

Gastroenterology, Hepatology and Nutrition

Fellowship Curriculum

I. DIAGNOSTIC LIST

During the three-year gastroenterology fellowship training program, trainees are expected to develop comprehensive skills in the diagnostic evaluation, treatment and follow-up of common and uncommon problems of digestive disease function. In addition, trainees will develop an understanding of relevant embryology, biochemistry, physiology, anatomy and pharmacology as related to the development of normal and abnormal gastrointestinal function in the developing child. Specifically, familiarity and competence should be developed in managing disorders of the esophagus, stomach, small and large intestines, liver, gall bladder, biliary tract and pancreas; and functional and nutritional problems of the gastrointestinal tract. The trainee should become competent in the diagnosis and treatment of the following specific problems.

a. Esophagus

- Swallowing disorders
- Gastroesophageal reflux disease
- Motility disorders of esophagus (including achalasia and esophageal spasm)
- Esophagitis and esophageal ulcers
- Strictures
- Varices
- Allergic esophagitis
- Caustic ingestions
- Obstruction of esophagus
- Congenital anomalies (esophageal atresia, TEF)
- Foreign body

b. Stomach

- Acute and chronic gastritis
- Gastric ulcer
- H. pylori infection
- Eosinophilic gastritis
- Infectious gastritis
- Gastric hypomotility/dysmotility
- Gastric outlet obstruction (including pyloric stenosis)
- Crohn's disease
- Upper GI bleeding
- Acute and chronic vomiting
- PEG's/feeding access

c. Small Intestine

- Duodenal and intestinal ulcer diseases
- Acute and chronic diarrhea
- Malabsorption conditions
 - Carbohydrate
 - Lipid
 - Protein
- Motility disorders of the small intestine
- Allergic gastroenteropathy
- Intestinal obstruction
- Celiac disease
- Crohn's disease
- Bacterial overgrowth
- Short bowel syndrome

- Congenital anomalies
- Malrotation with or without midgut volvulus
- Meckel's diverticulum and other duplications
- Diarrhea in immuno-compromised host

d. **Large Intestine**

- Infectious colitis
- Allergic colitis
- Ulcerative colitis and Crohn's disease
- Colonic polyps
- Lower gastrointestinal bleeding
- Ischemic colitis
- Congenital anomalies
- Motility disorders of colon
- Anorectal disorders
 - Hemorrhoids
 - Fistulas
 - Atresia
 - Stenosis

e. **Hepatobiliary System**

- Neonatal cholestasis
- Biliary atresia and Choledochal cyst
- Metabolic liver disease
- Hepatic storage disorders
- Cystic and fibrosing conditions of the liver and biliary tree
- Intrahepatic/extrahepatic bile duct disorders
- Acute and chronic hepatitis
- Autoimmune hepatobiliary disorders
- Gallstones and cholecystitis
- Cirrhosis
- Hepatic masses and tumors
- Liver transplantation and long-term care
- Acute and chronic liver failure
- Portal hypertension and its complications

f. **Pancreas**

- Acute and chronic pancreatitis
- Pancreatic pseudocyst
- Pancreatic insufficiency disorders including cystic fibrosis
- Pancreatic masses and tumors
- Congenital anomalies
- Trauma to pancreas

g. **Functional Disorders**

- Acute and chronic abdominal pain
- Constipation and encopresis
- Chronic vomiting
- Increased flatulence
- Irritable bowel syndrome

h. **Nutritional Problems**

- Failure to thrive
- Anorexia
- Acute and chronic weight loss
- Obesity
- Specific nutrient deficiencies

- Short bowel syndrome
- Chronic management of enteral or parenteral nutritional supplementation

i. **GI Problems and Systemic Diseases**

- Vasculitis/connective tissue disorder
- HIV
- Bone marrow transplantation
- Multiple organ failure

II. **PROCEDURE LIST**

During the three years of training, the fellow will become proficient in performance of the following procedures:

1. Pan-upper gastrointestinal endoscopy
2. Video capsule endoscopy
3. Colonoscopy and sigmoidoscopy
4. Polypectomy
5. Esophageal variceal sclerosis/band ligation
6. Removal of gastrointestinal foreign bodies
7. Percutaneous endoscopic gastrostomy placement
8. Dilation of esophageal strictures
9. Small intestinal biopsy
10. Suction rectal biopsy
11. Percutaneous liver biopsy
12. Paracentesis

The trainee will also become familiar with the indications, use and interpretations of findings of esophageal and anorectal manometry, esophageal pH probe studies, ERCP and breath hydrogen analysis.

Proficiency is defined as understanding the clinical indications and contraindications, proper sedation techniques and intra-procedural monitoring, physical performance of the procedure, interpretation of abnormal and normal findings and proper post-procedural monitoring.

The trainee will maintain a written log of each procedure performed, the date, patient identification, findings and comments.

III. **CLINICAL DATA GATHERING**

Trainees will be expected to demonstrate competence in gathering accurate, complete and reliable clinical data from:

- History
- Physical examination
- Laboratory and imaging tests

IV. **COMMUNICATION SKILLS**

Trainees will be expected to demonstrate effective written and oral communications, including:

0. Communicating appropriately with children, family members, other physicians (including the primary care provider), nursing staff and other personnel.
1. Writing appropriate consultations and follow-up chart notes.
2. Reliably following up on diagnostic tests, imaging studies and treatment issues related to patients.

V. **BIOETHICAL AND SOCIAL AWARENESS**

The trainee should demonstrate awareness of the social, ethical and economic issues involved in patient care and clinical research, and which may relate to their clinical decisions.

VI. **TEACHING CONFERENCES**

Trainees will be expected to attend all teaching conferences of the Section, including:

- GI Topic Conference (weekly)
- Research, X-ray and Pathology Conferences (weekly)
- Journal Club (monthly)
- Fellow Rounds (weekly)
- Citywide GI Conference (monthly)
- Surgical/GI Conference (monthly)

VII. **SERVICE ROTATION**

Trainees will be expected to rotate on the inpatient pediatric GI service and on the outpatient GI service during the first year. While on the inpatient service the fellow is responsible for admitting all gastroenterology, hepatology and nutrition service patients and performing all consultations. During the second and third years of fellowship, the trainee will attend a half-day GI clinic each week and will be expected to follow-up on the needs of patients seen in clinic, under the supervision of a GI faculty member.

VIII. **REQUIRED READING**

Trainees will be able to critically evaluate clinical Pediatric GI and Hepatology literature, to avidly read the pertinent textbooks and journals and be capable of performing computerized literature searches.

IX. **PRESENTATIONS**

Trainees will present a Topic Conference Seminar two times per year, a Research Conference each year, a GI-Surgical Conference twice per year and will deliver Core Lectures to residents and medical students.

X. **CLINICAL/LABORATORY RESEARCH**

Second- and third-year trainees will engage in a clinical or laboratory research project that will result in the preparation of at least one abstract for a national meeting, and preparation of a manuscript to be submitted for publication. In addition, trainees will develop an understanding of project design, protocol development, manuscript preparation and writing, grant writing and the bioethics of research and research subject consent procedures.

XI. **EVALUATION PARTICIPATION**

Trainees will participate in the evaluation of faculty and of the GI training program and will follow guidelines outlined in the [UCD Housestaff Manual](#) and The Children's Hospital Housestaff Manual.