

Curriculum

FNB Fellowship



Paediatric

Gastroenterology

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I. INTRODUCTION

The specialty of Pediatric Gastroenterology developed as a Sub-Specialization of Pediatrics and is predominantly concerned with the care of pediatric patients with gastrointestinal problems. It is a branch of Pediatrics concerned with prevention, investigation and therapy of and research into diseases involving gastrointestinal disorders.

II. PROGRAMME GOAL & OBJECTIVES

1. Programme Goal

1. To prepare pediatric gastroenterologists who would be able to meet and respond to the changing healthcare needs and expectations of the society.
2. To develop pediatric gastroenterologists who possess knowledge, skills and attitudes that will ensure that they are competent to practice gastroenterology safely and effectively.
3. To ensure that they have appropriate foundation for lifelong learning and further training in their specialty.
4. To help them develop to be critical thinkers and problem solvers when managing health problems in the community they serve.

2. Programme Objectives

The educational and training process aims to produce Pediatric gastroenterologists who:

- Can address all aspects of healthcare needs of patients and their families.
- Maintain highest standards appropriate in their professional field.
- Are aware of current thinking about ethical and legal issues.
- Are Able to act as safe independent practitioners whilst recognizing the limitation of their own expertise and are able to recognize their obligation to seek assistance of colleagues where appropriate.
- Are aware of the procedures and able to take appropriate action, when things go wrong, both in their own practice and in that of others.
- Will be honest and objective when assessing the performance of those they have supervised and trained.
- Can take advantage of information technology to enhance all aspects of patient care.

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- Can develop management plans for the “whole patient” and maintain knowledge in other areas of medicine which impinge on the specialty of Pediatric Gastroenterology.
 - Understand that effective communication between them and their patients can lead to more effective treatment and care.
 - Apply appropriate knowledge and skill in the diagnosis and management of patients.
 - Establish a differential diagnosis for patients presenting with medical problems by the appropriate use of the clinical history, examination and investigations.
 - Are competent to perform the core investigations and procedures required in their specialties.
 - Develop clinical practice which is based on an analysis of relevant clinical trials and have an understanding of their research methodologies.
 - Are able to apply the knowledge of biological and behavioral sciences in clinical practice.
 - Are able to identify and take responsibility for their own educational needs and attainment of these needs.
 - Have developed the skills of an effective teacher.

III. TEACHING AND TRAINING ACTIVITIES

The fundamental components of the teaching programme should include:

1. Case presentations & discussion- once a week
2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation (by rotation departments and subspecialties)- once a week
5. Faculty lecture teaching- once a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan) interesting and difficult case unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical

in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

Theoretical: The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

Symposia: Trainees would be required to present a minimum of 12 topics based on the curriculum in a period of two years to the combined class of teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.

Clinical: The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

Bedside: The trainee would work up cases, learn management of cases by discussion with faculty of the department.

Journal Clubs: This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.

Research: The student would carry out the research project and write a thesis/ dissertation in accordance with NBE guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

Training Rotations:

Specialty training shall comprise of rotations in:

- Inpatients
- Outpatients
- Pediatric surgery

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- Other relevant departments as deemed fit (eg. Adult Gastroenterology and endoscopy/ Radiology/ Liver Transplant – these are not a must and can be modified depending upon the available local expertise)

IV. SYLLABUS

OVERVIEW

The training is designed to develop both the generic and specialty- specific attributes necessary to practice independently as a consultant pediatric gastroenterologist. The aim is to train individuals to provide the highest standard of service to patients with gastrointestinal disorders. This includes the development of positive attributes towards lifelong learning and the ability to adapt to future technological advances and the changing expectations of society.

The educational process in pediatric gastroenterology aims to provide basic knowledge, intellectual, clinical and transferable skills to produce competent gastroenterology specialist. These specialists will be capable of providing specialized care of the highest order to pediatric patients with gastrointestinal disorders in the community as well as clinical tertiary centers. They shall recognize the health needs to the community and carry out professional obligations ethically and keeping their standards by engaging in continuing medical education.

Scientific basis of Pediatric Gastroenterology

- Basic principles in Gastroenterology
- Explain anatomy and physiology of alimentary system.
- Explain gastrointestinal biochemistry
- Apply clinical skills to diagnose and manage gastrointestinal and hepatobiliary disorders.

Diseases and presentations

Acute and chronic diarrhea

- Know the causes and symptoms of acute and chronic diarrhoea
- Be familiar with local isolation policies
- Know about oral and intravenous fluid therapy
- Understand the scientific principles for oral and intravenous fluid therapy
- Recognize features in the presentation which suggest serious pathology,

e.g. haemolytic uraemic syndrome, pelvic appendicitis, intestinal obstruction

- Know work-up and management of acute diarrhea
- Know the causes of chronic diarrhea and relevant work-up/ management both enteral and total parenteral nutrition
- Know to recognize and manage CMPA/ IBD/ celiac disease and intestinal lymphangiectasia
- Be able to evaluate complex case of malabsorption

Approach to vomiting

- Know causes of vomiting/ appropriate evaluation and management
- Recognize features in the presentation which suggest serious pathology,
- e.g. appendicitis, intestinal obstruction, malrotation, ICSOL,

Congenital abnormalities and the newborn

- Know the presenting features of congenital abnormalities including trachea-oesophageal fistula. Malrotation, bowel atresias, Hirschsprung's disease, abdominal wall defects, diaphragmatic hernia
- Be familiar with potential associated abnormalities.
- Know when the antenatal transfer to a neonatal Surgical centre should be considered
- Institute appropriate emergency treatment
- Recognize the need to liaise with surgeons
- Institute appropriate emergency treatment and be able to assess the fitness of the baby and the need to transfer to a specialist centre.
- Recognize when the bowel might be compromised
- Recognize the need to liaise with surgeons and when this urgent
- Know the full range of presenting features of congenital abnormalities of the intestinal tract.
- Be able to diagnose and manage care for the child with shorter bowel syndrome.

Inflammatory bowel disease

- Be familiar with uncommon and unusual manifestations of inflammatory bowel disease
- Know and recognize the macroscopic and microscopic features of Crohn's

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- disease, ulcerative colitis and intermediate colitis
 - Be able to recognize common extra-intestinal manifestation of IBD
 - Be able to manage all forms of IBD but especially severe cases including fistulas
 - Anticipate and manage the complications of IBD, including malnutrition, osteoporosis and dysplasia/ cancer.
 - Know the indications of surgery in IBD
 - Be familiar with anti-inflammatory drugs and immune suppression used to manage IBD
 - Be familiar with novel agent for treating IBD and possess an open attitude to their use in research protocols

Celiac disease

- Know and recognize the histopathological changes in celiac disease.
- Know the precise level of risk, short and long-term complications of celiac disease.
- Be able to conduct a gluten challenge safely and measure adherence to a gluten free diet by endoscopy if necessary.

Upper and lower Gastrointestinal bleeding

- Know the cause of upper and lower gastrointestinal bleeding
- Understand the potentially life threatening nature of this condition
- Assess the severity of this condition
- Institute appropriate emergency treatment
- Recognize features in presentation which suggest serious pathology
- Be able to investigate and manage upper and lower GI bleeding
- Recognize and be able to resuscitate a child with a significant GI bleeding

Motility problems including gastro-oesophageal reflux and oesophagitis

- Know the range of presentations of gastro-oesophageal reflux and oesophagitis in otherwise well infant's children and also in disabled children.
- Recognize the range of signs and symptoms associated with gastro- oesophageal reflux and oesophagitis
- Manage mild and moderate gastro-oesophageal reflux and recognize when to refer.
- Be able to manage severe gastro-oesophageal reflux disease.

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- Be able to manage severe dysphagia
 - Be able to diagnose and treat H. Pylori infection in young children and recurrent episodes in adolescents.
 - Be able to perform and interpret intestinal transit studies
 - Know the indications for the surgical treatment of gastro-oesophageal reflux disease and how to manage complications of surgery
 - Pseudo Obstruction

Chronic or recurrent abdominal pain

- Know the possible biological, psychological and social contributing factors in chronic or recurrent abdominal pain.
- Know which features suggest that reassurance rather than investigation is needed.
- Recognize features in the presentation that suggest the importance of different etiologies
- Be able to refer appropriately to psychology when required
- Consider when there might be child protection issues
- Be aware of different management strategies for irritable bowel syndrome (IBS)
- Be able to manage patients with IBS

Pancreatic diseases

- Know about exocrine pancreatic dysfunction including cystic fibrosis and Shwachman-diamond syndrome
- Know the cause of acute and chronic pancreatitis
- Know the management of chronic pancreatitis and its complications
- Indications for ERCP/ surgery/ celiac plexus block
- Be able to prescribe Enzyme supplements

Infantile Cholestasis

- Know the cause of intra and extra hepatic cholestasis
- Understand the clinical manifestations of cholestasis
- Know the potential diagnosis and jaundice, particularly the differential between biliary atresia and other forms of infantile cholestasis.
- Understand the various genetic basis of cholestasis syndromes
 - Know the reasons behind nutritional deficiencies in cholestasis and chronic liver disease.

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- Understand the clinical manifestations of nutritional deficiencies
 - • Understand the clinical manifestations of nutritional deficiencies particularly found in liver disease
 - Know the special nutritional formulae and supplements and the indications for their use.
 - Be able to identify infantile cholestasis and initiate appropriate medical treatment and investigations
 - Be able to interpret blood, ultrasound and biopsy results and understand their importance and limitations in reaching diagnosis.
 - Be able to interpret blood, ultrasound and biopsy results and understand their importance and limitations in reaching diagnosis
 - Be able to identify treatable causes of infantile cholestasis such as metabolic and infectious conditions
 - Be able to counsel parents about the cause of cholestasis and give a realistic prognosis
 - Be able to recognize and assess nutritional deficiencies and manage appropriate medical treatment and investigations

Hepatosplenomegaly

- Know the causes of cirrhosis
- Understand the pathophysiology of portal hypertension
- Know other causes of ascites
- Know the causes of hepatic and extra-hepatic masses
- Know about storage disorders
- Know about haematological malignancies
- Know about peripheral stigmata of liver cell failure
- Be able to identify hepatosplenomegaly and other abdominal masses and manage appropriate treatment investigation
- Be able to make a diagnosis of cirrhosis, hepatic malignancies and metabolic conditions presenting in older children
- Be able to manage appropriately ascites and SBP
- Be able to manage refractory ascites and SBP
- Be able to recognize stigmata of liver cell failure

Viral hepatitis and immune disorders

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- Understand the serology, molecular diagnostics and their prognostic value in hepatotropic viruses
 - Understand the screening tests used to detect hepatotropic viruses
 - Understand the immune basis of some liver disorders
 - Be able to identify viral and immune liver disorders and initiate appropriate medical treatment and investigations
 - Be able to interpret immunological profiles related to auto-immune liver disorders
 - Be able to interpret immunological profiles related to auto-immune liver disorders especially atypical patterns

Metabolic liver disease

- Know the pathophysiology of metabolic conditions
- Know the pathophysiology of metabolic conditions affecting the liver and recent advance in treatment
- Understand the management of these conditions
- Be able to discuss metabolic problems with consultants in metabolic medicine

Acute liver failure

- Be familiar with causes of acute liver failure
- Be familiar with the complications of acute liver failure
- Know the management of paracetamol poisoning
- Know the causes of acute liver failure
- Recognize the need to discuss the case with the liver unit early
- Be able to assess the severity and complications of this condition
- Be able to initiate appropriate resuscitation and liaise early with the pediatric liver unit
- Be able to identify acute liver failure and manage appropriate medical treatment and investigations
- Be able to identify acute liver failure and initiate first line treatment whilst arranging referral to Pediatric liver transplant unit
- Be able to recognize the progression of acute liver failure and the need for transplantation
- Be able to recognize the progression of acute liver failure and when liver transplantation is indicated and contra-indicated
- Know the causes of acute hepatic failure

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- Understand the clinical manifestations of acute hepatic failure
 - Know the pathophysiology of complications including cerebral oedema and hepato-renal syndrome
 - Understand the indications for liver transplantation
 - • Understand the indications for liver transplantation and know the importance of timely involvement of transplant team
 - Know about liver assist devices, dialysis and intracranial pressure monitoring

Hepatic Tumor

- Know about benign and malignant liver tumors
- Understand the investigations in liver tumor
- Be able to assess a child with hepatic tumor
- Be able to initiate specialist investigations and interpret their results

Nutrition

- Be able to take detailed dietary history
- Know the physiology of nutrient digestion, absorption, metabolism and elimination
- Know about the nutrition of the newborn, infancy, childhood and adolescent
- Know about child growth and development
- Be able to assess anthropometry
- Be able to assess WHO growth standard
- Know about nutritional status of children: Global and National
- Know about Breastfeeding: Anatomy, Physiology & Biochemistry
- Know about Breastfeeding problems & their management
- Know about Breastfeeding: Recent advances

- Know about Breastfeeding management, counseling and lactation management center
- Know about the importance of breastfeeding
- Know about IYCF: Complimentary feeding
- Know about Nutritional disorders: Chronic energy deficiency disorders, micronutrient deficiency disorders & different kind of nutrients
- Know about PEM
- Be able to manage SAM

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- Be able to assess FTT
 - Know about food based dietary guidelines: Food classification, food groups demonstration, including prepared home based menus
 - Know about healthy food habits
 - Know the epidemiology, etiology and clinical features of childhood obesity
 - Know how to recognize, investigate and manage a case of short stature
 - Know the indications and contraindications for commencing enteral and parenteral nutritional supports
 - Know the composition of different enteral feeds and parenteral nutritional supports
 - Understand the role of different members of the nutritional support team in the establishment and maintenance of patients receiving enteral and parenteral nutritional supports
 - Know the causes and effects of specific nutrient deficiencies including iron, zinc, copper, selenium, folate, vitamins and essential fatty acids

Abdominal distension

- Know the causes of abdominal distension
- Initiate investigation and seek surgical opinion when required

Constipation with or without soiling

- Be familiar with local and national guidelines for management
- Know about the predisposing conditions, e.g. hypothyroidism, neurodisability, psychosocial problems
- Understand the relevance of predisposing conditions, e.g. hypothyroidism, neurodisability, psychosocial problems
- Manage simple constipation with and without soiling
- Recognize when to liaise with more senior pediatricians or with specialist nurses, psychologist or psychiatrists

Dysphagia

- Know the causes of dysphagia
- Be able to distinguish between organic and functional dysphagia
- Be able to evaluate dysphagia – recognize achalasia cardia/ stricture esophagus/ esophageal stenosis and eosinophilic esophagitis

Malabsorption

- Know the causes of malabsorption including celiac disease
- Understand the principles of treatment of different types of malabsorption
- Recognize the role of the dietician and liaise appropriately
- Be able to explain and initiate investigations, nutritional assessment, dietary principles and liaise appropriately with the dietician

Malnutrition

- Know the causes of malnutrition including organic and inorganic causes
- Be familiar with the consequences of malnutrition
- Know the principles of enteral and parenteral nutrition support

- Be able assess nutritional status
- Be able to initiate investigations to establish the diagnosis and to detect nutritional deficiencies

Iron deficiency anaemia

- Know the causes of iron deficiency anaemia including poor diet, bleeding and malabsorption
- Understand factors which predisposes to dietary iron deficiency anaemia
- Be aware to the consequences of this condition
- Be able to manage iron deficiency anaemia
- Be able to counsel parents about dietary iron deficiency

Other areas in which knowledge is to be acquired:

- Biostatistics, Research Methodology and Clinical Epidemiology
- Ethics
- Medico legal aspects relevant to the discipline
- Health Policy issues as may be applicable to the discipline

V. COMPETENCIES

Residents of this training program will be equipped to function effectively within the current and emerging professional, medical and social contexts. At the completion of the training program in Pediatric Gastroenterology, as defined by this curriculum, it is expected that the pediatric gastroenterologist will have developed the clinical skills and have acquired the theoretical knowledge for competent pediatric gastroenterology practice.

It is expected that the pediatric gastroenterologist will be able to:

- Utilize effective communication with patients and their families and with professional colleagues
- Be devoted to lifelong learning
- Be equipped to manage both acute and chronic gastrointestinal disorders
- Identify the pathophysiology and manifestations of gastrointestinal disorders, and modern therapeutics, which can be applied to patient diagnosis and management.
- Apply appropriate skills to perform necessary diagnostic and therapeutic decisions.
- Demonstrate a capacity to rationally analyze clinical data and published work.
- Demonstrate an understanding of and commitment to the role of research in advancing medical care of gastrointestinal diseases.
- Develop a commitment to compassionate, ethical and professional behavior.
- Identify gastrointestinal health issues of importance to the community and contribute constructively to debate about those issues.
- Apply primary and secondary prevention strategies in gastrointestinal and hepatobiliary diseases.

VI. LOG BOOK

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s)) The candidate will maintain the record of all academic activities undertaken by him/her in log book.

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
7. In the absence of production of log book, the result will not be declared



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड
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