

Gastroenterology Educational Goals & Objectives

The Gastroenterology rotation will provide the resident with an understanding of the physiology of gastrointestinal, pancreatic, biliary and hepatic diseases and their systemic manifestations. The resident will have the opportunity to evaluate and manage patients across a spectrum of GI disorders in both the inpatient and outpatient venues. The goal is to familiarize them with basic mechanisms, clinical manifestations, diagnostic strategies and management of GI diseases as well as disease prevalence and prevention. Depth of exposure should be such that they can develop competency in the prevention of GI disease, indications for procedures, management of common disease, management of the acutely ill patient, and appropriate indications for referral.

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

- I. All residents must be able to provide compassionate, culturally-sensitive, and appropriate care for patients to prevent and treat gastrointestinal disease.
 - PGY2s should seek appropriate subspecialty or surgical consultation when necessary to further patient care.
 - PGY3s should supervise and ensure seamless transitions of care between primary and consulting teams and between inpatient and outpatient care.

- II. Residents will demonstrate the ability to take a pertinent GI history and perform a focused physical exam. PGY1s should be able to differentiate between stable and unstable patients and elicit the following historical details:
 - personal and family history of GI disease e.g. cancers, Celiac disease, IBD
 - history of alcohol and drug use
 - complete medication history, including prescription, over the counter, and recreational use of drugs with liver toxicity

PGY2s should be able to recognize the contribution of psychosocial factors, such as compliance, financial constraints, and harmful interpersonal relationships to the patient's presentation.

PGY3s should be able to independently obtain the above details for patients with a history of complex GI disease and multiple comorbid conditions.

- III. Residents should be able to appreciate the following physical findings:
 - PGY1s: abdominal mass, ascites, asterixis versus tremor, Dupuytren's contractures, jaundice, hemorrhoids, hernia, rectal mass, scleral icterus, spider angiomas
 - PGY2s: abdominal bruit, hepatosplenomegaly, pulsatile abdominal mass, voluntary versus involuntary guarding
 - PGY3s: iliopsoas and obturator tests

IV. Residents will understand the indications, contraindications, complications, limitations, and interpretation of following procedures, and become competent in the their safe and effective use:

- PGY1s: anoscopy (optional), paracentesis, placement of large bore IV and nasogastric tube
- PGY2s: flexible sigmoidoscopy (optional)

In addition, residents will demonstrate knowledge of and be able to counsel patients and/or families regarding the indications and contraindications for risks and benefits of the following procedures:

- colonoscopy (and preparation) and esophagogastroduodenoscopy
- Endoscopic retrograde cholangiopancreatography (ERCP)

Medical Knowledge

I. PGY1s will develop an understanding of the basic pathophysiology and approach to the following common GI conditions:

- Abdominal pain or distention
- Abnormal liver function tests
- Anorectal discomfort, bleeding, or pruritis
- Anorexia, malnutrition or weight loss
- Ascites
- Biliary colic
- Early satiety, dyspepsia and heartburn
- Dys- or odynophagia
- Encephalopathy
- Family history of gastrointestinal cancer
- Flatulence, constipation, diarrhea or fecal incontinence
- Hematemesis, melena, or bright red blood per rectum
- Hernia
- Iron deficiency anemia
- Jaundice
- Nausea and vomiting
- Noncardiac chest pain
- Withdrawal syndromes

PGY2s will also develop an understanding of the pathophysiology, clinical presentation, and targeted therapy for the following gastrointestinal diseases:

- Achalasia
- Autoimmune hepatitis
- Barrett's esophagus, esophagitis and chronic GERD
- *C. Difficile* colitis
- Celiac Disease
- Chronic liver diseases and associated complications

- Colonic polyps
- Diverticular disease
- Eosinophilic esophagitis
- Gallstones and calcified gallbladder
- Gastroparesis
- GI cancers and hereditary cancer syndromes
- GI manifestations of AIDS
- Ileus and obstruction
- Inflammatory Bowel Disease
- Irritable Bowel Syndrome
- Peptic Ulcer Disease
- Primary Biliary Cholangitis
- Primary Sclerosing Cholangitis
- Steatohepatitis
- Volvulus

PGY3s will develop an understanding of the pathophysiology, clinical presentation, and targeted therapy for the above conditions, with attention to differences in patient populations where appropriate. They will also become familiar with:

- Palliative care options for patients with GI malignancies
- Pancreas and liver transplant evaluation and post-transplant care

II. Residents will become comfortable with timely triage and therapy for *acute* GI conditions, including:

- Acute liver failure
- Appendicitis
- Cholecystitis and cholangitis
- Diverticulitis
- Hepatorenal syndrome
- Hypotension in the setting of GI bleeding
- Inflammatory bowel disease flare
- Mesenteric ischemia
- Pancreatitis
- Perforation

III. PGY1s will be able to understand the indications for ordering and the interpretation of the following laboratory values and procedures:

- Abdominal series
- Ascitic fluid analysis
- Chemistries, including amylase, lipase, LFTs
- Cologuard
- Contrast studies, including upper GI series, small bowel follow through, and barium enema
- CT and ultrasound abdomen/pelvis
- Endoscopy with biopsy

- ERCP
- Fecal leukocytes
- Guaiac
- *Helicobacter pylori* testing
- MELD score and Child's class
- Stool cultures, *C. Difficile* testing, and ova and parasites
- Tumor markers
- Viral hepatitis serology

PGY2s will also demonstrate knowledge of the indications for ordering and the interpretation of:

- 24 hour esophageal pH monitoring and Bravo pH monitoring
- B12 and Schilling tests
- Bleeding scan
- Breath tests
- Capsule endoscopy
- Esophageal manometry
- Fecal electrolytes, fecal fat, and fecal osmolality
- Gastric emptying study
- Gastrin level and secretin stimulation test
- HIDA scan
- IgG4
- Laxative screen

PGY3s will independently, appropriately order studies and be able to interpret results within the context of patient comorbidities, pretest probability of disease, and patient values. PGY3s will demonstrate knowledge of the indications, contraindications, and appropriate timing for the following procedures:

- Abdominal wall herniorrhaphy
- Bowel resection
- Cholecystectomy
- Endoscopic treatment with banding, dilation, or sclerotherapy
- Enterostomy/gastrostomy
- Exploratory laparotomy
- Hiatal hernia repair
- Laparoscopy
- Liver biopsy
- Mesenteric arteriography
- Peptic ulcer surgery
- TIPS

IV. Residents should become fluent in the issues of health maintenance relevant to gastrointestinal disease and be able to counsel patients appropriately on:

- CAGE screening and substance abuse

- Colon cancer screening
- Dietary management for Celiac disease, diverticular disease, Irritable Bowel Syndrome, obesity, and enteral/parenteral nutrition
- Hepatitis vaccination
- Prescription drugs with potential hepatotoxicity

Practice-Based Learning and Improvement

- I. All residents should be able to access current national guidelines to apply evidence-based strategies to patient care.
- II. PGY2s and PGY3s should develop progressive skills in evaluating new studies in published literature through Journal Club and independent study.
- III. All residents should participate in case-based therapeutic decision-making, involving the primary care provider, gastroenterologist and surgeon. Residents should learn to coordinate patient care as part of a larger team, including the nurse, pharmacist, dietician, substance abuse counselor, and social worker to optimize patient care.
- IV. All residents should respond with positive changes to feedback from members of the health care team.

Interpersonal and Communication Skills

- I. PGY1s must demonstrate organized and articulate written (electronic) and verbal communication skills that build rapport with patients and families, convey information to other health care professionals, and provide timely documentation in the chart.
- II. PGY2s must also develop interpersonal skills that facilitate collaboration with patients, their families, and other health professionals.
- III. PGY2s should be able to facilitate negotiation with a narcotic-seeking patient.
- IV. PGY3s should demonstrate leadership skills to build consensus and coordinate a multidisciplinary approach to patient care.
- V. PGY3s must be able to elicit information or agreement in situations with complex social dynamics, for example, identifying the power of attorney or surrogate decision maker, and resolving conflict among family members with disparate wishes.

Professionalism

- I. All residents must demonstrate strong commitment to carrying out professional responsibilities as reflected in their conduct, ethical behavior, attire, interactions with colleagues and community, and devotion to patient care.
- II. PGY1s should be able to educate patients and their families in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.
- III. PGY2s should be able to use time efficiently in the clinic to see patients and chart information.

- IV. PGY2s should be able to counsel patients and families both on diagnostic and treatment decisions and on end of life issues, transition to hospice care, and withdrawal of care, with progressive levels of independence.
- V. PGY3s should be able to provide constructive criticism and feedback to more junior members of the team.

Systems-Based Practice

- I. PGY1s must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.
- II. PGY2s must be able to discuss alternative care strategies and the cost and risks involved in current quality issues in GI care, such as screening for colon cancer.
- III. PGY3s must demonstrate an awareness of and responsiveness to established quality measures, risk management strategies, and cost of care within our system.

Teaching Methods

- I. Supervised patient care in the inpatient and outpatient setting.
 - Residents will initially be directly observed with patients, to facilitate the acquisition of excellent history taking and physical exam skills.
 - As residents become more proficient, they will interact independently with patients and present cases to faculty.
 - Initial emphasis will be on diagnosis and basic management.
 - When residents have mastered these skills, focus will be on medical decision-making, and residents will work with supervising physicians to finalize a care plan.
- II. Conferences
 - Specialty-specific didactics
- III. Independent study
 - Journal and textbook reading TBD by GI attending
 - *Sherlock's Diseases of the Liver and Biliary System*, 13th edition (2018), Wiley-Blackwell.
 - Online educational resources
 - AGA American Gastroenterological Association www.gastro.org
 - ACG American College of Gastroenterology www.gi.org
 - ASGE American Society for Gastrointestinal Endoscopy www.asge.org
 - AASLD American Association for the Study of Liver Diseases www.aasld.org
 - AASLD/IDSA guidelines on Hepatitis C <https://www.hcvguidelines.org/>
 - CDC guidelines on viral hepatitis <http://www.cdc.gov/hepatitis/index.htm>
 - eMedicine brief reviews with imaging <http://www.emedicine.com/radio/index.shtml#gastrointestinal>

- NEJM videos in clinical medicine: paracentesis, nasogastric intubation
<http://www.nejm.org/multimedia/medical-videos>
- Radiology teaching files www.ctisus.com
- University of Virginia's "Introduction to Gastrointestinal Radiology"
<http://www.med-ed.virginia.edu/courses/rad/gi/index.html>
- Up to Date
- Clinical Key

Evaluation

- I. Mini-CEX bedside evaluation tool
- II. Verbal mid-rotation individual feedback
- III. 360 Evaluation
- IV. Attending written evaluation of resident at the end of the month based on rotation observations and chart review.

Rotation Structure

- I. Residents should contact the lead gastroenterologist the day prior to determine start time and location. Residents should notify the attending physician promptly if they cannot be available at their assigned time.
- II. Residents should divide their time between the hospital, clinic, and endoscopy lab, as appropriate to achieve the above educational goals.
 - Residents will be involved in discussion of patient presentation, generation of a differential diagnosis, development of a treatment plan, and patient follow up.
 - Case-based learning is most effective. Nightly reading/study should be based on patients seen during the day.
 - When doing consults, the resident should understand the question asked and provide a concise answer.
- III. Residents may be asked to do focused literature searches or presentations during the course of the rotation
- IV. Call and weekend responsibilities TBD by the attending physician.
 - Hours worked must be consistent with ACGME requirements and are subject to approval by the Program Director.
- V. Residents have specialty-specific didactics and should be excused in a timely fashion to attend.