University of Michigan Health System
Internal Medicine Residency

Gastroenterology/Liver – Inpatient Curriculum

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Rotation Goals and Educational Purpose

Gastroenterology encompasses the evaluation and treatment of patients with disorders of the gastrointestinal tract, pancreas, biliary tract, and liver. It includes disorders of organs within the abdominal cavity and requires knowledge of the manifestations of gastrointestinal disorders in other organ systems, such as the skin. Additional content areas include nutrition and nutritional deficiencies, and screening and prevention, particularly for colorectal cancer.

The general internist should have a wide range of competency in gastroenterology and should be able to provide primary and in some cases secondary preventive care, evaluate a broad array of gastrointestinal symptoms, and manage many gastrointestinal disorders. The general internist is not expected to perform most technical procedures with the important exception of flexible sigmoidoscopy. However, he or she must be familiar with the indications, contraindications, interpretation, and complications of these procedures.

This rotation is mandatory for all residents at both the HO1 and HO2/3 levels.

Rotation Competency Objectives

In supplement to the University of Michigan Longitudinal Learning Objectives, the following provide an overview of the knowledge, skills, and behaviors promoted in this rotation.

I. Medical Knowledge and Patient Care
   a. Physical and radiologic diagnosis
      i. By completion of the rotation, HO1 residents should be able to correctly perform appropriate physical examination maneuvers for the detection of common GI diseases.
      ii. HO2 residents should additionally demonstrate knowledge of common GI radiologic diagnostic tools sufficient to diagnose urgent conditions as well as complications of common GI complaints.
   b. Management of urgent GI conditions

i. By completion of the rotation, HO1 residents are expected to demonstrate knowledge sufficient for initial diagnostic suspicion and management of common urgent GI conditions, detect "red flags" for potentially unstable conditions, and ensure provision of urgent care within a medically appropriate time frame. They must demonstrate sufficient time-sensitive diagnostic skills to recognize indications for surgical v. non-surgical patient management. HO1 residents must be able to suspect, form an initial diagnostic plan, and initially manage the following conditions with minimal supervision by the end of the rotation:
    1. Gastrointestinal bleeding
    2. Abdominal infection
    3. Abdominal perforation

ii. HO2 residents should additionally, by completion of the rotation, be able to discuss the initial diagnostic and therapeutic evaluation of specific GI conditions. They must provide care consistent with national guidelines (e.g. ASGE, ACG, AGA, AASLD) and prioritize both diagnostic and therapeutic plans for the following urgent conditions:
    1. Acute appendicitis
    2. Acute cholecystitis
    3. Acute mesenteric insufficiency
    4. Acute hepatic failure
    5. Perforated PUD
    6. Diverticulitis and diverticular perforation
    7. Acute upper and lower GI bleeding

iii. HO3 residents should additionally demonstrate knowledge of the evidence base for management of common urgent GI conditions.

c. Management of other common GI conditions

i. By completion of HO2, residents must demonstrate knowledge of the etiology, risk factors, preventive interventions, pathophysiology, natural history, clinical presentations, diagnostic strategies, radiologic evaluation, initial management strategies, endoscopic indications, potential surgical interventions, and chronic care management for the following common GI conditions:
    1. GERD, esophagitis, and esophageal cancer
    2. Gastric emptying disorders
    3. Gastric cancer
    4. GI bleeding (upper) and H. Pylori infection
    5. Inflammatory Bowel Disease
    6. Diarrhea and malabsorption
    7. Colon cancer
    8. Acute pancreatitis
    9. Chronic pancreatic disease
    10. Pancreatic cancer
    11. Gallstone disease, biliary obstruction, and cholangitis
    12. Biliary tract cancer

13. Liver disease, including: viral hepatitis, alcoholic liver disease, biliary cirrhosis, hemachromatosis, PSC, Wilson's disease, autoimmune hepatitis, alph-1-antitrypsin deficiency, non-alcoholic fatty liver, Budd Chiari, and portal hypertension
14. Cirrhosis and its complications, including: variceal bleeding, hepatic encephalopathy, ascites, spontaneous bacterial peritonitis, acid-base disorders, and hepatorenal syndrome

d. Performance of GI procedures - By completion of HO1, residents should be able to perform the following procedures with minimal verbal assistance:
    i. Nasogastric intubation
    ii. Abdominal paracentesis
    iii. Large bore peripheral IV placement

e. Management of nutritional disorders - HO3 residents should demonstrate knowledge of when and how to initiate enteral and parenteral nutrition. They should distinguish between alternative enteral feeding devices, partial and total parenteral nutrition indications, and PICC versus central line delivery.

f. Management of life threatening acute and chronic conditions - HO3 residents should reflect understanding of
    i. indications for liver transplantation
    ii. palliative care options for patients with gastrointestinal malignancies, including the use of laser therapy, lumenal stents, blood transfusions, enteral and parenteral alimentation, radiation and chemotherapy, and hospice care.

II. Interpersonal and Communication Skills

a. By completion of the rotation, HO1 residents are expected to
    i. Be able to adapt history-taking skills to the mental status and psychosocial presentation of the patient and family.
    ii. Under supervision and after having observed the attending or senior resident manage a similar interaction, successfully negotiate appropriate communication and management for a hostile or narcotic-seeking patient.

b. HO2/3 residents should additionally be able to
    i. Effectively communicate with patients and other professionals regarding the risks and benefits of GI diagnostic evaluation and testing, addressing safety risks, and incorporating indications and contraindications for interventions;
    ii. Under supervision, engage patients in informed consent discussions for GI procedures, respecting patient autonomy and promoting patient participation in health care decisions.

III. Professionalism

a. HO1 residents are expected to:
    i. Anticipate and address the complexities of family care at home, potential abusive relationships, possible medical compliance problems and financial limitations of health care.

ii. Describe the issues surrounding substance abuse in abdominal pain and chronic liver disease, especially in the context of liver transplantation.
iii. Reflect understanding of appropriate indications to discuss DNR status with patients and families for patients with end-stage liver disease, gastrointestinal malignancy, and other life-threatening GI diseases. Sensitively respond to patient and family decisions regarding palliative care for terminal GI diseases.

b. HO2/3 residents additionally are expected to exhibit
   i. Responsibility to identify a long term care provider for each patient, communicating with the long term provider to ensure continuity of care.

IV. Practice-Based Learning and Improvement

a. HO1 residents must constructively respond to and internalize feedback from faculty, nursing, and allied healthcare providers. They must demonstrate willingness to change identified behaviors.

V. Systems-Based Practice

a. By completion of the rotation, HO1 residents are expected to be able to
   i. Direct cost-effective diagnostic and treatment plans for common GI symptoms, prioritizing cost effective interventions for appropriately tiered care plans.
   ii. Effectively access and mobilize emergent and surgical care services.
b. HO 2/3 residents will additionally demonstrate ability to
   i. Interface with allied professionals to assist in initial and long-term (post discharge) patient management.
   ii. Identify psychosocial support/hospice care options for patients with terminal GI diseases.
   iii. Know roles of GI/radiology/surgery/social work/nursing /anesthesiology in the team management of patients.
   iv. Reflect awareness of pre- and post-endoscopy communications systems, facilitating patient transfers both to and from the medical endoscopy unit.

Teaching Methods

I. Supervised Patient Care (including mix of diseases, patient characteristics, types of clinical encounters, procedures, pathologic material, services, the level of faculty supervision for all resident patient-care activities, and other services interacted with)

a. The emphasis of the rotation is on experiential learning through management of hospitalized GI-liver patients. Residents perform initial hospitalization H&P and daily management care for patients under the full supervision of a faculty gastroenterologist. Patient-centered, case-based faculty discussions review each patient.
b. Patients present from a broad age range and socioeconomic backgrounds, with a spectrum of local to quaternary care needs.

c. Residents perform abdominal paracentesis, nasogastric intubation, and peripheral IV placement under supervision until independent competency is demonstrated.
d. Residents interact with nurse case managers, GI fellows, and endoscopy techs while providing patient care; residents should consider all such interactions as opportunities for education.

II. Structured Didactics and Small Group Learning

a. Faculty provide didactic and Socratic content covering core GI conditions. The content repeats each rotation block, ensuring adequate reinforcement of core content throughout training. Sessions occur in the afternoon.

III. Special projects

a. Patient safety and systems improvement exercise: Any procedure-related complication is selected for evaluation of error. Such cases are selected on an as-needed basis. Residents review the case with the supervising attending for discussion of improvement opportunities and identification of measures to reduce future error risk.
b. "Endoscopy tour" exercise: Residents spend a half day in the medical endoscopy unit, observing and then assisting with upper and lower endoscopy procedures. Teaching endoscopes are available. Residents observe not only knowledge and skills necessary for safe procedural practice, but also the systems communication of endoscopy team personnel.

IV. Simulation training

a. During the first week of the rotation, HO2/3 senior residents set an appointment for simulation training of the HO1 resident in the Towsley Center simulation center. The following procedures will be taught and assessed: nasogastric intubation, abdominal paracentesis, and large bore peripheral IV line placement. Procedure videos for abdominal paracentesis and nasogastric intubation should be viewed by all HO1 residents prior to arrival at the simulation center. These are available online as posted by the New England Journal of Medicine at: http://content.nejm.org/misc/videos.shtml?ssource=recentVideos

V. Independent study (including reading lists, and other educational resources) – Residents are expected to actively read core content regarding both their patient-based experiences and the common conditions as noted under the rotation learning objectives. The following resources are suggested and are available on line:

a. Yamada – Textbook of Gastroenterology
b. Professional Society guidelines, as posted on websites:
    i. ASGE: http://www.asge.org/PublicationsProductsindex.aspx?id=352
    ii. ACG: http://www.acg.gi.org/physicians/clinicalupdates.asp#guidelines
    iii. AGA: http://www.gastro.org/wmspage.cfm?parm1=160
    iv. AASLD: https://www.aasld.org/eweb/DynamicPage.aspx?Site=AASLD3&WebKey=0ec30b12-5f13-413b-85ea-793bee8b0fef

c. Recommended GI Radiology online learning resources include:

   i. Wayne State University's Department of Medicine has posted a simple teaching file showing normal abdominal CT anatomy. Know this basic information, viewed at: http://www.med.wayne.edu/diagRadiology/Anatomy_Modules/Abdomen.html

   ii. The University of Toronto "Techniques for Gastrointestinal Examinations" website: http://icarus.med.utoronto.ca/imaging/residents/gi%5Fimaging/index.htm

   iii. The University of Toronto "Focal Liver Lesions" website: http://icarus.med.utoronto.ca/imaging/residents/focalliverlesions/index.htm

   iv. The University of Virginia's "Introduction to Gastrointestinal Radiology" is available at: http://www.med-ed.virginia.edu/courses/rad/gi/index.html

   v. eMedicine has a large spectrum of good quality brief reviews that include radiologic images, at: http://www.emedicine.com/radio/index.shtml#gastrointestinal

   vi. Dr. Elliott Fishman at Johns Hopkins University has posted excellent tutorial for CT of multiple organ systems at "CT is us": http://www.ctisus.com/organsys/index.html

Rotation Schedule

All inpatient care rounds meet at ***UH-6B***

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	6:00 Preround 7:30 Faculty Management Rounds 10:00 Resident D/C planning rounds 10:30 Morning Report	6:00 Preround 7:30 GI Conf 8:30 Faculty Management Rounds 10:00 Resident D/C planning rounds 10:30 Morning Report	6:00 Preround 7:30 Faculty Management Rounds 10:00 Resident D/C planning rounds 10:30 Morning Report	6:00 Preround 7:30 Faculty Management Rounds 10:00 Resident D/C planning rounds 10:30 Morning Report	6:00 Preround 7:30 Faculty Management Rounds 10:00 Resident D/C planning rounds 10:30 Morning Report
PM	12:00 Noon Conference 2:00 Teaching Rounds	12:30 Intern Report 2:00 Teaching Rounds	12:00 Noon Conference 2:00 Teaching Rounds	12:00 Noon Conference 2:00 Teaching Rounds	12:00 Grand Rounds 2:00 Teaching Rounds

Evaluation Methods

Learning goals are established with each resident by the attending at the beginning of the month. Formative face-to-face feedback to residents by attendings occurs at mid-month. Each month, attendings complete online competency-based evaluations of each resident. The evaluation is shared with the resident, is available for on-line review by the resident at his/her convenience, and is sent to the residency office for internal review. The evaluation is part of the resident file and is incorporated into semiannual performance reviews for directed resident feedback.

Following initial simulation center procedure demonstration and teaching, residents are assessed for procedural competency using a standardized performance assessment checklist.

Residents complete a service evaluation of the rotation faculty monthly.