management of children with terminal disease – and their families – including psychological care of the child.
- Should be familiar with the principles of palliative care.

7.4 Particular Problems

Ability to recognize, initiate diagnostic tests and outline the management of:

- Idiopathic thrombocytopenic purpura.
- Anaemia Beta thalassaemia.
- Sickle cell disease.
- Haemophilia.
- Lymph node enlargement.
- Hepatosplenomegaly.
- Masses detected clinically or radiologically.

8 SKIN AND RELATED TISSUES

8.1 Knowledge

- Know the normal structure and function of the skin, hair, nails and teeth.
- Know the mechanisms of dental decay: prevention.
- Know the cutaneous and mucosal manifestations of systemic diseases. Know the management of common problems, e.g. eczema, acne, impetigo, napkin rash, psoriasis, pityriasis.
- Know common infections of the skin: viral, bacterial, fungal and parasitic

8.2 Clinical Skills

- Should be able to describe dermatological abnormalities in terms of morphology, configuration and distribution.

8.3 Technical Skills

- Sample blister fluid.
- Observe skin biopsy.
- Observe treatment of warts eg using cryotherapy.

8.4 Attitudes

- Be aware of the misery of a child with eczema and the stress it may cause to the parent/child relationship.
- Know how to counsel people with severe dermatological problems

8.5 Particular Problems

Should be able to recognize, initiate diagnostic tests and outline the management of:

- Scabies and pediculosis.
- Eczema
- Seborrhoeic dermatitis.
- Naevi.
- Drug eruptions.
- Alopecia.
- Urticaria.
- Neurocutaneous syndromes.
- Bullous eruptions.
- Ectodermal dysplasias.
- Stings.
- Snake bites.

9 CARDIOVASCULAR SYSTEM

9.1 Knowledge

- Know the functional consequences associated with common congenital and acquired heart defects.
- Know the association of cardiac disorders with other abnormalities.
- Know the complications of common heart diseases.
- Know the indications for bacterial endocarditis prophylaxis and the appropriate regime.
- Know the indications and limitations of cardiac investigations.
- Know the causes, investigation and management of hypertension
- Know the aetiology, types and management of arrhythmias

9.2 Skills

9.2.1 Clinical Skills

- Be able to recognise common heart problems.
- Be able to recognise the neonate with CHD who requires immediate cardiac intervention.
- Be able to recognise innocent cardiac murmurs.
- Be able to recognise the signs of heart failure in the infant and child.
- Ability to interpret chest X-rays including pulmonary vascularity and chamber size.
- Be able to interpret ECG..
- Be able to differentiate cardiac and pulmonary causes of respiratory distress and cyanosis in the newborn.
- Be able to recognise and manage cyanotic spells in Tetralogy of Fallot.
- Ability to diagnose and treat cardiac arrhythmias.
- Ability to institute treatment of acute hypertension.

9.2.2 Technical skills

- Be able to measure and interpret blood pressure at different ages.
- Be able to perform and interpret ECG

9.3 Particular Problems

Ability to recognize, initiate diagnostic tests and outline the management of:

- The child with a heart murmur.
- Medical treatment of persistent ductus arteriosus.
- Coarctation of the aorta in infancy and childhood.
- Arrhythmias including SVT.
- Hypertension.
- Infective endocarditis.
- Myocarditis, pericarditis
- Rheumatic fever and rheumatic heart disease.
- The child with cyanotic congenital heart disease.
- The child with hypercyanotic spell .
- The child with heart failure.
- Endomyocardial fibrosis

10 COMMUNITY CHILD HEALTH

10.1 Knowledge

- To know the influences on Health and Disease: Social and Environmental Factors
 - Effects of disadvantage on health and development: physical, mental, emotional, social, educational.
 - Identification of disadvantaged groups.
- To know the organisation and provision of healthcare
 - Definition and structure of primary, secondary and tertiary care.
 - The concept of a combined paediatric and community child health service.
 - Personal child health records.
 - Child health clinics.
 - School health program.
 - Role of international organizations, eg WHO, UNICEF.
- To be familiar with Child Health Policies
 - National and international
 - Opportunities for and methods of child health promotion
 - Immunisation: detailed knowledge of theory and practice.
- To be familiar with issues related to long-term illness and disability
 - The importance of multidisciplinary assessment of children and their families
 - Understanding the role of the paediatrician as liaison person and advocate in assessment and care.
 - Role of the special schools.
- To understand ethics of Child Care
 - Child care and the Law.
 - Issues of consent to medical procedures and research.
 - Child Abuse and Child Protection
 - Conforming to local guidelines for management of child abuse: reference to senior colleagues: sharing information with other agencies.
 - Role of other agencies including social services and police in child care and protection.
- To understand the social, physical and emotional problems of the disadvantaged Child
 - Street children
 - Refugees
 - Extreme poverty
 - Children with special needs
 - The child in conflicts and disaster
 - Child labour

10.2 Skills

- Ability to elicit accurate information about a family's social circumstances with sensitivity.
- Be able to recognise the clinical features of abuse: neglect, physical, emotional and sexual
- To be able to work with a multidisciplinary team and understand the importance of communicating with other agencies.
- Should be able to write comprehensive medical reports
- To be able to play a leading role in advocacy

- To be able to provide health information/education to children and adolescents.
- To be able to administer vaccines
- To be able to formulate investigations for child with suspected disability.

11 ACCIDENTS AND POISONINGS

11.1 Knowledge

- To know the causes and management of common childhood injuries, burns, accidents and poisonings.

11.2 Skills

11.2.1 Clinical skills

To be able to recognise and manage the seriously ill child

- To be able to assess and institute the initial management of the seriously injured child including head injury.
- To be able to use the Glasgow / Blantyre coma scales in the assessment of the child.
- To be able to assess the percentage of skin burnt at different ages and initiate management.
- To be able to treat common poisonings, eg drugs (iron, paracetamol, tricyclic antidepressants, opiates) and chemicals (kerosene, DDT, parazone)

11.2.2 Technical Skills

- Cardiopulmonary resuscitation.
- Cervical spine immobilization.
- Emergency vascular access.
- Thoracocentesis.
- Gastric lavage

11.3 Particular Problems

- Anaphylaxis.
- The child with burns.
- Child abuse.
- Head injury.
- Hypothermia.
- Near drowning
- Kerosene and alcohol ingestion

12 THERAPEUTICS

12.1 Knowledge

To know the principles underlying the prescription of drugs

To know the common adverse effects of drugs and their classification

12.2 Skills

12.2.1 Clinical Skills

- To be familiar with the national Essential Medicine List and hospital formulary.
- To be aware of the palatability of commonly used drugs.
- Adjustment of drug dosage according to disease state and age .
- To be competent in adherence counselling To be familiar with procedure of reporting adverse events

12.2.2 Technical Skills

- To be familiar with use of various inhaler and nebulising devices.
- To be familiar with administration of medications by different routes

12.3 Attitudes

- To have a close liaison with pharmacy staff.
- To unnecessary prescription and polypharmacy.
- To recognise the importance of cost when assessing regimes of equal efficacy.
- Ethics of prescribing very expensive drugs in terminal disease states and rare conditions eg growth hormone, erythropoietin.

13 GENETICS AND CONGENITAL DEFECTS

13.1 Knowledge

- To know the importance of cytogenetics and molecular genetics laboratories and the available diagnostic tests.
- To be aware of the availability of prenatal diagnosis.
- To know of the techniques used in foetal medicine: - ultrasound, amniocentesis, chorionic villus sampling, foetal blood sampling, fetoscopy.
- To know the common genetic disorders and the management of their complications.
 - Common chromosomal abnormalities in Down's Syndrome Fragile X.
 - Common multi system mendelian disorders eg. Neuro fibromatosis type I.
 - Common isolated birth defects eg. Cleft lip and palate.

13.2 Clinical Skills

- To be able to assess the dysmorphic child.
- Ability to order appropriate investigations (e.g, photography, chromosomal analysis, skeletal X-rays, renal/cardiac scans, DNA testing as appropriate).

13.3 Attitudes

- To recognise the need for multidisciplinary management of the dysmorphic child
- To be sensitive to the challenges faced by the family of an affected child¹⁴

14 MUSCULOSKELETAL SYSTEM

14.1 Knowledge

- To know the causes, presentation, complications and management of common congenital and acquired musculoskeletal disorders eg dysplastic hip, infections Rickets,.

14.2 Clinical Skills

- Ability to do newborn hip examination.
- To be able to diagnose and manage acute osteomyelitis and septic arthritis.
- To be able to investigate the child with a limp.
- Be able to identify and investigate a child with muscular dystrophy
- To be able to interpret limb X-rays.

15 RESPIRATORY SYSTEM WITH EAR, NOSE AND THROAT

15.1 Knowledge

- To know the risk factors for respiratory disorders including smoking and pollutants.
- To know the causes and management of upper airway obstruction including croup syndromes.
- To know the types of upper respiratory tract infections(including otitis media and mastoiditis) and their management.
- To understand the concept of Acute Respiratory Infection (ARI) in the context of primary health care. –.
- To know common causes, presentation, complications and management of disorders of the lower respiratory tract.
- To know the types of congenital respiratory disorders
- : To know the causes, diagnosis and management of acute and chronic respiratory failure.
- To know the causes and management of hearing impairment

15.2 Skills

15.2.1 Clinical Skills

- Ability to recognise the signs of respiratory illness and distress at different ages
- Ability to determine the severity of respiratory illness and manage appropriately.
- To recognise when not to examine the throat.
- To be able to differentiate upper from lower airway obstruction
- To interpret results of common imaging procedures, blood gases, oximetry and spirometry and use appropriately to guide management.
- To recognise the need for ventilatory support in patients with incipient respiratory failure
- To be able to recognise and manage the atopic child
- To be able to provide appropriate care for acute and chronic asthma according to established international guidelines
- To be able to provide appropriate care for tuberculosis according to national guidelines
- .
- To recognise and diagnose hearing impairment and consult appropriately.
- To educate parents and children with chronic respiratory disease e.g asthma

15.2.2 Technical Skills

- To be able to obtain appropriate cultures eg throat, upper nasal, nasopharyngeal swab.
- To be able to perform tuberculin test (Mantoux test).
- To be able to demonstrate the use of different inhaler devices.
- To be able to perform thoracocentesis for pleural effusion, pneumothorax etc.
- To be able to use and interpret results of peak flow rates.

15.3 Attitudes

- To be aware of the needs of children with hearing impairment – and those of their families.
- To be familiar with the impact of chronic respiratory illness on the child and family

15.4 Particular Problems

- Epistaxis.
- The child with wheeze
- The child with stridor
- The child with atopy
- Cleft palate.
- Pneumonias
- Bronchopulmonary dysplasia.
- Pulmonary TB
- Interstitial lung disease.
- Respiratory sequelae of neuromuscular disorders.
- Respiratory sequelae of skeletal disorders.
- Sleep apnoea.

16 INFECTIOUS DISEASES

16.1 Knowledge

- To know the causes, presentations and complications of common infectious diseases in the country To be familiar with immunisable diseases
- To be familiar with nosocomial infections and their spread
- To be familiar with the basic principles of infection control.
- To be familiar with notifiable communicable diseases.

16.2 Skills

16.2.1 Clinical Skills

- To recognise early danger signs, eg incipient shock, evidence of DIC, oliguria.
- To be able to investigate the child with pyrexia of unknown origin.
- To be able to use antimicrobial agents appropriately
- To be familiar with hospital's antibiotic policies.
- To be able to avoid nosocomial infection in everyday practice.
- To be able to initiate treatment of septic shock.
- To be able to institute appropriate investigation for the diagnosis of, and management of tuberculosis and atypical mycobacterial disease.
- Ability to investigate, diagnose and manage parasitic diseases

- To be able to recognise and manage Kawasaki disease and other infectious vasculitides. Should be able to diagnose and treat , early and late onset neonatal infection.
- To be able to recognise and institute initial management of the childwith HIV/AIDS as well as counselling of the whole family

16.2.2 Technical Skills

- Ability to collect and safely handle microbiological specimens.
- Ability to perform and interpret Mantoux test.

16.3 Attitudes

- To appreciate the scope and limitation of the laboratory in diagnosis and management of infectious diseases.
- To recognise the special needs of children nursed in isolation cubicles.

16.4 Particular Problems

- Exanthemata including measles, rubella and fifth disease.
- Pertussis.
- Recurrent infections.
- Congenital and newborn infections.
- Tuberculosis.
- Infection in the immunocompromised child.
- HIV/AIDS.

17 GASTROENTEROLOGY, HEPATIC AND BILIARY SYSTEM

17.1 Knowledge

- Know the causes, presentation, investigation and treatment of common congenital gastrointestinal abnormalities. To know the causes, presentation and management of a child with acquired GI disorders.
- Know the indications and usefulness of relevant imaging and endoscopic techniques.
- Know the presentation of neonatal liver disease.

17.2 Skills

17.2.1 Clinical Skills

- .
- To be able to assess hydration status and plan fluid therapy.
- To be able to interpret plain X-ray films and contrast studies.
- To be able to institute enteral and parenteral nutrition.
- .

Able to recognise and order appropriate investigations of children with chronic diarrhoea, recurrent abdominal pain.

17.2.2 Technical Skills

- To observe Liver biopsy and endoscopy

17.3 Particular Problems

- Pyloric stenosis.
- Intussusception.
- Hirschsprung disease.
- Peptic ulceration and helicobacter pylori infection.
- Vomiting and reflux.
- Constipation.

- Recurrent or protracted diarrhoea.
- Acute and recurrent abdominal pain.
- Persistent jaundice in the young infant.
- Intestinal bleeding.
- Intestinal obstruction.
- Differentiation of abdominal masses.
- Liver failure.

18 NUTRITION

18.1 Knowledge

-
- To know the importance of maternal nutrition before and during pregnancy and during lactation .
- To know the nutritional requirements during infancy, childhood and adolescence To be familiar with the nutritional requirements of the preterm and small for age infant.
- To be familiar with the, Baby Friendly Hospital Initiative and its scientific basis.
- To be familiar with infant Feeding recommendations in context of HIV.
- To know the contra indications of breast feeding
- To be familiar with recommendations for complementary feeding. .
- To know the common feeding problems in infancy, eg possetting, vomiting, “colic”.
- To know the interaction between diet and disease;
- To be familiar with principles of dietary modification in the management of systemic diseases, eg diabetes, chronic renal failure. To be able to define acute and chronic malnutrition
- To be familiar with nutritional disorders such as severe acute malnutrition, micronutrient deficient disorders. .
- To know the principles of enteral and parenteral nutrition; indications and complications.
- To understand the risk factors and management of a child with obesity or overweight.

18.2 Skills

18.2.1 Clinical Skill

- To be able to take a dietary history to estimate intake of major nutrients: use of the dietetic service including home/school nutritional assessment.
- To be able to assess the nutritional status using anthropometry, clinical examination and laboratory support..
- To be able to counsel on healthy eating for normal children.
- To be able to outline the appropriate diet for children with specific diseases, eg acute severe malnutrition, , diabetes mellitus chronic renal failure.
- To be able to advice on specific short-term nutritional problems, eg, nutrition in children with burns following intensive care and diarrhoea .

18.3 Technical Skills

1. To be able to take anthropometric measurements and be competent at using and interpreting the different growth curves and charts.

18.4 Attitudes

- Understanding the importance of good nutrition in childhood in reducing disease in adult life.

18.5 Particular Problems

18.5.1 Ability to recognize, initiate diagnostic tests and outline the management of:

- PEM
- Failure to thrive.
- Obesity.
- Deficiencies of specific nutrients, eg rickets, iron deficiency, protein/energy.
- Food allergy, food intolerance, food aversion.

19 CENTRAL NERVOUS SYSTEM (CNS)

19.1 Neurological and Muscular Disorders

19.1.1 Knowledge

- To know the causes, presentations and management of common neuromuscular problems, eg cerebral palsy, muscular dystrophies.
- To know the classification of epileptic syndromes and their presentation at different ages.
- To know the principles of use of anti-epileptic drugs (AEDs)
- To know the causes, investigations (if necessary) and management of headaches
- To know the common causes of disability and their management
- To understand the principles of neurological investigations, eg nerve conduction, EEG, electromyogram, radiological imaging, muscle biopsy.

19.1.2 Skills

19.1.2.1 Clinical Skills

- To be able to perform a complete neurological assessment
- To recognise neurological complications of systemic disease.
- To be able to recognise the disabled child and plan his rehabilitation

19.1.2.2 Technical Skills

- To be able to perform an LP and transilluminate the skull
- To be able to perform a subdural tap and a ventricular tap.

19.1.3 Attitudes

- To appreciate the effect of seizures and disability on the individual patient and the family.

19.1.4 Particular Problems

- CNS infections
- The unconscious child
- Head injury.
- Cerebral palsy.
- Headaches

- Seizures
- Sensory deficits – hearing and visual impairment.
- Spina bifida and its associations
- Hydrocephalus, microcephaly, craniosynostosis.
- Muscular dystrophies
- Increased intracranial pressure.
- Space-occupying lesion.
- The floppy infant.

19.2 Behavioural and Psychological Problems

19.2.1 Knowledge

- To know the normal emotional and behavioural development of a child.
- To know the common behavioural problems at different ages and their management, eg the crying baby, poor sleep patterns, enuresis and encopresis.
- To know the common psychological problems affecting mood, conduct, perception and communication and their management

19.2.2 Skills

19.2.2.1 Clinical Skills

- To be able to take a basic psychiatric and neurodevelopmental history.
- To be able to interview children at all ages regarding psychiatric symptoms.
- to be able to involve the family in the interview and management process
- To be able to recognise common behavioural problems like ADHD,autism

19.2.3 Attitudes

- To appreciate the psychological effects of physical illness
- To appreciate the behavioural difficulties in the child with chronic, terminal, disfiguring and disabling diseases.

19.2.4 Particular Problems

- Major disturbances of mood, perception and communication associated with:
 - Schizophrenia
 - Autism, Asperger syndrome
 - Antisocial behaviour
- Truancy and school phobia.
- Adolescent problems.
- The child “who seems strange” or “doesn’t fit in”.

19.3 Developmental Paediatrics

19.3.1 Visual System

19.3.1.1 Knowledge

- To know the causes, presentation ,investigation and management of congenital and acquired visual disorders.
- To know the importance of genetic factors in ophthalmic disease.
- To know the relationship between systemic diseases and the eye

19.3.2 **Speech and Language**

19.3.2.1 **Knowledge**

- To know the common causes, investigations and management of developmental language delay
- To understand the role of speech therapist in disorders of language, phonology, articulation and feeding.

19.3.3 **Auditory System**

19.3.3.1 **Knowledge**

- To know the causes, presentation and management of hearing impairment.
- To understand the principles of hearing assessment
- to know the secondary effects of hearing impairment on behaviour and language.

19.3.4 **Skills**

19.3.4.1 **Clinical Skills**

- to be able to do fundoscopy To be familiar with tests of vision
- To be able to take a history of communication and language development.

19.3.5 **Attitudes**

- To be aware of the effects of visual, hearing and language impairment on development.
- To be aware of the challenges of the families of children with visual, hearing and language impairment –

19.3.6 **Particular Problems**

- Congenital blindness
- Eye Tumours.
- Failing vision in a school age child.
- The red eye.
- Papilloedema.
- The white pupil.
- Proptosis

19.4 **Learning Difficulties**

19.4.1 **Knowledge**

- To know the causes and presentation of learning difficulties
- To know the possible associated medical problems, eg epilepsy, physical disability, movement disorders
- To know the basis of psychological and educational evaluation tests in investigating learning difficulties.
- To know the principles of multidisciplinary approach in the management of learning difficulties; .

19.4.2 **Skills**

- To be able to take an appropriate history including behaviour, language, thinking, memory.
- To be familiar with developmental screening tests
- To recognise commonly associated syndromes, eg down syndrome, tuberous sclerosis, fragile X, Rett syndrome.

19.4.3 Attitudes

- To be aware of the social, behavioural, medical and educational consequences of learning difficulties
- To be aware of the role of educational specialists, psychologists and special need teachers in the management
- To be aware of the need for social integration.

19.4.4 Particular Problems

- Specific learning difficulties
Children with multiple disabilities.
- The deaf and blind child.

19.5 Adolescent Health

19.5.1 Knowledge

- To understand adolescent sexuality including contraception and sex education.
- To understand the influence of adolescence on health and disease

19.5.2 Skills

- To be able to communicate with adolescents, both with and without their parents.

19.5.3 Attitudes

- To be aware that adolescents have particular health needs which are distinct from children and adults.
- To understand that young people should be allowed to take a lead in decisions surrounding their own treatment and health.
- To understand the importance of planning transition to adult-based care.

19.5.4 Particular Problems

- Anaemia
- Adolescent pregnancy.
- Sexually-transmitted diseases.

Fellowship in Paediatrics & Child Health GCPS

OBJECTIVES: To produce an experienced specialist with leadership skills in general or sub-specialty paediatrics, research and management.

- Pre-entry Qualification:**
1. Membership of GCPS
 2. Post membership work experience in Ghana of at least 1 year with at least 6 months spent in a district hospital either during the membership training or after the membership.
 3. Registered with Medical & Dental Council as Paediatrician.
 4. Attendance of a Health Administration course at GIMPA (or its equivalent) would be an added advantage
 5. Should have attended a research methodology course.

Exit Qualification: Fellow in General Paediatrics or Fellow in Paediatric sub-specialty.

Duration of Training: General Paediatrics – 2 years.
Paediatrics sub-specialty – minimum 2 years.

Training

1st Year

This will be in a Teaching Hospital (TH) in Ghana.

The resident

- Will work in a supervisory role and consolidate General Paediatric experience.
- Will participate in both inpatient & outpatient services in sub-specialty area of choice (applies to those pursuing General Paediatrics as well).
- Will conduct an original research study and must submit the proposal to the Faculty for approval within 3 months of commencing the residency.
 - a. For those pursuing a General Paediatrics Fellowship, this may be either a hospital-based or community-based study.
 - b. For those pursuing a sub-specialty the study topic should be from the sub-specialty area. This may be either a hospital - based or community - based study.

2nd Year

- General Paediatrics – this year can be fully spent in a TH in Ghana or 3-6 months of it can be in a Paediatric Department in a TH in another country.
- Paediatrics Sub-specialty – this year must be spent in a TH which has the facilities for training doctors in that sub-specialty (in Ghana or outside the country). The total duration for training in the sub-specialty may exceed 2 years.

- **Continue with activities from 1st year**

Candidates shall keep a log book of training activities throughout the period of training

Certification (Examination)

After a minimum of 2years training the trainee may present himself/herself for examination.

This will consist of a 2-hour viva voce covering:

1st hour	General	Subspecialty	Social
General Paediatrics	30 min	15 min	15 min
Sub- specialty	15 min	30 min	15 min

For candidates pursuing a sub- specialty, the examining panel shall consist of 2 specialists in that discipline and 1 generalist. For candidates pursuing general paediatrics the examining panel shall consist of 3 generalists.

2nd hour

This will consist of the defence of original research. This will be submitted to the Chief Examiner at least 3 months prior to the date of examination