

Fellowship Training Program in Digestive Diseases

Yale University School of Medicine

Curriculum

Goals and Objectives

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Curriculum Overview

Introduction

The training program in Digestive Diseases at Yale University School of Medicine began over 50 years ago when Dr. Gerald Klatskin started a training program in Hepatology and Dr. Howard Spiro established a similar program in Gastroenterology. In 1982 the Gastroenterology and Hepatology programs were combined in the Section of Digestive Diseases under the leadership of Dr. James Boyer. From 1996-2002, Dr. James Anderson was the Section Chief, followed by Dr. Michael Nathanson who has been the Section Chief since 2003. Our program ranks in the top training programs for placing its fellows in academic positions.

The comprehensive training program in Digestive Diseases consists of a three-year period of training. Three hospitals participate in the program including Yale-New Haven Hospital, the VA Connecticut Health Care System Hospital and the Hospital of St. Raphael. At these hospitals fellows participate in the care of patients with a wide range of clinical problems in all stages of illness. Clinical fellows receive 36 months of clinical training. Advanced clinical training in biliary-pancreatic endoscopy (ERCP) is offered to selected clinical fellows in their second or third year.

Research fellows receive research training as well as clinical training. Two National Institutes of Health (NIH) training grants support fellows during their research training. Research fellows have the option to pursue an additional fourth year to complete their research training.

Throughout the traditional 3-year program, all fellows maintain a continuity of care clinic experience and continue to participate in the didactic educational activities of the section.

Key Personnel involved in Administration of the Training Program

Anil Nagar, MD	GI Fellowship Program Director Site Director, VA CT Health Care System
Avlin Imaeda, MD, PhD	Associate GI Fellowship Program Director
Scott Swenson, MD, PhD	Associate GI Fellowship Program Director Site Director, Yale New Haven Hospital
Michael Nathanson, MD, PhD	Chief, Section of Digestive Diseases
Karen Lawhorn	GI Fellowship Coordinator
Adam Gorelick, MD	St. Raphael's Hospital Site Director
Guadalupe Garcia-Tsao, MD	Section Chief, VA CT Health Care System
Priya Jamidar, MD	Director, Y-NHH GI Procedure Center
Cyrus Kapadia, MD	Internal Medicine Residency Program Director
Rosemarie Fisher, MD	Director, Graduate Medical Education

Overall Goals and Objectives

Our broad, overall goals and objectives are to provide a scholarly training environment for fellows to develop into academic subspecialty consultants, clinical investigators, or clinical gastroenterologists. In addition to providing outstanding clinical training, we strive to provide the scientific foundation necessary to foster the development of our trainees into independent physician-scientists. To attain these goals the program is structured for trainees to achieve appropriate medical knowledge and procedural skills in the field of digestive diseases, as well as to develop the interpersonal and communication skills and professional attitudes necessary to function as highly competent subspecialists in this field.

General Medical Knowledge in Digestive Diseases

Digestive diseases and health clinical knowledge will be learned in all inpatient and outpatient rotations at all sites throughout the three-year training period. Gender, cultural, socioeconomic, occupational, environmental and behavioral issues will be addressed in all situations involving patient care. The following lists the knowledge and skills that the fellow will learn, but his or her knowledge and skills are not necessarily limited to that which is listed below.

1. Digestive Diseases Physiology and Pathophysiology

The fellow should acquire knowledge of basic gastrointestinal and hepatic physiology and pathophysiology that include the:

- a. The anatomy of the gastrointestinal tract including its blood supply
- b. Gastrointestinal motility
- c. Role of the stomach, pancreas, and bile with respect to digestion
- d. Mechanisms and sites of nutrient and electrolyte absorption by the small intestine and colon
- e. Regulation of gastric, pancreatic, biliary, and intestinal secretion
- f. The roles of the liver in the: i) the synthesis and release of essential metabolic factors (such as albumin and prothrombin) into the blood, ii) metabolism and detoxification of a number of substances, iii) synthesis and secretion of bile
- g. Normal and abnormal laboratory values relevant to digestive diseases, including the interpretation of abnormal liver chemistries
- h. Factors involved in nutrition and malnutrition
 - i. knowledge and appropriate use of enteral and parenteral alimentation
- i. The natural history of digestive diseases
- j. Anatomy, physiology, pathology and molecular biology related to the gastrointestinal tract, including the liver, biliary tract and the pancreas
- k. Pharmacology of medications relevant to digestive diseases, including bioavailability, indications, usage, complications, and interactions with other medications and organ systems, including conventional medications as well as complimentary and alternative medications.
- l. Indications and complications of surgical procedures relevant to digestive diseases

2. Digestive Diseases Emergencies

The fellow should acquire the background to recognize, evaluate and treat the most common digestive disease emergencies including the following:

- a. Acute gastrointestinal bleeding from the upper or lower gastrointestinal tract
- b. Caustic ingestion and foreign body extraction
- c. The acute abdomen and abdominal pain
- d. Intestinal obstruction and pseudo-obstruction
- e. Severe diarrhea including acute presentations of inflammatory bowel disease
- f. Intestinal ischemia
- g. Acute pancreatitis
- h. Biliary tract obstruction and cholangitis, gallstones and acute and chronic cholecystitis
- i. Acute hepatic failure

3. Knowledge of Common Digestive Diseases

The fellow is expected to understand the clinical manifestations, natural history, pathophysiology, and treatment of the common gastrointestinal and hepatic diseases, including behavioral adjustment of patients to their diseases, that are not included in the emergency category that include:

- a. Disorders of the esophagus including esophagitis, esophageal spasm, and achalasia
- b. Acid-peptic disease of the stomach, including *Helicobacter pylori* infection and various methods for testing and diagnosing *Helicobacter pylori* infection
- c. Gastric and intestinal motility disorders
- d. Irritable bowel syndrome
- e. Malabsorption and maldigestion including mucosal diseases and pancreatic insufficiency.
- f. Disorders of nutrient assimilation, malnutrition
- g. Enteral and parenteral alimentation
- h. Infectious diseases of viral, retroviral, bacterial, mycotic, or parasitic etiology
- i. Gastrointestinal and hepatic manifestations of HIV infections
- j. Immunologically based diseases
- k. Acute and chronic hepatitis
- l. Jaundice, cholestasis and cholestatic syndromes
- m. Pathophysiology and treatment of portal hypertension
- n. Chronic liver disease, cirrhosis, and its systemic manifestations including ascites, encephalopathy, portal hypertension, variceal bleeding, and spontaneous bacterial peritonitis
- o. Premalignant and malignant processes and neoplasms of the esophagus, gastrointestinal tract, pancreas, and hepato-biliary system
- p. Inflammatory bowel disease - Crohn's disease, ulcerative colitis, and indeterminate colitis
- q. Vascular disorders of the gastrointestinal tract
- r. Alcoholic liver disease
- s. Drug-induced hepatic injury, including herbal medicine and over the counter drug induced injury
- t. Pancreatic and biliary diseases, including gallstones and cholecystitis
- u. Gastric, pancreatic, and biliary secretory tests

- v. Abdominal pain
- w. Nausea, vomiting and diarrhea, both acute and chronic
- x. Constipation
- y. Gastrointestinal bleeding – acute and chronic
- z. Diverticular disease, including diverticulitis and diverticular bleeding
 - aa. Genetic and inherited disorders
 - ab. Medical genetics relevant to digestive diseases
 - ac. Depression, neurosis, and somatization syndromes
 - ad. Surgical care of gastrointestinal and liver disorders and medical management of patients under surgical care for gastrointestinal diseases
 - ae. Pregnancy and the GI tract and liver
 - af. Prevention and screening, including colon cancer screening, smoking cessation and carcinogens
 - ag. Common laboratory tests pertinent to the GI tract or liver
 - ah. Complimentary and alternative medicine (CAM) as it applies to gastrointestinal and hepatic diseases, including, but not limited to, the use of probiotics, herbal and over the counter medicines (OTC), vitamins and minerals, meditation, yoga, physical exercise, and patients’ beliefs of treatment benefits
 - ai. Ethics as it applies to gastrointestinal and hepatic diseases, including but not limited to, liver transplantation, malignancy and end-of-life issues, and the appropriate evaluation and management of patients with diverse ethnic, cultural, socioeconomic and gender issues
 - aj. Women’s health issues in digestive diseases
 - ak. Geriatric gastroenterology
 - al. General principles as they apply to liver transplantation
 - am. Pharmacology of medications relevant to the treatment of digestive diseases
 - an. Preventive medicine relevant to digestive diseases

4. Procedural Competency

The fellow is expected to become skilled in the following diagnostic and therapeutic procedures. The fellow must complete numerical requirements and demonstrate the successful completion of objective performance based criteria for competency in the following procedures:

- a. administration of moderate and conscious sedation
 - i. knowledge of sedation and sedative pharmacology
- b. esophagogastroduodenoscopy (EGD) with biopsy and polypectomy
 - i. esophageal dilation
 - ii. percutaneous endoscopic gastrostomy (PEG) tube placement
- c. colonoscopy with biopsy and polypectomy
- d. flexible sigmoidoscopy with biopsy and polypectomy
- e. percutaneous liver biopsy
- f. paracentesis, including large volume paracentesis
- g. gastrointestinal motility and 24-hour pH probe studies
- h. biopsy of the esophagus, stomach, small intestine, and colon
- i. nonvariceal hemostasis, including upper and lower endoscopies and active bleeders
- j. variceal hemorrhage, including active bleeders

- k. capsule endoscopy
- l. enteral intubation and bougienage (including naso-gastric and oro-gastric tube placement)

(See Procedures on page 97 and Addendum 1)

5. Gastrointestinal and Hepatic Histology and Pathology

The fellow is expected to gain knowledge of the normal and pathologic histology of the gastrointestinal tract and liver. The trainee should recognize inflammatory and neoplastic conditions involving the gastrointestinal tract and liver. The trainee should know the pathologic features of:

- a. Esophageal diseases including reflux and Barrett's esophagitis
- b. Recognize normal tissue throughout the GI tract and liver
- c. Common intestinal diseases that can lead to malabsorption
- d. Recognize features of Crohn's disease, ulcerative colitis and other inflammatory conditions
- e. Pre-neoplastic and neoplastic disorders of the gastrointestinal tract, esophagus, pancreas, hepato-biliary tree and liver
- f. Characterize the various forms of hepatitis, cholestasis, and recognize cirrhosis.
- g. Recognize infectious etiologies of diarrhea, colitis, and enteritis

6. Diagnostic Imaging

The trainee should understand the role of the basic imaging modalities in the diagnosis and therapy of digestive diseases. These procedures include:

- a. Barium contrast studies
- b. Ultrasonography, including endoscopic ultrasound
- c. Computed tomography (including virtual colonography and CT enterography)
- d. Magnetic resonance imaging (including MRCP)
- e. Vascular radiology
- f. Pancreatic and biliary radiology
- g. Invasive therapeutic techniques including percutaneous biopsy and drainage, percutaneous gastrostomy, embolization, and placement of an internal porto-systemic shunt (TIPS).
- h. Percutaneous cholangiography
- i. Nuclear imaging
- j. Isotope based tests including breath analysis and cyanocobalamin absorption.
- k. The trainee should understand the utility of these procedures in specific clinical conditions, develop a detailed knowledge of the risk and benefits of interventional procedures, and have an appreciation of their cost.

7. Other Technical Skills

The fellow will understand the indications, contraindications, complications, limitations, and interpretation of the following diagnostic and therapeutic techniques and procedures:

- a. Percutaneous cholangiography
- b. Pancreatic needle biopsy
- c. ERCP in all of its diagnostic and therapeutic applications
- d. Indication for TIPS

e. Endoscopic ultrasound

8. Liver transplantation

The fellow will acquire knowledge about, and understand the role of liver transplantation in patients with acute and chronic liver failure and understand the management of patients who have received a liver transplant, or are in the pre-transplant, peri-transplant, and post-transplantation period.

9. Other knowledge

The fellows will acquire knowledge about and understand the following as these areas relate to digestive diseases:

- a. The behavioral adjustments of patients to their diseases
- b. The impact various modes of therapy will have on patients and their families, including cost
- c. Cost-containment issues, including the prudent, cost-effective, and judicious use of various tests, procedures, medications and other therapies as their use relates to the diagnosis and management of their patients with digestive diseases
- d. Critical assessment of the medical literature, medical informatics, clinical epidemiology, and biostatistics
- e. Quality assessment, quality improvement, patient safety, risk management, pain management, and physician impairment
- f. Ethical conduct
- g. Research design and statistics for patient-oriented studies, translational studies, and laboratory based studies
- h. Socio-economic, cultural, ethnic, gender and age related issues
- i. Medico-legal issues

General Goals and Objectives

Fellows are expected to conduct themselves in a courteous and professional manner throughout their fellowship at all times. Attendance at section conferences is mandatory; there are no exceptions except for vacation, medical or scientific conferences, and illness. Attendance at medical and scientific conferences is expected, especially if the topic is related to gastroenterology or hepatology.

When responding to a consultation request, the fellow is expected to provide a comprehensive evaluation of a patient's gastrointestinal or hepatic illness in a prompt and concise manner, formulate a prioritized differential diagnosis, and outline the proposed evaluation. The fellow should be able to enter a clear and legible document into the patient's records. The fellow should be able to communicate his/her evaluation in a clear, concise and effective manner to the requesting physician and provide acceptable follow-up. Interactions with colleagues and allied personnel should be conscientious, respectful, responsible, punctual and appropriate. The fellow must exhibit humanistic qualities when interacting with patients and demonstrate integrity, respect, and compassion. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues. The fellow will be ethical and honest.

The following are general guidelines that all fellows must adhere to:

1. All fellows must answer their pages promptly. You should answer your pager as soon as you get the page, unless you are busy with patient care activities, such as performing procedures. In this case, you should politely ask someone who is in the room with you to answer your pager while you continue to do the procedure.
2. Email must be checked and answered promptly. Email is used to send general messages to all fellows and specific messages to individual fellows.
3. Fellows must return evaluations promptly.

Goals and Objectives for Months 1-3

At the end of this period, the fellow will be expected to exhibit competency in the following areas:

1. Patient Care

- a. demonstrate a caring and respectful attitude and behavior towards patients and families.
- b. perform all components of the gastrointestinal and liver examination, including history (present, past, family and social history), review of systems, and physical examination within an appropriate time frame.
- c. begin to be able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference.
- d. begin to be able to develop and implement management plans and modify plans as new information becomes available.
- e. be able to perform discharge planning, including arranging outpatient follow up clinic visits and procedures.
- f. be able to demonstrate proper knowledge and technique in obtaining informed consent, and the indications and contraindications for endoscopic procedures.
- g. be able to demonstrate proper knowledge for screening procedures.
- h. be able to administer appropriate conscious sedation.
- i. begin to be able to recognize complications.
- j. have the rudimentary ability to manipulate the scope for upper and lower endoscopies (GI services). See Procedures on page 97.
- k. demonstrate the ability to perform a liver biopsy and paracentesis (liver service). See Procedures on page 97.
- l. demonstrate the ability to work within a team.
- m. be able to practice health promotion and disease prevention.

2. Medical Knowledge

- a. demonstrate medical knowledge, presentation, evaluation and treatment for the most common digestive disease emergencies including the following:
 - i. Acute gastrointestinal bleeding from the upper or lower gastrointestinal tract
 - ii. Caustic ingestion and foreign body extraction
 - iii. The acute abdomen and abdominal pain
 - iv. Intestinal obstruction and pseudo-obstruction.
 - v. Severe diarrhea including acute presentations of inflammatory bowel disease
 - vi. Intestinal ischemia

- vii. Acute pancreatitis
- viii. Biliary tract obstruction and cholangitis, gallstones and acute and chronic cholecystitis
- ix. Acute hepatic failure
- b. demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, and social sciences and apply this knowledge to gastroenterology. This includes appropriate interpretation of radiology and pathologic findings.
- c. demonstrate a scholarly attitude and be committed to a life of learning.
- d. demonstrate evidence-based decision making and the scientific method of problem solving.
- e. demonstrate an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. be able to evaluate and analyze his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. accept and respond to constructive feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. facilitate, and participate in, the learning of others including students, residents and other health care professionals by presentation on rounds and at conferences.
- e. recognize strengths, deficiencies, and limits in his or her own knowledge and expertise.
- f. will set learning and improvement goals.
- g. facilitate, and participate in, the education of patients and families

4. Interpersonal and Communication Skills

- a. listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. provide effective and professional consultation to other physicians and members of the health care team.
- c. be able to notify members of the health care team, the patient, and/or family members of endoscopic findings.
- d. be able to generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- e. be able to write legible and effective chart notes.
- f. demonstrate the ability to teach effectively on rounds and at conferences.
- g. will work effectively as a member and leader of the health care team.

5. Professionalism

- a. demonstrate a respectful and appropriate attitude to housestaff, medical students, and other members of the health care team.
- b. be able to answer consults in a timely fashion depending on the urgency.

- c. demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy..
- e. be ethical and honest.
- f. demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, on-time attendance at clinics, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. be responsive to patient needs superceding self-interests.
- h. demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. begin to be able to apply evidence-based medicine and utilize cost-effective health care principles to provide optimal patient care.
- b. be an advocate for quality patient care and for his or her patient within the health care system.
- c. be able to use the data access system of the GI procedure center and the hospital computer system where he or she is doing a rotation.
- d. begin to be able to make appropriate suggestions for referrals to other subspecialties.
- e. will work effectively within the health care system.
- f. will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. will coordinate patient care within the health care system relevant to digestive diseases.
- h. will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. will participate in identifying system errors and implementing potential system solutions.

Goals and Objectives for Months 4-6

The fellow will continue to add to his or her knowledge base and goals and objectives as discussed above. Additionally, at the end of the second three months of clinical training, the fellow will be expected to exhibit competency in the following areas:

1. Patient Care

- a. demonstrate a caring and respectful attitude and behavior towards patients and families.
- b. demonstrate fluency in all components of the gastrointestinal and liver examination, including history (present, past, family and social history), review of systems, and physical examination within an appropriate time frame.
- c. formulate a more advanced diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference.
- d. develop and implement more advanced management plans and modify plans as new information becomes available.
- e. be able to perform discharge planning, including scheduling clinic and procedure follow up appointments.

- f. be fluent in demonstrating proper knowledge and technique in obtaining informed consent, and the indications and contraindications for endoscopic procedures.
- g. be fluent in the proper knowledge for screening procedures.
- h. be able to independently administer appropriate conscious sedation.
- i. be more advanced in recognizing complications and the management of complications.
- j. have a more advanced ability to manipulate the scope for upper and lower endoscopies (GI services). See Procedures on page 97. Once the minimum number of endoscopic procedures has been reached, the fellow will be evaluated in competency-based criteria for procedural competency. See Addendum 1.
- k. demonstrate the ability to perform a liver biopsy (liver service) and paracentesis. See Procedures on page 97.
- l. demonstrate the ability to work within a team.
- m. be able to practice health promotion and disease prevention.

2. Medical Knowledge

- a. demonstrate medical knowledge for basic gastrointestinal and hepatic physiology including the following:
 - i. anatomy of the gastrointestinal tract including its blood supply
 - ii. gastrointestinal motility
 - iii. the role of the stomach, pancreas, and bile with respect to digestion
 - iv. the mechanisms and sites of nutrient and electrolyte absorption by the small intestine and colon
 - v. the regulation of gastric, pancreatic, biliary, and intestinal secretion
 - vi. the roles of the liver in the: i) synthesis and release of essential metabolic factors (such as albumin and prothrombin) into the blood, ii) metabolism and detoxification of a number of substances, iii) synthesis and secretion of bile
 - vii. normal and abnormal laboratory values relevant to digestive diseases, including the interpretation of abnormal liver chemistries
 - viii. the natural history of digestive diseases.

- b. demonstrate medical knowledge for the following common digestive diseases including the clinical manifestations, natural history, behavioral adjustment of patients to their diseases, pathophysiology, and treatment of the following:
 - i. disorders of the esophagus including esophagitis, esophageal spasm, and achalasia
 - ii. acid-peptic disease of the stomach, including *Helicobacter pylori* infection and various methods for testing and diagnosing *Helicobacter pylori* infection
 - iii. irritable bowel syndrome
 - iv. infectious diseases of viral, retroviral, bacterial, mycotic, or parasitic etiology
 - v. gastrointestinal and hepatic manifestations of HIV infections
 - vi. acute and chronic hepatitis
 - vii. jaundice, cholestasis and cholestatic syndromes
 - viii. pathophysiology and treatment of portal hypertension
 - ix. chronic liver disease, cirrhosis, and its systemic manifestations including ascites, encephalopathy, variceal bleeding, and spontaneous bacterial peritonitis
 - x. premalignant and malignant processes of the esophagus, gastrointestinal tract, pancreas, biliary tract and liver

- xi. inflammatory bowel disease - Crohn's disease, ulcerative colitis, and indeterminate colitis
- xii. vascular disorders of the gastrointestinal tract
- xiii. alcoholic liver disease
- xiv. abdominal pain
- xv. nausea, vomiting and diarrhea, both acute and chronic
- xvi. constipation
- xvii. gastrointestinal bleeding – acute and chronic
- xviii. diverticular disease, including diverticulitis and diverticular bleeding
- xix. common laboratory tests pertinent to the GI tract or liver
- xx. women's health issues in digestive diseases
- xxi. geriatric gastroenterology
- xxii. pharmacology of medications relevant to the treatment of digestive diseases, including bioavailability, indications, usage, complications, and interactions with other medications and organ systems, including conventional medications as well as complimentary and alterative medications.
- xxiii. prevention and screening relevant to digestive diseases, including colon cancer screening, smoking cessation and carcinogens.
- c. begin to have a basic understanding of the gastrointestinal and hepatic histology and pathology, including recognizing normal tissue throughout the gastrointestinal tract and liver
- d. begin to have a basic understanding of the role of the imaging modalities in the diagnosis and therapy of digestive diseases, including the following procedures: barium contrast studies, ultrasonography, computed tomography, magnetic resonance imaging (including MRCP) and nuclear imaging.
- e. be more advanced in demonstrating critical thinking and knowledge of established and evolving biomedical, clinical, and social sciences and apply this knowledge to gastroenterology.
- f. continue to demonstrate a scholarly attitude and be committed to a life of learning.
- g. continue to demonstrate an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. be able to evaluate and analyze his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. accept and respond to constructive feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. continue to utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care and discuss any new information on rounds.
- d. facilitate, and participate in, the learning of others including students, residents and other health care professionals by presentation on rounds and at conferences.
- e. recognize strengths, deficiencies, and limits in his or her own knowledge and expertise.
- f. will set learning and improvement goals.
- g. facilitate, and participate in, the education of patients and families

4. Interpersonal and Communication Skills

- a. listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. be fluent in providing effective and professional consultation to other physicians and members of the health care team by providing a broader differential diagnosis, and at the same time providing more concise consultative notes.
- c. be able to notify members of the health care team, the patient, and/or family members of endoscopic findings.
- d. be able to generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- e. be able to write legible and effective chart notes.
- f. demonstrate the ability to teach effectively on rounds and at conferences.
- g. will work effectively as a member and leader of the health care team.

5. Professionalism

- a. demonstrate a respectful and appropriate attitude to housestaff, medical students, and other members of the health care team.
- b. be able to answer consults in a timely, efficient, concise fashion.
- c. demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy..
- e. be ethical and honest.
- f. demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, on-time attendance at clinics, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. be responsive to patient needs superceding self-interests.
- h. demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. be more advanced in applying evidence-based medicine and utilizing cost-effective health care principles to provide optimal patient care.
- b. be an advocate for quality patient care and for his or her patient within the health care system.
- c. be fluent in using the data access system of the GI procedure center and the hospital computer system where he or she is doing a rotation.
- d. be more advanced in making appropriate suggestions for referrals to other subspecialties.
- e. will work effectively within the health care system.
- f. will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. will coordinate patient care within the health care system relevant to digestive diseases.
- h. will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.

- i. will participate in identifying system errors and implementing potential system solutions.

Goals and Objectives for Months 7-12

The fellow will continue to add to his or her knowledge base as discussed above. The fellow must continue to demonstrate properly all of the above goals and objectives from the preceding six months of training. Additionally, at the end of the 12 months of clinical training, the fellow will be expected to exhibit competency in the following areas:

1. Patient Care

- a. At this stage the fellow should be performing consultations autonomously with minimal and only occasional additional attending input.
- b. At this stage the fellow should be able to manipulate the scope for diagnostic and therapeutic upper and lower endoscopies (GI) with very little additional input from the attending. See Procedures on page 97. Once the minimum number of endoscopic procedures has been reached, the fellow will be evaluated using competency-based criteria for procedural competency. (See Addendum 1).
- c. demonstrate knowledge of the indications and contraindications for capsule endoscopy.
- d. At this stage the fellow should be able to autonomously perform a liver biopsy and paracentesis (liver service). See Procedures on page 97.
- e. continue to perform discharge planning, including arranging outpatient follow up clinic visits and procedures.
- f. continue to practice health promotion and disease prevention.

2. Medical Knowledge

- a. in addition to the acquisition of medical knowledge during the first six months, the fellow should demonstrate medical knowledge, presentation, evaluation and treatment for the following digestive diseases and diagnostic tests:
 - i. gastric and intestinal motility disorders
 - ii. malabsorption and maldigestion including mucosal diseases and pancreatic insufficiency
 - iii. disorders of nutrient assimilation and malnutrition
 - iv. immunologically based diseases
 - v. drug-induced hepatic injury, including herbal medicines and over the counter drug induced injury
 - vi. pancreatic and biliary diseases, including gallstones and cholecystitis
 - vii. gastric, pancreatic, and biliary secretory tests
 - viii. genetic and inherited disorders
 - ix. depression, neurosis, and somatization disorders
 - x. surgical care of gastrointestinal and liver disorders and medical management of patients under surgical care for gastrointestinal disorders
 - xi. pregnancy and the GI tract and liver
 - xii. prevention, screening, and surveillance, including colon cancer screening, Barrett's esophagus, smoking cessation and carcinogens

- xiii. complimentary and alternative medicine (CAM) as it applies to GI and liver diseases including, but not limited to, the use of probiotics, herbal and over the counter medicines (OTC), vitamins and minerals, meditation, yoga, physical exercise, and patients' beliefs of treatment benefits.
- xiv. ethics as it applies to gastrointestinal and hepatic diseases, including but not limited to, liver transplantation, malignancy and end-of-life issues, and the appropriate evaluation and management of patients with diverse ethnic, cultural, socioeconomic and gender issues
- xv. general principles as they apply to liver transplantation
- xvi. medical genetics relevant to digestive diseases.
- xvii. knowledge and appropriate use of enteral and parenteral alimentation
- xviii. anatomy, physiology, pathology and molecular biology related to the gastrointestinal tract, including the liver, biliary tract and pancreas
- xix. indications and complications of surgical procedures relevant to digestive diseases.
 - b. demonstrate an understanding of gastrointestinal and hepatic histology and pathology, including recognizing inflammatory and neoplastic conditions, normal tissue, esophageal disorders, intestinal disorders leading to malabsorption, inflammatory bowel disease, hepatitis, cholestasis, and cirrhosis, and infectious etiologies.
 - c. demonstrate an understanding of the role of the imaging modalities in the diagnosis and therapy of digestive diseases, including the following procedures: barium contrast studies, ultrasonography, computed tomography, virtual colonography, vascular, pancreatic and biliary radiology, magnetic resonance imaging (including MRCP) and nuclear imaging and isotope based tests, invasive therapeutic techniques (including percutaneous biopsy and drainage, percutaneous cholangiography, pancreatic needle biopsy, percutaneous gastrostomy, embolization and TIPS placement), vascular, pancreatic and biliary radiology. The fellow should understand the utility of these radiologic procedures in specific clinical conditions, develop a detailed knowledge of the risk and benefits of these procedures, including interventional procedures, and have an appreciation of their cost.
 - d. demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, and social sciences and apply this knowledge to gastroenterology.
 - e. continue to demonstrate a scholarly attitude and be committed to a life of learning.
 - f. continue to demonstrate an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. be able to evaluate and analyze his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. accept and respond to constructive feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. continue to utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care and discuss any new information on rounds.
- d. facilitate, and participate in, the learning of others including students, residents and other health care professionals by presentation on rounds and at conferences that reflects the level of knowledge and preparation that is expected at this level of training.

- e. recognize strengths, deficiencies, and limits in his or her own knowledge and expertise.
- f. will set learning and improvement goals.
- g. facilitate, and participate in, the education of patients and families.

4. Interpersonal and Communication Skills

- a. listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. be fluent in providing effective and professional consultation to other physicians and members of the health care team by providing a broader differential diagnosis, while becoming more concise with each consult.
- c. be able to notify members of the health care team, the patient, and/or family members of endoscopic findings.
- d. be able to generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- e. be able to write legible and effective chart notes.
- f. demonstrate the ability to teach effectively on rounds and at conferences.
- g. will work effectively as a member and leader of the health care team.

5. Professionalism

- a. demonstrate a respectful and appropriate attitude to housestaff, medical students, and other members of the health care team.
- b. be able to answer consults in a timely fashion depending on the urgency and be able to triage appropriately.
- c. demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy..
- e. be ethical and honest.
- f. demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, on-time attendance at clinics, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. be responsive to patient needs superceding self-interests.
- h. demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. be fluent in applying evidence-based medicine and utilizing cost-effective health care principles to provide optimal patient care.
- b. be an advocate for quality patient care and for his or her patient within the health care system.
- c. be fluent in using the data access system of the GI procedure center and the hospital computer system where he or she is doing a rotation.
- d. be fluent in making appropriate suggestions for referrals to other subspecialties.
- e. will work effectively within the health care system.
- f. will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.

- g. will coordinate patient care within the health care system relevant to digestive diseases.
- h. will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. will participate in identifying system errors and implementing potential system solutions.

Goals and Objectives for Months 13-36

The fellow will obtain clinical training through continued participation on inpatient rotations, clinical elective, procedures, and ambulatory continuity clinics to continue enhancement of his or her clinical and endoscopic skills acquired during the first 12 months of training. By the end of the three year fellowship, the fellow will be expected to demonstrate fluency and the competency expected of a consultant gastroenterology and hepatologist in all areas of patient care, including procedural competency in diagnostic and therapeutic upper and lower endoscopies, capsule endoscopy, liver biopsies, and motility interpretation; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; professionalism; and systems-based practice as they relate to digestive diseases.

Advanced Endoscopy-ERCP Training

All fellows will receive clinical training in the indications and mechanics of diagnostic and therapeutic ERCP including the interpretation of ERCP radiographs, recognition and treatment of complications, and long-term management of patients with biliary and pancreatic diseases. This will be through didactic lectures, presentation of cases at conferences, and the care of patients pre-and post ERCP.

In addition, two clinical fellows per year who are selected prior to matriculation, will receive hands-on training during their third year in diagnostic and therapeutic ERCPs as part of their clinical training. See ERCP Training below on pages 51 (Y-NHH) and 69 (VA).

Clinical Elective

During months 13-36, selected fellows will receive three months of additional ambulatory clinical training including, but not limited to the following areas: nutrition, pediatrics, radiology, motility and capsule endoscopy. See Clinical Elective description on page 82.

Liver Transplantation Rotation

During months 13-36, selected fellows will receive three months of additional clinical training in liver transplantation at Y-NHH. See Y-NHH Liver Transplant Rotation description on page 39.

Throughout the second 24 months of training, fellow will continue to add to his or her knowledge base and procedural competency as discussed above. At the end of clinical training, the fellow will be expected to exhibit fluency and competency in the following areas:

1. Patient Care

- a. The fellow should be performing all consultations autonomously.
- b. The fellow should be able to manipulate the scope for diagnostic and therapeutic upper and lower endoscopies (GI services) without additional attending input. See Procedures on page 97. The fellow should have met all competency-based criteria for procedural competency. (See Addendum 1.)
- c. The fellow should be able to autonomously interpret a capsule endoscopy.
- d. The fellow should be able to autonomously perform a liver biopsy and paracentesis (liver service). See Procedures on page 97.
- e. The fellow should be able to autonomously interpret motility tracings and 24-hour pH probes.
- f. The fellow should be able to autonomously evaluate and treat patients for nutritional disorders.
- g. Fellows who have received training in ERCPs should be able to meet the competency-based criteria for procedural competency in ERCP training. (See Addendum 1.)

2. Medical Knowledge

- a. demonstrate fluency in all aspects of medical knowledge as discussed under General Medical Knowledge in Digestive Diseases on page 4.
- b. will acquire knowledge about and understand the following as these areas relate to digestive diseases:
 - i. The behavioral adjustments of patients to their diseases
 - ii. The impact various modes of therapy will have on patients and their families, including cost
 - iii. Cost-containment issues, including the prudent, cost-effective, and judicious use of various tests, procedures, medications and other therapies as their use relates to the diagnosis and management of their patients with digestive diseases
 - iv. Critical assessment of the medical literature, medical informatics, clinical epidemiology, and biostatistics
 - v. Quality assessment, quality improvement, patient safety, risk management, pain management, and physician impairment
 - vi. Ethical conduct
 - vii. Research design and statistics for patient-oriented studies, translational studies, and laboratory based studies
 - viii. Socio-economic, cultural, ethnic, gender and age related issues
 - ix. Medico-legal issues
- c. demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, and social sciences and apply this knowledge to gastroenterology.
- d. demonstrate a scholarly attitude and be committed to a life of learning.
- e. demonstrate evidence-based decision making and the scientific method of problem solving.
- f. demonstrate an attitude of caring that is derived from humanistic and professional values.
- g. know the indications, contraindications, risks, benefits and alternatives to endoscopic ultrasound, capsule endoscopy, ERCP, esophageal and ano-rectal motility, and 24 hour

pH probes. The fellow should understand the utility of these procedures in specific clinical conditions, develop a detailed knowledge of the risk and benefits of these procedures, and have an appreciation of their cost.

h. the fellow will acquire knowledge about, and understand the role of liver transplantation in patients with acute and chronic liver failure and the evaluation and management of patients in the pre-transplant, peri-transplant, and post-transplantation periods.

3. Practice-Based Learning and Improvement

a. be able to evaluate and analyze his/her own patient care practices using quality improvement methods and implement change with the goal of practice improvement.

b. accept and respond to constructive feedback, incorporate the feedback into improving activities, behavior, or attribute.

c. continue to utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care and discuss any new information on rounds.

d. facilitate, and participate in, the learning of others including students, residents and other health care professionals by presentation on rounds and at conferences that reflects the level of knowledge and preparation that is expected of an attending consultant.

e. recognize strengths, deficiencies, and limits in his or her own knowledge and expertise.

f. will set learning and improvement goals.

g. facilitate, and participate in, the education of patients and families.

4. Interpersonal and Communication Skills

a. listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.

b. be fluent in providing consistently effective and professional consultation to other physicians and members of the health care team by providing a broad differential diagnosis and an effective treatment plan.

c. be able to notify members of the health care team, the patient, and/or family members of endoscopic findings.

d. be able to generate endoscopic reports that are grammatically correct, accurate in content, and concise.

e. be able to write legible and effective chart notes.

f. demonstrate the ability to teach effectively on rounds and at conferences.

g. will work effectively as a member and leader of the health care team.

5. Professionalism

a. demonstrate a respectful and appropriate attitude to housestaff, medical students, and other members of the health care team.

b. be able to answer consults in a timely fashion depending on the urgency and be able to triage appropriately.

c. demonstrate respect, integrity, and compassion toward patients, families and all other people.

- d. be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy..
- e. be ethical and honest.
- f. demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, on-time attendance at clinics, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. be responsive to patient needs superceding self-interests.
- h. demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. be fluent in applying evidence-based medicine and utilizing cost-effective health care principles to provide optimal patient care.
- b. be an advocate for quality patient care and for his or her patient within the health care system.
- c. be fluent in using the data access system of the GI procedure center and the hospital computer system where he or she is doing a rotation.
- d. make appropriate suggestions for referrals to other subspecialties.
- e. will work effectively within the health care system.
- f. will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. will coordinate patient care within the health care system relevant to digestive diseases.
- h. will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. will participate in identifying system errors and implementing potential system solutions.

Evaluations

In order for the training program to assess its ability to meet its goals and objectives, formative and summative evaluations of the fellows, faculty, and the program are performed regularly. The faculty regularly evaluate the fellows throughout the training period. In turn, the fellows provide regular evaluations of the faculty and the training program to the section chief and the program director. The completed evaluation forms for the past years are available on request. The details of these evaluations follow.

1. Evaluation of the Fellow's Clinical Progress

The fellows are monitored for their success in meeting the requirements outlined in the Curriculum including patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. Each of the core competencies will be evaluated by at least 2 different evaluation tools. These methods are outlined below:

- 1) Methods of Documenting Evaluation by Competency (all competencies also evaluated by direct observation and documented on global evaluation during clinical rotations).

- a. Patient Care
 - i. Global evaluation (monthly each clinical rotation)
 - ii. Procedure logs (reviewed bi-annually by PD)
 - iii. Mayo clinic colonoscopy skills evaluation (every 1-2 month evaluation during weekly endoscopy sessions or monthly at VA rotation or Yale GI rotation)
 - iv. Mini-Cex (in clinic, quarterly)
 - v. 360 Evaluation (clinic nurse twice yearly, endoscopy nurse twice yearly, peer twice yearly)
- b. Medical Knowledge
 - i. Global Evaluation (monthly each clinical rotation)
 - ii. In-training exam- (yearly must be completed at least 2 out of 3 years of fellowship)
 - iii. Mayo clinic colonoscopy skills evaluation (monthly evaluation during weekly endoscopy sessions or monthly at VA rotation or Yale GI rotation)
- c. Practice-based learning and Improvement
 - i. Global Evaluation (monthly each clinical rotation)
 - ii. Trends on In-training exam (yearly must be completed at least 2 out of 3 years of fellowship)
 - iii. Fellow self-directed chart review with documentation (HCRC liver clinic ABMI HCV PIMs ABIM)
 - iv. Quality improvement project evaluation (after project proposal and at completion QIPAT7 ACGME)
 - v. Evaluation of journal clubs, lectures, case-conferences- verbal feedback
- d. Interpersonal communication skills
 - i. Global Evaluation (monthly each clinical rotation)
 - ii. Mini-Cex (in clinic, quarterly)
 - iii. 360 evaluations (clinic nurse twice yearly, endoscopy nurse twice yearly, peer twice yearly)
- e. Professionalism
 - i. Global Evaluation (monthly each clinical rotation)
 - ii. Mini-Cex (in clinic, quarterly)
 - iii. 360 evaluations (clinic nurse twice yearly, endoscopy nurse twice yearly, peer twice yearly)
- f. Systems-Based Practice
 - i. Global Evaluation (monthly each clinical rotation)
 - ii. Quality improvement project evaluation (after project proposal and at completion)

- iii. 360 Evaluations (clinic nurse twice yearly, endoscopy nurse twice yearly, peer twice yearly)
 - g. Research
 - i. Review of publication, abstracts bi-annual meeting with PD
 - ii. Committee meeting twice yearly with research evaluation
 - h. Procedural Competence
 - i. Mayo clinic colonoscopy skills evaluation (monthly evaluation during weekly endoscopy sessions or monthly at VA rotation or Yale GI rotation)
 - ii. Upper endoscopy verbal feedback during endoscopy with colonoscopy skills evaluation as an indicator
 - iii. Liver biopsy verbal feedback during biopsy as no clear evaluation tools available
- 2) Expectations: All of the evaluations assess fellows on a 4 point scale. This is meant to assess stages of learning from 1) unconsciously incompetent= novice = below expectations 2) consciously incompetent = early learner, progressing = developing 3) consciously competent = competent = meets expectations 4) unconsciously competent = expert = exceeds expectations. The expected milestones for each of the competencies is outlined previously in this document, however we understand that some fellows may begin more prepared and may achieve milestones ahead of the scheduled expectation whereas others may take longer. We expect all fellows beginning the program to be at least at a level of consciously incompetent in elements of patient care, problem-based learning and improvement. All fellows should be consciously competent with respect to most aspects of interpersonal communication skills and professionalism at the initiation of fellowship. Fellows are expected progress to a level of consciously competent with respect to all of the competencies within the three year training period. A few fellows may achieve a level of unconsciously competent with respect to some or all of the competencies within the training period. Any fellow who is felt to be unconsciously incompetent with respect to any of the competencies by more than one evaluator will need re-mediation and if unable to improve may not be able to continue in the training program.

The faculty review at least one clinical examination done by the fellow during each inpatient and outpatient rotation. Faculty are encouraged to meet with the program director to discuss problems they may have encountered during the month so that remedial action may be taken. They are also required to give the fellows verbal feedback half-way through the rotation and again at the end of the rotation. Attendings are required to verbally review their written evaluations with the fellows.

B. Monthly Faculty Meetings

At monthly faculty meetings, the faculty discuss in depth the clinical or research performance of 6 fellows, so that all fellows are discussed twice per year. At these meetings the progress of the fellow is discussed, including patient care (including procedural proficiency), medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. Notes taken from these meetings are included in the fellow's file. If a fellow is not performing up to expected standards or remedial training is necessary, a course of action is decided upon. This might include appointing a faculty mentor or extra clinical training. The program director discusses this with the fellow and monitors the fellow's progress with the appointed faculty member.

C. Meetings with the Program Director

The fellowship program director, Dr. Anil Nagar, meets with each fellow every six months (or more frequently if needed) to formally review his/her performance and progress in the program and to counsel the fellow as needed. These meetings have the following objectives:

- i. Review the evaluations received from the various attending physicians as well as comments given at the monthly faculty meetings. All evaluations are reviewed and discussed with the fellow focusing on the six areas identified by the ACGME, including: patient care (including procedural proficiency), medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. Any areas that are unsatisfactory or below the fellow's expected level of competency will be reviewed in detail and remedial action will be recommended.
- ii. Review procedural logs to see if they are being kept up to date and to note if an individual fellow may be in need of additional procedures of a given type.
- iii. To allow the fellow to air problems they may have encountered or suggestions they may have for improvement. The Fellowship Director will respect the fellow's confidentiality in the event they have problems with a faculty member.
- iv. Discuss with the fellow regarding future career directions.

D. Summative Evaluations

The fellow receives a summative evaluation of his/her performance at the end of each year and at the conclusion of his/her training period in the program.

At the end of the training program all procedure records and written evaluations as well as the summative evaluations are included in the fellow's file for future reference.

E. Fellow Dysfunction

If issues are raised concerning a fellow's level of stress, psychological condition, or drug or alcohol-related dysfunction are detected, the fellow is asked to meet with the fellowship program director, Dr. Anil Nagar. Once the problem is identified, the program director in conjunction with other appropriate persons or counselors then meets with the fellow to determine an appropriate course of action, which could involve psychosocial, drug or alcohol-related counseling, or remedial rotations. There is an Employee

Assistance Program with counselors at both Yale University and Y-NHH that are available for counseling.

2. Disputed Evaluations

If the fellow disputes a monthly evaluation, he/she should first discuss the evaluation with the relevant faculty member. If there is no resolution, then the program director meets with both the trainee as well as the faculty member to attempt to reach a resolution. If this is not possible, then a committee consisting of the section chief, the program director, and another senior clinical faculty is convened and a plan of action is agreed upon. This might include independent observation of the reported deficiency, reassignment of clinical responsibilities, and/or extra clinical training.

If the fellow disputes an annual evaluation, then the fellow is offered the opportunity to address the deficiencies before a clinical competence committee consisting of the section chief, the program director, and another senior clinical faculty member. The findings of the committee will be final.

If the fellow believes that he/she has been discriminated against on the basis of race, color, sex, age, religion, national or ethnic origin, handicap, or status as a Vietnam era veteran, they may use the formal grievance procedure set up by Yale University. See Grievance Policy in the Reference Manual; the Grievance Policy is also available on the Yale University website.

3. Evaluation of Faculty Members by Fellows

All trainees evaluate each faculty member's performance as well as each rotation/ clinical site yearly. These evaluations are sent in confidence to the section chief, Dr. Michael Nathanson. Results of these evaluations are provided to the program director, Dr. Anil Nagar, without knowledge of the fellow's name and are used as a guide to improve the educational performance of the various faculty members or the rotation. Records of these reviews are maintained by the Section Chief's office and discussed with the respective attendings. These records are also forwarded to the Department Chair and considered in faculty promotions.

4. Evaluation of the Program by Fellows

a. Trainees confidentially evaluate their inpatient clinical rotations and their ambulatory clinical rotations yearly.

b. Annually, all trainees provide a confidential written evaluation of the fellowship program to the section chief, Dr. Michael Nathanson. These reviews are summarized and issues raised by the trainees are discussed at the monthly faculty meetings.

c. Dr. Anil Nagar and/or Dr. Avlin Imaeda and other faculty administrators meet every other month with the fellows to maintain close faculty communication. The fellowship program and any other concerns are discussed. Minutes of this meeting are maintained. Relevant comments from this meeting are confidentially discussed at the monthly faculty meeting or individually with appropriate faculty members.

d. Annually, for the first five years after graduation, written evaluations are sent to graduated fellows for comments about the training program.

e. Each of the above evaluations or comments are used to improve the fellowship program and to determine the degree to which the program's goals are being met.

5. Evaluation of the Program by Faculty

The fellowship program is evaluated in an ongoing basis at regularly scheduled, monthly faculty meetings as well as by other discussions and meetings between the program director, site directors, section chief, various faculty members, and fellowship coordinator. Included in these discussions are the degree to which the program's goals are being met, the evaluation of the utilization of the resources available to the fellowship program, the contributions of each institution, the financial and administrative support, the variety and volume of patients, faculty member performances, and the quality of supervision of the fellows.

6. Evaluation of the Fellow's Research Progress – Research Fellows

Each fellow doing independent research is responsible for organizing a committee composed of a mentor, common investigators within the Section of Digestive Diseases or other sections as relevant to his or her research, and a basic scientist (for those interested in bench research) or clinician (in the case of fellows interested in a career as clinical investigators). The committee is responsible for assessing the trainee's progress, providing guidance for their investigative activities and career, and aiding in obtaining grant support. This is documented on a research evaluation form. The trainee is expected to arrange meetings with the committee at least twice per year. Trainees are required to present their work both in section research conferences as well as regional and national meetings. (See also Research Training, page 101.) Trainees are required to review their progress and publications with the program director and bi-annual meetings.

Fellow Supervision

1. Patient Evaluation and Management-Throughout the fellowship and on all inpatient and outpatient rotations, the fellow will present the patient to the responsible faculty attending after he/she has initially evaluated the patient, reviewed the available data and formulated a diagnostic and therapeutic plan. The faculty in turn will evaluate the patient and write a chart note within 24 hours of the inpatient consult request or immediately after the fellow evaluation for ambulatory outpatients. As the level of training increases and the fellow reaches a higher level of competence, the fellow will be expected to formulate an increasingly more complex differential diagnosis and plan. The fellow will be expected to incorporate experience, readings, local availability and expertise, cost-effectiveness measures, as well as consideration of patient preferences into his/her management plan.

2. Procedures-The responsible faculty member will directly supervise the entire procedure, endoscopic or liver biopsy, for all fellows regardless of level of training. However, as the fellow's procedural proficiency increases, the level of independence in performing the procedure will increase accordingly. See also section on Procedures on

page 97.

3. On-call Attending-There is always an attending who is on-call with the fellow. The GI attending covers the GI service at Y-NHH and the VA; the liver attending covers the liver service at Y-NHH; the liver transplant attending covers the liver transplant service at Y-NHH; there is a separate liver attending at the VA; the ERCP attending covers the ERCP service at Y-NHH and at the VA; one attending from each HSR service is on call with both their own private patients and “Gen-Med” patients being rotated between these two services. There are on-call schedules that are available through the Yale GI answering service.

Clinical Training

Inpatient Consult Services - General Information

The fellowship program is designed to provide a high level of clinical competence in the subspecialty of gastroenterology and hepatology. During an orientation session, new fellows are given a copy of both the Curriculum and Reference Manual, which includes a summary of their responsibilities and schedules during various rotations.

Clinical rotations are provided in three different inpatient settings, each of which provides a slightly different spectrum of clinical disorders in gastroenterology and hepatology. During their clinical training in the different settings, fellows will care for patients with a wide range of clinical problems in all stages of illness providing them with the full breadth, depth, and spectrum of diseases in gastroenterology and hepatology. As the fellow progresses in the fellowship, more and more independence will occur as the fellow advances towards competency which should occur by the end of clinical training.

The fellows do consults as well as procedures, as needed, on the inpatients. Since consults are called directly to the fellows from the primary team caring for the patient, the fellow is the initial gastroenterologist or hepatologist who will be asked to evaluate the patient. The fellow might be called by a physician associate or medical student, intern, resident, or attending physician. Fellows are required to respond to requests for consults either immediately and no later than during the same day as they are requested, depending upon the urgency. The fellow must perform an initial history and physical examination and formulate a differential diagnosis and plan for further evaluation and treatment prior to the attending’s evaluation of the patient. It is the fellow’s responsibility to inform the attending of consultations and the degree of urgency. Together, the fellow and attending will arrange a time to meet in order for the attending to fully review the fellow’s evaluation of the patient and to supervise all necessary procedures. Attending rounds usually occur in the latter part of the afternoon, but an attending may be required to review the fellow’s evaluation earlier than the regular time. The fellow is also responsible for communicating recommendations to the primary physicians and for collecting all relevant information during longitudinal follow-up.

The attending will be responsible for evaluating the patient with the fellow, ensuring accuracy of the available data and appropriateness of the diagnostic and therapeutic plan and will then write a consult note in the chart within 24 hours of the consult request that accompanies the fellow's note. Referral of patients with complex gastrointestinal or liver diseases from outside hospitals or practitioners is common. In this case, the inpatient consultant GI, liver or ERCP fellow will receive the phone consult and discuss the patient with the appropriate service attending.

Educational Purpose - Overview for Consult Services

The educational purpose of each of the different inpatient consult services taken separately and in aggregate is to expose the fellow to diverse patients with a wide range of clinical problems so that at the end of the fellowship, the fellow will have achieved appropriate medical knowledge and procedural skills in the field of digestive diseases, as well as to have developed the interpersonal and communication skills and professional attitudes necessary to function as highly competent subspecialists in this field.

At the end of each rotation, the fellow will be expected to exhibit competency in the following areas: patient care including procedural skills, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice, as further outlined below under each rotation.

Yale-New Haven Hospital - General Information

Yale-New Haven Hospital (Y-NHH) is a university hospital with approximately 800 beds that functions as a tertiary care referral center for patients from northern New England to New Jersey with a regional catchment of over 1,000,000 individuals; a university teaching hospital; and a local, community hospital for 300,000 people living in New Haven County. Patients ages 18 and older with a full breadth and depth of digestive diseases are evaluated and treated here. The patient population is ethnically diverse and includes Caucasian, African-American, Hispanic, Asian, Indian and Middle Eastern populations. Approximately thirty percent of the patients are referred from other hospitals in Connecticut and surrounding states because of the specific expertise of the faculty, giving fellows an opportunity to evaluate and treat unusual as well as common digestive diseases. The patient mix is diverse and represents the diverse community of New Haven and surrounding communities. The gender mix is representative of the general population. Fellows at Yale-New Haven Hospital rotate on separate liver and gastroenterology consult services for three months at a time. Clinical fellows rotate on a separate ERCP consult service during their ERCP training. Second and third year fellows rotate on a separate liver transplant service during their liver transplant training.

Yale-New Haven Hospital - GI Consult Service Goals and Objectives

The educational purpose of the Y-NHH GI rotation is to provide the fellow with an opportunity to evaluate and treat inpatients with a wide spectrum, breadth and depth of gastrointestinal diseases from patients who are hospitalized and treated at Y-NHH, the mix of diseases and patient characteristics as discussed above under Yale-New Haven Hospital-General Information. Fellows are the initial contact person and will be paged

for the consult. The consult service takes inpatient consult calls from 8:00 am until 5:00 pm, Monday-Friday. The on-call fellow answers consult pages from 5:00 p.m. until 8:00 am, Monday-Friday and 8:00 am until 8:00 am Saturday, Sunday and holidays.

There are two fellows on this service at all times and each fellow will evaluate approximately 15 new consult patients each week. Longitudinal follow-up of consult patients while they are still hospitalized will occur as is appropriate.

During the three month rotation on this service the fellow will be called to evaluate and treat patients with disorders of the esophagus, stomach, small intestine, colon, pancreas, and biliary system.

The mix of diseases seen during the Y-NHH inpatient consult service include: diseases of the esophagus including dysphagia, esophageal dysmotility, GERD, Barrett's esophagus and esophageal cancer; diseases of the stomach including peptic ulcer diseases, upper GI bleeding from ulcers and varices, gastric outlet obstruction and gastroparesis, gastric neoplasms; diseases of the biliary tract including acute cholecystitis, cholangitis, hepatobiliary neoplasms; diseases of the pancreas including acute and chronic pancreatitis, pancreatic cancer; inpatient diseases including diarrhea, GI bleeding in critical care patients, post-operative ileus, nausea and vomiting and post-operative intestinal obstruction; inflammatory bowel disease including Crohn's disease and ulcerative colitis, acute diverticulitis and ischemic bowel; acute and chronic GI bleeding; graft vs host disease; acute and chronic abdominal pain; colonic polyps and malignancies; and other gastrointestinal neoplasms.

Examples of diseases and clinical problems the fellow will be called to evaluate include, but are not limited to the following:

Esophagus: learn the pathophysiology of diseases of the esophagus and the ability to use and interpret diagnostic tests with relation to the following diseases including dysphagia, gastro-esophageal reflux disease, achalasia, scleroderma, Barrett's esophagus and esophageal cancer. Learn the approach to treatment of bleeding disorders of the esophagus including ulcers and varices.

Stomach: learn the pathophysiology and pathology and treatment of diseases of the stomach. Learn the indications, usefulness and interpretation of tests used to diagnose and treat stomach diseases including peptic ulcer, H. pylori infection, non-ulcer dyspepsia, gastric malignancies, gastroparesis, nausea and vomiting, stress gastropathy and gastric varices.

Abdominal pain: learn mechanisms of abdominal pain, including visceral and referred pain. Describe and differentiate the etiology and presentation of acute abdominal pain, chronic abdominal pain and a surgical abdomen. Identify the presence of urgent and serious conditions requiring immediate referral to surgery. Describe the diagnostic approach to the evaluation of abdominal pain, including laboratory testing, radiological imaging and referral for urgent endoscopic evaluation.

GI bleeding: learn the indications and contraindications of endoscopy in patients with acute and chronic upper and lower GI bleeding. Understand the pathophysiology, use and interpretation of tests in patients with acute variceal bleeding, peptic ulcer bleeding,

small intestinal angiodysplastic bleeding, diverticular bleeding and bleeding from an intestinal malignancy.

Small intestine: learn the pathology and pathophysiology with indications, interpretation, availability and outcome of tests used in diagnosis and treatment of the following disorders: maldigestion including lactose intolerance, malabsorption including celiac sprue and secretory diarrheas, inflammatory diseases including Crohn's disease, radiation injury, small bowel tumors, motility disorders including ileus and pseudo-obstruction, irritable bowel syndrome, and surgical issues including obstruction, perforation and ileus.

Pancreatic diseases: understand the pathology and pathophysiology of acute and chronic pancreatitis. Learn the diagnostic approach and severity staging of patients with acute pancreatitis. Learn to manage the patient with acute pancreatic necrosis including the use of antibiotics and enteral feeding. Learn the etiologies and diagnostic approach to chronic pancreatitis and management of pancreatic pain and malabsorption. Understand the approach to pancreatic cancer staging and management including use of ERCP and EUS.

Biliary diseases: learn the pathophysiology and approach to interpretation and usefulness of tests for acute and chronic cholecystitis, biliary colic, cholangitis and cholangiocarcinomas.

Large intestinal diseases: learn the pathology, pathophysiology and understand and interpret tests used in the diagnosis and treatment relevant to the following disorders: diverticulosis and its complications, inflammatory disorders including ulcerative colitis and indeterminate colitis, infections diseases including C. difficile, shigella and campylobacter. Motility disorders including constipation, irritable bowel syndrome, and pseudo-obstruction. Malignancies including adenocarcinoma, lymphoma and carcinoid and FAP. Rectal disorders including hemorrhoids and fissures.

Abnormal radiologic findings: barium studies, CT scan, ultrasound, MRI/MRCP, nuclear imaging, and interventional radiology.

The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

Procedural Skills and Endoscopy

The fellow will do approximately 80 procedures on this rotation, including upper endoscopies, PEG tube placement, colonoscopies, and flexible sigmoidoscopies. Procedures will be both diagnostic and therapeutic with procedural skills including the following:

Competence in the indications, contraindication to upper and lower endoscopy and management of complications.

Competence in the approach to moderate conscious sedation.

Competence in the approach and management of anticoagulation, risk assessment and use of antibiotics in endoscopy.

Competence in the approach to endoscopy in the elderly.

Competence in upper endoscopy including removal of ingested foreign bodies, routine biopsy, treatment of upper GI bleeding with use of sclerotherapy, variceal banding ligation, BICAP cautery, hemo-clips. Dilation using bougie and balloons.
Competence in diagnostic sigmoidoscopy and colonoscopy including polypectomy, submucosal resection, dilatation of colonic strictures and use of sclerotherapy and cautery for management of colonic bleeding.
Competence in the use of Argon Plasma Coagulation (APC) and capsule endoscopy in the management of GI bleeding

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule on page 104) and small group attending rounds. There is direct mentoring of the fellows by the GI consult attending and during endoscopy. During endoscopic procedures the fellows are always supervised by an endoscopy attending. Procedures are first demonstrated by the attending, following which the fellow will perform the endoscopy by themselves under supervision of an attending who is in the endoscopy room. Fellows acquire the skills of a gastroenterology consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. Attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellows discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients that fellows have evaluated on the consult service, radiology viewing, and review of pathologic material.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient consultation. Consultation occurs in the emergency room, intensive care units, medical, surgical and ob-gyn floors, and endoscopy units. Longitudinal follow up encounters occur on a daily basis until the consultation is no longer required for the medical management of the patient. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy.

Teaching will occur regularly for each patient evaluated and will be directed at the disease which that particular patient has.

Fellows will review their patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the GI pathologists, Drs. Marie Robert, Dhanpat Jain, and Zenta Walther. Additionally, pathology is regularly reviewed at the weekly multi-disciplinary conference which occurs on Friday afternoons.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing endoscopic procedures including informed consent, indications and contraindications, indications for screening procedures, appropriate administration of conscious sedation, recognize and manage complications. After three months, the fellow should have performed approximately 80 procedures including upper endoscopy, PEG tube placement, colonoscopy, and flexible sigmoidoscopy. After performing 80 procedures, the fellow should be intubating the esophagus at least 75% of the time and the duodenum at least 50% of the time. The fellow should be reaching the cecum at least 50% of the time. See also Procedures on page 97.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to gastroenterology. This includes appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.

- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of endoscopic findings.
- c. The fellow will generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs that supercedes any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.
- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.

- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in interprofessional teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology

2. Journals (pertinent articles)

- a. The fellow is expected to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities.

Gastroenterology

Clinical Gastroenterology and Hepatology

Hepatology

American Journal of Gastroenterology

Gastrointestinal Endoscopy

Journal of Clinical Gastroenterology

New England Journal of Medicine

Educational Resources

Medical library resources of the Yale University School of Medicine

Digestive Diseases library with textbooks in internal medicine, gastroenterology and hepatology

Uptodate

Pubmed

Ovid

Yale-New Haven Hospital - Liver Consult Service and Klatskin Inpatient Service Goals and Objectives

The educational purpose of the Y-NHH Liver rotation is to provide the fellow with an opportunity to evaluate and treat inpatients and outpatients with a wide spectrum, breadth and depth of hepatologic diseases from patients who are hospitalized and treated at Y-NHH, the mix of diseases and patient characteristics as discussed above under Yale-New Haven Hospital-General Information. See also Y-NHH Liver Service – Logistical Considerations, page 44.

During the three month rotation on this service the fellow will be called to evaluate and treat patients with disorders of the liver. There are two fellows on this service at all times – one fellow is the consult fellow and one fellow is the Klatskin fellow and they switch after six weeks. Each fellow will evaluate approximately 5-10 new consults and/or admissions on inpatients each week.

In addition to the inpatient consults the fellows evaluate, they will also attend liver specific clinics including the fellow liver clinic at Temple St, the VA liver clinic and the clinics of Drs. James Boyer, Guadalupe Garcia-Tsao, Tamar Taddei, Joseph Lim, and Simona Jakab. Clinic attendance is mandatory; the only exception will be if the fellow's own continuity clinic occurs at the same time as the liver clinic does or if the consult service is excessively large or a patient is in need of urgent evaluation. The consult fellow will attend all morning clinics and the Klatskin fellow will attend all afternoon clinics.

The mix of diseases seen during the Y-NHH inpatient liver consult and Klatskin service include: acute and chronic liver diseases, e.g., viral hepatitis, autoimmune hepatitis, metabolic and inherited liver disease, PBC, PSC, and drug induced liver disease; abnormal liver tests; liver masses and other diagnostic imaging abnormalities; neoplastic liver disease; cirrhosis; complications of acute and chronic liver diseases; and patients listed for liver transplantation, in the preoperative period or greater than 3 months post-tranplant.

Examples of diseases and clinical problems the fellow will evaluate and treat include, but are not limited to the following:

Learn the pathology, pathophysiology and interpretation of liver tests and their relationship to diagnosis of liver diseases.

Learn the pathology and pathophysiology with indications and interpretation of diagnostic and therapeutic tests in the management of acute liver failure.

Learn the pathology and pathophysiology with indications and interpretation of tests in the management of acute viral hepatitis including acute hepatitis A, B and C.

Learn the pathology and pathobiology with indications and interpretation of tests in the management of patients with cirrhosis and its complications.

Learn the management of a patient with cirrhosis and renal failure including hepato-renal failure.

Learn the appropriate work up and listing of a patient for liver transplant evaluation.

Learn the appropriate follow up and management of a patient post-liver transplantation.

Learn the pre-operative and post-operative evaluation and management of a patient with chronic liver disease.

Learn the pathology, pathophysiology, work-up and management of a patient with hepatocellular carcinoma or cholangiocarcinoma.

Learn the pathology, pathophysiology, interpretation of liver tests and management of patients with cholestatic and metabolic liver diseases.

The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

The fellow will do approximately 10 procedures on this rotation, including liver biopsies and paracenteses (including large volume paracentesis).

Acquisition of procedural skills will include the following:

Competency in liver biopsy including indications, contraindications and management of complications and interpretation of results.

Competency in diagnostic and therapeutic abdominal paracentesis, including indications, contraindications and management of complications and interpretation of results.

Fellows will supervise residents when a large volume paracentesis is performed using a Barcelona needle.

Competency in interpretation of a hepatic wedge pressure gradient.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule), small group attending rounds and teaching during clinics. There is direct mentoring of the fellow by liver attending physicians. Liver biopsies are always performed under supervision of an attending. Fellows acquire the skills of a hepatology consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. Inpatient attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellows discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients that fellows have evaluated on the consult service and includes radiology viewing, and review of pathologic material.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient and outpatient consultations. Consultation occurs in the emergency room, intensive care units, medical, surgical and ob-gyn floors. Longitudinal follow up encounters occur on a daily basis until the consultation is no longer required for the medical management of the patient. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy.

Teaching will occur regularly for each patient evaluated and will be directed in disease specific manner.

Fellows will review their patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the GI and liver pathologists. Additionally, liver pathology is reviewed regularly twice weekly at the liver biopsy conference on Monday afternoon at 4:00 pm and at the multi-disciplinary conference which occurs on Friday afternoons.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing procedures including informed consent, indications and contraindications, indications for procedures, appropriate administration of conscious sedation, recognition and management of complications. After three months, the fellow should have performed approximately 10 procedures including liver biopsies and paracenteses. See also Procedures on page 97.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to hepatology, including appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.

- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his or her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of normal and abnormal findings.
- c. The fellow will generate procedure reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.

- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology
- c. Textbook of Hepatology: From Basic Science to Clinical Practice. Eds Rodes, Benhamou, Blei, Reichen, Rizzetto, 3rd edition, 2007. Blackwell, MA

2. Journals (pertinent articles)

- a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities

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Yale-New Haven Hospital - Liver Transplantation Rotation Goals and Objectives

Selected second and third year fellows will spend three months on the liver transplantation service learning both inpatient and outpatient management of patients in the pre-transplant and peri-transplant period. This will include follow-up and management of routine care and complications post-transplantation under the direct supervision of both transplant hepatologists and surgeons. The patient mix represents patients referred from the geographic area, including Connecticut, southern Massachusetts, and western New York state, who are in need of liver transplantation. Approximately 50 liver transplantations are performed each year at the Y-NHH.

The educational purpose of the Y-NHH liver transplantation rotation is to provide the fellow with an opportunity to evaluate and treat patients who require liver transplantation; the mix of diseases and patient characteristics is discussed above under Yale-New Haven Hospital-General Information. Fellows will be part of the liver transplantation team and will work directly with transplant hepatologists and surgeons. See also Y-NHH Liver Services – Logistical Considerations, page 44.

During the rotation on this service the fellow will evaluate and manage patients with acute and chronic liver failure who are in the pre-transplant, peri-transplant, and post-transplant period. The fellow will be involved in both inpatient evaluation and management and outpatient follow-up in clinic. The fellow will become familiar with immunosuppressive regimens post-transplantation, and become familiar with various topics in transplantation, as appropriate based on clinical issues that arise on the floors and in the clinics. The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

The mix of diseases the fellow will evaluate and treat during the Y-NHH liver transplant rotation include, but are not limited to the following: acute and chronic liver diseases, e.g., viral hepatitis, autoimmune hepatitis, metabolic and inherited liver disease, PBC, PSC, and drug induced liver disease; abnormal liver tests; liver masses and other diagnostic imaging abnormalities; neoplastic liver disease; cirrhosis; complications of acute and chronic liver diseases.

Examples of diseases and clinical problems the fellow will evaluate and treat include, but are not limited to the following, particularly as they relate to patients in the transplant setting:

Learn the pathology, pathophysiology and interpretation of liver tests and their relationship to diagnosis of liver diseases.

Learn the pathology and pathophysiology with indications and interpretation of diagnostic and therapeutic tests in the management of acute liver failure.

Learn the pathology and pathophysiology with indications and interpretation of tests in the management of acute viral hepatitis including acute hepatitis A, B and C.

Learn the pathology and pathobiology with indications and interpretation of tests in the management of patients with cirrhosis and its complications.

Learn the management of a patient with cirrhosis and renal failure including hepato-renal failure.

Learn the appropriate work up and listing of a patient for liver transplant evaluation.

Learn the appropriate follow up and management of a patient in the pre-transplan, peri-transplant, and post-transplant period.

Learn the pre-operative and post-operative evaluation and management of a patient with chronic liver disease.

Learn the pathology, pathophysiology, work-up and management of a patient with hepatocellular carcinoma.

Learn the pathology, pathophysiology, interpretation of liver tests and management of patients with cholestatic and metabolic liver diseases.

The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

The fellow will do approximately 10 liver biopsies and paracenteses as indicated on the patients, and will observe at least one liver replacement “skin to skin”.

Acquisition of procedural skills will include the following:

Competency in liver biopsy including indications, contraindications and management of complications and interpretation of results.

Competency in diagnostic and therapeutic abdominal paracentesis, including indications, contraindications and management of complications and interpretation of results.

Competency in interpretation of a hepatic wedge pressure gradient.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule) and small group attending rounds. Attendance at the interdisciplinary meetings is required as well as at the liver clinic meetings. Fellows acquire the advanced consultant skills on this rotation through direct patient care, self-directed learning, and through directed discussions with attendings on rounds and at conferences. However, UNOS certification will not be achieved during this rotation. Attending rounds usually occur twice daily-in the morning and in the latter part of the afternoon-and will include a discussion of all new referrals and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellows discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients that fellows have evaluated on the transplant service and includes radiology viewing, and review of pathologic material.

Fellows will review their patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the GI and liver pathologists. Additionally, pathology is regularly reviewed at the weekly multi-disciplinary conference which occurs on Friday afternoons at Yale University.

Longitudinal continuity of care will be a specific aim of this teaching activity. The fellow will have the opportunity to follow the same cohort of patients in the transplant clinic and on the inpatient liver transplant service.

At the end of this rotation, fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of disease in the patient, both inpatients and outpatients. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing procedures including informed consent, indications and contraindications, indications for procedures, appropriate administration of conscious sedation, recognize and manage complications. After the end of this rotation, the fellow should have performed approximately 10 procedures including liver biopsies and paracenteses. See also Procedures on page 97.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to transplant hepatology, including appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.

d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of normal and abnormal findings.
- c. The fellow will generate procedure reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively both in small group sessions, on rounds, and at the Transplant Clinical Conferences and Liver-Biliary-Pancreas Conferences.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.

- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs that superceding any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.
- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Philadelphia.
- b. Yamata's Textbook of Gastroenterology
- c. Textbook of Hepatology: From Basic Science to Clinical Practice. Eds Rodes, Benhamou, Blei, Reichen, Rizzetto, 3rd edition, 2007. Blackwell, MA

2. Journals (pertinent articles)

- a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal

fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities

b. Transplant Hepatology, Transplant Proceedings, Hepatology, Gastroenterology, Clinical Gastroenterology and Hepatology, American Journal of Gastroenterology, Journal of Clinical Gastroenterology, New England Journal of Medicine

Educational Resources

Medical library resources of the Yale University School of Medicine

Digestive Diseases library with textbooks in internal medicine, gastroenterology and hepatology; Uptodate; Pubmed; and Ovid

Yale-New Haven Hospital Liver Services – Logistical Considerations

INPATIENT (KLATSKIN) LIVER SERVICE – LOGISTICAL CONSIDERATIONS

In-patient (Klatskin) liver service consists of:

2 attendings (one hepatologist, one hospitalist)

1 fellow (primarily in the morning from 7:30 to 12:30)

2 residents

2 interns

1 physician assistant

- The service admits daily.
- House-staff and PAs admit on alternating days.
- The aim is to be primarily a liver service, but there will be non-liver patients as well (covered by the hospitalist attending).
- Liver patients are admitted to the liver attending (or to their private GI attending if that private attending desires).
- Residents are responsible for dictation of discharge summaries on patients cared for by interns.
- Fellows are responsible for dictation of discharge summaries on patients cared for by the PA.

Criteria for admission to the liver service – any *non-ICU* patient who is:

1. Seen in the ER with known or suspected acute or chronic liver disease (for example, elevated transaminases, non-obstructive jaundice, hepatic vein thrombosis, etc. If there is uncertainty regarding appropriate assignment of a patient to the liver service, the ER staff will discuss the patient with the liver consult fellow)
2. A known cirrhotic with decompensation – regardless of the cause of decompensation
3. Being worked up for transplant or on the transplant list – regardless of the cause of admission
4. More than three months post-transplant – with a non-surgical cause for admission

Who do we anticipate being admitted to this service?

Our goal is to be the referral service for all patients with end-stage liver disease. We anticipate that, initially, the following will be some of the patients admitted to our service:

- a) All patients currently managed by liver attendings
- b) Referrals for transplant evaluation
- c) Patients more than three months post-transplant
- d) Hill Health Center/Fair Haven Clinic/PCC patients with cirrhosis – many of whom have been underserved
- e) Patients with ESLD whose private GI would like us to manage in-house patients

Criteria for transfer to the liver service:

1. A consultation for acute or chronic liver disease in which the liver-associated problems clearly predominate.
2. Outside hospital transfers that meet admission criteria.

Daily work-flow:

1. Attending commences work rounds with house-staff at 7:30 am daily – liver patients should be rounded on first. (*clinics for attendings on service should not begin until 9:30 am.*)
2. The fellow on in-patient service is present for 7:30 work rounds and then breaks off to round with the PA (time to be worked out with the PA – probably 8:30)
3. The fellow then manages the in-patient service (post-rounds questions and in-patient procedures) until 12:30
4. There are attending teaching rounds 3 times a week – divided every-other-time by the two attending physicians.
5. There should be informal (card-flipping) sign-out rounds at 4:30 pm daily (the in-patient fellow is expected to participate if not in clinic). (*Attendings on service should see their last clinic patient at 3:00.*)
6. The fellow is responsible for writing admission and follow-up notes on the PA patients. The fellow is also responsible for keeping abreast of each case managed by the house-staff. If the in-patient fellow is in clinic in the afternoon, the consult fellow is responsible for admitting PA patients.

NB: Norms of written sign-out should be established early so that the covering services are aware of when and whom to call for change in clinical status.

Expectations for each member of the service should be set forth at the beginning of each month. Mid-month and end-of-rotation feedback should be provided for each house-officer.

Lines of communication:

From 8:00am to 5:00pm (HO ↔ attending; PA ↔ fellow; fellow ↔ attending)

NB: The following represents rough guidelines for the flow of communication. Communication will depend upon whoever is present on the floor. If the in-patient fellow is present, the fellow may field any questions. If the attending is present,

questions can be asked of the attending. The goals are to have open lines of communication and to foster strong relationships between the attending, fellow, and house-staff. The house-staff should always feel comfortable calling an attending; they should not feel that the fellow must be the “go-between.”

1. The resident calls the attending for any ER admissions, although the consult fellow will be involved in the appropriate triage of patients to the liver service if there is any uncertainty.
2. The PA calls the fellow for any ER admissions
3. The attending calls the resident for any outpatient admissions, the admission is facilitated (bed assignment, etc) by the fellow. Therefore, the attending should notify the fellow about ER and outpatient house-staff admissions, but the first call is between attending and resident for purposes of teaching and inclusion.
4. The fellow calls the PA for any outpatient admissions.
5. The fellow calls the attending and resident (or PA) for any transfers.
6. The patient’s intern calls the attending (or the PA calls the fellow) for any questions about existing patients – the fellow defers to the attending if unsure or if off-site.
7. The Klatskin fellow and Attending follows any patients who would have been admitted to the Klatskin service but was not due to issues of space. This is in order to prevent overloading the Consult fellow.

From 5:00pm to 8:00am

1. The resident calls the on-call attending for any ER admissions.
2. The fellow calls the resident for any outpatient admissions.
3. The fellow calls the resident for any transfers.
4. The patient’s intern/PA or covering HO calls the on-call fellow or the attending for any questions about existing patients – the fellow calls the attending if unsure or if there is a change in clinical status.
5. The fellow and residents are responsible for keeping the attending informed of all matters.

For house-staff (non-PA) patients:

- A. Communication should be at the resident level for all new admissions/transfers and changes in clinical status.
- B. Communication should be *encouraged* at the intern level once the patient has been admitted.

NB: For continuity, the fellow on in-patient service should let the on-call fellow know of any active patients.

Weekend workflow:

The attending should round with the house-staff team or covering team at a time decided upon between the attending and the team’s resident (typically around 8:00 am). Rounds should be kept brief and direct. On the weekends, the liver transplant fellow will round

with the attending on all liver service patients. The transplant fellow should have a sign-out from the in-patient fellow (on all patients – HO-covered and PA-covered) at all times for ease of communication.

LIVER CONSULT SERVICE – LOGISTICAL CONSIDERATIONS

Service consists of:

1 fellow (primarily in the afternoon from 12:30 to 5:00)

1 attending (also covering the in-patient liver service)

- The service sees new consults daily.
- The service handles liver patients in critical care settings.

Criteria for consultation/continuation of care:

1. Any ICU patient who is a known cirrhotic with decompensation – regardless of the cause of decompensation and not currently being considered for transplantation.
2. A consultation for acute or chronic liver disease in which the liver-associated problems are not central but require the attention of a consultant.

Who do we anticipate being admitted to this service?

1. Patients from the in-patient service who acutely decompensate and require ICU care
2. All other usual consultations that we currently see
3. Outside hospital transfers that meet admission criteria for ICU who are not transplant candidates

Daily work-flow:

1. The consult fellow should round briefly on all ICU patients from 7:00 to 8:00 am prior to reporting to clinic and call the attending for any acute issues. The attending should address the acute issues after work-rounds on the in-patient service.
2. Consult rounds and evening ICU rounds should commence promptly at 3:30 pm. Rounds break for the attending to be present at in-patient service sign-out at 4:30 and reconvene if necessary immediately following sign-out or didactics on Tuesday and Thursday.
3. The fellow should prioritize new consults first and follow-up notes second.

NB: Following morning work-rounds, the in-patient fellow should leave a reasonable priority “to-do” list for the consult fellow for the afternoon. Following morning triage rounds, the consult fellow should leave a reasonable priority “to-do” list for the in-patient fellow for the morning. This should be done by phone.

Lines of communication:

From 8:00am to 5:00pm

Consults are called to the consult fellow. If urgent AM consultation is required, the in-patient fellow should see the patient. Any time acute liver failure is suspected, the consultation should be called directly to the transplant fellow without delay.

From 5:00pm to 8:00am

Consults are called to the on-call fellow who is required to come in for all new consultations and discuss them with the attending.

NB: The in-patient and consult fellows will need to remain in fairly steady communication throughout the day and there can be no shifting of responsibility. Disputes should be arbitrated by the attending.

For better evening continuity, the consult fellow should inform the on-call fellow of any active patients.

Weekend workflow:

The weekend fellow should round on any consult patients deemed necessary to be seen by the daily consult fellow's weekend sign-out and then touch base with the attending (as is currently the norm for the GI service). It would be ideal for the attending to round with the fellow on these patients, but the attending should be cognizant of the demands of the weekend fellow and the many services covered by that fellow.

TRANSPLANT SERVICE – LOGISTICAL CONSIDERATIONS

Consultations for evaluation for liver transplant or for transplant related care and issues will be offered by our staff of attending transplant hepatologists, transplant surgeons, and nursing coordinators. A member of the transplant staff will always be on call and available for contact by attendings, fellows, house-staff or physician assistants for any care related issues.

Pre-transplant patients (in evaluation or listed for transplant) and post-transplant patients who are more than three months post-op will be admitted to the in-patient liver service. Transplant hepatology should be consulted at the discretion of the inpatient attending for patients pre- or post-liver transplant or if the patient is admitted to a different service (ICU, etc.).

The transplant hepatology fellow should be contacted first for all consultations to be seen by the transplant hepatology attending. The fellow should notify the attending on service of the consultation in a timely fashion. The patient should be seen and evaluated within 24 hours of the initial contact.

When not in clinic or performing procedures, the transplant fellow should offer to help the in-patient and consult fellows and should act as a "chief." The fellow should efficiently direct workflow and foster communication.

The liver transplant surgical fellow should be contacted first for all consultations to be seen by the liver transplant surgeon on service. The fellow should notify the attending on service or covering attending of the consultation in a timely fashion. The patient should be seen and evaluated within 24 hours of the initial contact.

Contact information will be provided for each of the members of the transplant team. Schedules for coverage will be made by the transplant hepatologists and will be maintained and distributed by the Digestive Diseases Section. An attending and a backup attending will be assigned for each day.

OUTPATIENT CLINICS – LOGISTICAL CONSIDERATIONS

The in-patient fellow goes to (non-transplant) liver clinics from 1:00 - 5:00 PM
The consult fellow goes to (non-transplant) clinics from 8:00 AM - 12:00 PM
These fellows “flip” six weeks into the rotation. They will cover each other during their continuity clinics in order to accommodate hospital responsibilities.
The transplant fellow covers transplant clinics and should alternate between attendings that have a clinic schedule conflict.

Fellows are responsible for dictating the patients they see in clinic if the attending requests this. Dictations should be edited by the fellow and turned around in a timely fashion for review and signature of the attending. All dictations should be signed and sent within one week of the clinic date without exception.

PROCEDURES – LOGISTICAL CONSIDERATIONS

All outpatient procedures (paracenteses, liver biopsy) should be scheduled in YPB 4 (688-4404). Procedures should be performed by the fellow in clinic (YPB or Dana) with supervision by the patient’s attending.

Nathan-Smith biopsies will also occur at YPB and scheduled on a monthly basis. A fellow will volunteer/be assigned to organize this schedule.

In-patient procedures should be done at the bedside by the fellow or by house-staff with fellow supervision where appropriate. The in-patient fellow will assist in the morning; the consult fellow will assist in the afternoon.

CURRICULUM FOR TEACHING ROUNDS

The following core topics should be taught during teaching rounds – preferably in the context of a pertinent case, not in lecture format.

- Interpretation of liver tests
- Fibrosis/portal hypertension/bleeding

- Fluid retention, ascites, and “the nephrology of liver disease”
- Portal systemic encephalopathy
- Acute liver failure
- Hepatocellular carcinoma/follow-up and surveillance of the cirrhotic patient

- **Yale-New Haven Hospital - ERCP Consult Service Goals and Objectives**

The educational purpose of the Y-NHH ERCP rotation is to provide the fellow with an opportunity to evaluate and treat inpatients with a wide spectrum, breadth and depth of gastrointestinal/biliary diseases from patients who are hospitalized and treated at Y-NHH, the mix of diseases and patient characteristics as discussed above under Yale-New Haven Hospital-General Information.

Those fellows who have entered the fellowship program in the clinical tract and who are to be exposed to biliary and pancreatic endoscopy will participate in this training during their second or third year. Research fellows may also have an opportunity to participate on the consult/inpatient portion of this rotation.

During the three to six month rotation on this service the fellow will be called to evaluate and treat patients with disorders of the pancreato-biliary system. There are 1-2 fellows on this service at all times. When there are 2 fellows there will be an ERCP rounder and an ERCP procedure fellow. Fellows, usually in their third year, that desire this advanced exposure will have the opportunity to participate in both the ERCP rounder and the ERCP procedure roles. Selected research fellows and clinical fellows who do not wish to receive ERCP exposure will have the opportunity to learn the management of biliary disease and interpretation of biliary radiographs by rotating on the ERCP rounder rotation. The 4th year fellow will typically rotate on the ERCP procedure service for the first 6 months of each year.

ERCP Rounder

The ERCP rounder fellow is the initial contact person and will be paged for new consults. The consult service takes inpatient consult calls from 8:00 am until 5:00 pm, Monday-Friday. The on-call fellow for the GI service answers consult pages from 5:00 p.m. until 8:00 am, Monday-Friday and 8:00 am until 8:00 am Saturday, Sunday and holidays. When an ERCP consult is called after hours and on the weekends, the GI fellow on-call will do the initial evaluation and then notify the ERCP fellow on-call. The ERCP fellow on-call is responsible for discussing the consult with the ERCP attending and for arranging the logistics of the ERCP procedure. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy.

The rounder fellow will evaluate approximately 10-15 new ERCP consults each week. Longitudinal follow-up of consult patients while they are still hospitalized will occur as is appropriate.

The mix of diseases seen during the ERCP service rotation include: acute and chronic biliary diseases, e.g., strictures and gallstone disease; acute and chronic pancreatitis; sphincter of Oddi dysfunction; and pancreatic and biliary neoplasms, both benign and malignant.

Examples of diseases and clinical problems the fellow will be called to evaluate include, but are not limited to the following:

Learn the indications, usefulness and interpretations of liver tests as they relate to biliary obstruction.

Learn the management of gallstone disease including biliary colic, acute cholecystitis, and ascending cholangitis.

Learn the approach to acute and chronic pancreatitis, including pancreatic pain, pancreatic strictures and pancreatic pseudocysts.

Learn the pathology and pathophysiology of sphincter of Oddi dysfunction.

Learn the pathology and management of biliary and pancreatic tumors including cholangiocarcinoma and pancreatic cancer.

Learn the approach to management of post-operative biliary complications.

Learn the approach to the management of biliary strictures.

Learn to interpret normal and abnormal radiographic findings.

The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology. For inpatient consults, the fellow is responsible for discussing the consult with the ERCP attending. During weekends and 5pm to 8am the on-call ERCP fellow will also be responsible for arranging the logistics of the ERCP procedure, including notifying the GI endoscopy suite, the patient's nurse and ward, writing appropriate orders, arranging radiology time and space, and anesthesia, if needed. The ERCP rounder will facilitate admission for patients that require admission following a procedure. The ERCP rounder will facilitate transfers from outside hospitals in coordination with the ERCP nurse practitioner. The ERCP rounder will manage the recovery of outpatient ERCP patients when the procedure fellow is not available. The ERCP rounder may have the opportunity to participate and learn to do advanced procedures such as esophageal and duodenal stent placement. The rounder should learn to pass a side-viewing endoscope.

In addition to the inpatient consults, the ERCP rounder fellow will attend the ERCP attending's, Dr. Priya Jamidar, Dr. Harry Aslanian and Dr. Uzma Siddiqui, weekly clinics at Y-NHH. Teaching will be directed at the patient specific problem or disease.

ERCP Procedure Fellow

The procedure fellow will do approximately 100 inpatient and outpatient ERCPs per three months and 200 ERCPs per six months, on this rotation. The procedure fellow will be responsible for arranging the logistics of the ERCP procedure, including notifying the GI endoscopy suite, the patient's nurse and ward, writing appropriate orders, arranging radiology time and space, and anesthesia, if needed. The procedure fellow will manage

outpatients during recovery and will contact the ERCP rounder and facilitate admission for patients that require admission or return to an inpatient bed following a procedure.

Procedures will be both diagnostic and therapeutic with procedural skills including the following:

Competency in moderate and conscious sedation.

Competency in the indications, contraindications, and management of complications and interpretation of diagnostic ERCP.

Competency in the indications, contraindications, and management and complications of biliary sphincterotomy

Competency in the indications, contraindications, and management and complications of pancreatic sphincterotomy.

Competency in the indications, contraindications, and management and complications of biliary strictures.

Competency in the indications, contraindications, and management of pancreatic strictures.

Competency in the indications, contraindications, and management of biliary and pancreatic calculi.

Competency in the indications, contraindications, and performance of biliary and pancreatic stent placement.

Competency in the indications, contraindications, and performance of biliary and pancreatic malignancies.

Competency in the management and complications of benign biliary disease.

Competency in advanced endoscopic procedures including pneumatic dilatation of post-op strictures, EMR, APC, and pseudocyst drainage.

The teaching methods on these rotations, including rounder and procedure fellow, will include direct patient care, weekly didactic lectures (see Conferences on page 104), small group attending rounds and teaching during clinics. Fellows acquire the skills of a gastroenterology/ERCP consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. There is direct mentoring of the fellows by the ERCP attending. All ERCP and advanced endoscopic procedures are performed under supervision of an attending in the endoscopy room. Attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellow discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients the fellow has evaluated on the consult service and includes radiology viewing, and review of pathologic material.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient and outpatient consultations. Consultation occurs in the emergency room, intensive care units, medical, surgical, and ob-gyn floors and in the endoscopy unit. Longitudinal follow up encounters occur on a daily basis until the consultation is no longer required for the medical management of the patient.

The fellow will review the patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

The fellow will review the patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the GI pathologists. Pathology is also regularly reviewed at the weekly multi-disciplinary conference which occurs on Friday afternoons.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing endoscopic procedures including informed consent, indications and contraindications, indications for screening procedures, appropriate administration of conscious sedation, recognize and manage complications. After three months, the procedure fellow should have performed approximately 100 ERCPs. After performing 100 ERCPs, the fellow should be able to intubate the duct of interest at least 50% of the time. After six months of ERCP training, the fellow should have performed at least 200 ERCPs, and should be able to intubate the duct of interest 95% of the time, extract biliary stones, place stents as needed and perform dilations as needed. See also Procedures on page 97 and the American Society for Gastrointestinal Endoscopy guidelines for determining competency.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to gastroenterology and ERCP. This includes appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of endoscopic findings.
- c. The fellow will generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.
- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology

2. Journals (pertinent articles)

- a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities

Gastroenterology

Clinical Gastroenterology and Hepatology

Hepatology

American Journal of Gastroenterology

Gastrointestinal Endoscopy

Journal of Clinical Gastroenterology
New England Journal of Medicine

Educational Resources

Medical library resources of the Yale University School of Medicine

Digestive Diseases library with textbooks in internal medicine, gastroenterology and
hepatology

Uptodate

PubMed

Ovid

VA Connecticut Health Care System - General Information

The VA Connecticut Health Care System Hospital is a 196 bed facility serving 52,000 veterans. It is the only Veteran's Hospital in the geographic area with an emphasis on digestive diseases. The patient mix is approximately 85% male and 15% female, but more and more women patients are being evaluated and treated at the VA hospital each year. Adult patients, who are eligible for VA benefits, with a full range of digestive diseases are seen and evaluated here. In addition, there is a wide spectrum of ethnic, cultural, racial, and socioeconomic differences in the patients who are treated here. Fellows spend six weeks each on separate hepatology and gastroenterology services during this rotation. Advanced clinical fellows rotate on a separate ERCP consult service during their ERCP training.

VA Connecticut Health Care System - GI Consult Service Goals and Objectives

The educational purpose of the VA GI rotation is to provide the fellow with an opportunity to evaluate and treat inpatients with a wide spectrum, breadth and depth of gastrointestinal diseases from patients who are hospitalized and treated at the VA hospital. The mix of diseases and patient characteristics are discussed above under VA Connecticut Health Care System-General Information. Fellows are the initial contact person and will be paged for the consult. The consult service takes inpatient consult calls from 8:00 am until 5:00 pm, Monday-Friday. The on-call fellow answers consult pages from 5:00 p.m. until 8:00 am, Monday-Friday and 8:00 am until 8:00 am Saturday, Sunday and holidays.

There is one fellow on the GI service at all times who evaluates approximately 10 new consult patients each week. Longitudinal follow-up of consult patients while they are still hospitalized will occur as is appropriate. In addition to the inpatient consults the fellows evaluate, they will also attend GI specific clinics at the VA. Clinic attendance is expected.

During the six week rotation on this service the fellow will be called to evaluate and treat patients with disorders of the esophagus, stomach, small intestine, colon, pancreas, and biliary system.

The mix of diseases seen in the VA inpatient consult and outpatient endoscopy clinic include: diseases of the esophagus including dysphagia, esophageal dysmotility, GERD, Barrett's esophagus and esophageal cancer; diseases of the stomach including peptic ulcer diseases, upper GI bleeding from ulcers and varices, gastric outlet obstruction and gastroparesis, and gastric polyps and malignancies; diseases of the biliary tract including acute cholecystitis, cholangitis, hepato-biliary neoplasms; diseases of the pancreas including acute and chronic pancreatitis, pancreatic neoplasms; colonic polyps and malignancies; other gastrointestinal neoplasms; inpatient diseases including diarrhea, GI bleeding in critical care patients, post-operative ileus, nausea and vomiting and post-operative intestinal obstruction; inflammatory disease including Crohn's disease and

ulcerative colitis, acute diverticulitis and ischemic bowel; acute and chronic GI bleeding; and acute and chronic abdominal pain.

The patient characteristics are elderly with a mean age of 70 and a predominance of white males (85%).

Examples of diseases and clinical problems the fellow will be called to evaluate include, but are not limited to the following:

Esophagus: learn the pathophysiology of diseases of the esophagus and the ability to use and interpret diagnostic tests with relation to the following diseases including dysphagia, gastro-esophageal reflux disease, achalasia, scleroderma, Barrett's esophagus and esophageal cancer. Learn the approach to treatment of bleeding disorders of the esophagus including ulcers and varices.

Stomach: learn the pathophysiology and pathology and treatment of diseases of the stomach. Learn the indications, usefulness and interpretation of tests used to diagnose and treat stomach diseases including peptic ulcer, H. pylori infection, non-ulcer dyspepsia, gastric malignancies, gastroparesis, nausea and vomiting, stress gastropathy and gastric varices.

Abdominal pain: learn mechanisms of abdominal pain, including visceral and referred pain. Describe and differentiate the etiology and presentation of acute abdominal pain, chronic abdominal pain and a surgical abdomen. Identify the presence of urgent and serious conditions requiring immediate referral to surgery. Describe the diagnostic approach to the evaluation of abdominal pain, including laboratory testing, radiological imaging and referral for urgent endoscopic evaluation.

GI bleeding: learn the indications and contraindications of endoscopy in patients with acute and chronic upper and lower GI bleeding. Understand the pathophysiology, use and interpretation of tests in patients with acute variceal bleeding, peptic ulcer bleeding, small intestinal angiodysplastic bleeding, diverticular bleeding and bleeding from an intestinal malignancy.

Small intestine: learn the pathology and pathophysiology with indications, interpretation, availability and outcome of tests used in diagnosis and treatment of the following disorders: maldigestion including lactose intolerance, malabsorption including celiac sprue and secretory diarrheas, inflammatory diseases including Crohn's disease, radiation injury, small bowel tumors, motility disorders including ileus and pseudo-obstruction, irritable bowel syndrome, and surgical issues including obstruction, perforation and ileus.

Pancreatic diseases: understand the pathology and pathophysiology of acute and chronic pancreatitis. Learn the diagnostic approach and severity staging of patients with acute pancreatitis. Learn to manage the patient with acute pancreatic necrosis including the use of antibiotics and enteral feeding. Learn the etiologies and diagnostic approach to chronic pancreatitis and management of pancreatic pain and malabsorption. Understand the approach to pancreatic cancer staging and management including use of ERCP and EUS.

Biliary diseases: learn the pathophysiology and approach to interpretation and usefulness of tests for acute and chronic cholecystitis, biliary colic, cholangitis and cholangiocarcinomas.

Large intestinal diseases: learn the pathology, pathophysiology and understand and interpret tests used in the diagnosis and treatment relevant to the following disorders: diverticulosis and its complications, inflammatory disorders including ulcerative colitis and indeterminate colitis, infections diseases including C. difficile, shigella and campylobacter, motility disorders including constipation, irritable bowel disease and pseudo-obstruction, malignancies including adenocarcinoma, lymphoma, carcinoid and FAP, rectal disorders including hemorrhoids and fissures.
Abnormal radiologic findings: barium studies, CT scan, ultrasound, MRI/MRCP, nuclear imaging, and interventional radiology will also be learned.

Procedural Skills and Endoscopy

The fellow will do approximately 40 procedures on this rotation, on both their inpatient consults and outpatients referred for procedures. Attendance at endoscopic sessions is expected and will enhance the fellow's procedural skills. Procedures will be performed four mornings per week and four afternoons per week with one of the VA attending.

Procedures will be both diagnostic and therapeutic with procedural skills including the following:

- Competence in the indications, contraindication to upper and lower endoscopy and management of complications.
- Competence in the approach to moderate and conscious sedation.
- Competence in the approach and management of anticoagulation, risk assessment and use of antibiotics in endoscopy.
- Competence in the approach to endoscopy in the elderly.
- Competence in upper endoscopy including removal of ingested foreign bodies, routine biopsy, treatment of upper GI bleeding with use of sclerotherapy, variceal banding ligation, BICAP cautery, hemo-clips, dilatation using bougie and balloon.
- Competence will also be obtained in diagnostic sigmoidoscopy and colonoscopy including polypectomy, submucosal resection, dilatation of colonic strictures, use of sclerotherapy and cautery for management of colonic bleeding.
- Competence in the use of Argon Plasma Coagulation (APC) and capsule endoscopy in the management of GI bleeding will also be acquired.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule), small group attending rounds and during clinic sessions. There is direct mentoring of the fellows by the GI consult attending and the endoscopy attending. During endoscopic procedures the fellows are always supervised by an endoscopy attending. Procedures are first demonstrated by the attending following which the fellow will perform the endoscopy by themselves under supervision of an attending who is in the endoscopy room. Fellows acquire the skills of a gastroenterology consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. Attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellows discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease

state. During attending rounds, teaching occurs directed at specific diseases and patients that fellows have evaluated on the consult service and include radiology viewing, and review of pathologic material.

Teaching will occur regularly for each patient evaluated and will be directed at the patient's specific disease.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient consultation. Consultation occurs in the emergency room, intensive care units, medical and surgical floors, endoscopy units and rehabilitation facility at the VA. Longitudinal follow up encounters occur on a daily basis until the consultation is no longer required for the medical management of the patient. Fellows also encounter patients in the endoscopy unit for routine outpatient procedures. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy.

Fellows will review their patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the GI pathologists. Additionally, pathology is regularly reviewed at the GI pathology conference on Wednesday afternoon at the VA and weekly multi-disciplinary conference which occurs on Friday afternoons.

Educational meetings and conferences at the VA hospital include the following:
GI/Surgery/radiology/pathology: conference on the management of patients with GI and surgical illnesses on Wednesday afternoon 4-5:00 pm.
Tumor board: multidisciplinary conference held twice a month on Friday morning 9:30-11:00 am.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing endoscopic procedures including informed consent, indications and contraindications, indications for screening procedures, appropriate administration of conscious sedation, recognize and manage complications. After six weeks, the fellow should have performed

approximately 40 procedures including upper endoscopy, PEG tube placement, colonoscopy, and flexible sigmoidoscopy. After satisfying preset numerical criteria, the fellow will be evaluated for competency. No formal evaluation of procedural competency will occur if this rotation is the first clinical rotation for the fellow. See also Procedures on page 97.

- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to gastroenterology.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of endoscopic findings.
- c. The fellow will generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the hospital computer system.
- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.

b. Yamata's Textbook of Gastroenterology

2. Journals (pertinent articles)

a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities

Gastroenterology

Clinical Gastroenterology and Hepatology

Hepatology

American Journal of Gastroenterology

Gastrointestinal Endoscopy

Journal of Clinical Gastroenterology

New England Journal of Medicine

Other Educational Resources

Medical library resources of the Yale University School of Medicine

Digestive Diseases library with textbooks in internal medicine, gastroenterology and hepatology

Uptodate

PubMed

Ovid

VA Connecticut Health Care System - Liver Consult Service Goals and Objectives

The educational purpose of the VA Liver rotation is to provide the fellow with an opportunity to evaluate and treat inpatients and outpatients with a wide spectrum, breadth and depth of hepatologic diseases from patients who are hospitalized and treated at the VA hospital. The mix of diseases and patient characteristics are as discussed above under the VA Connecticut Health Care System-General Information. Fellows are the initial contact person and will be paged for the consults. The consult service takes inpatient consult calls from 8:00 am until 5:00 pm, Monday-Friday. The on-call fellow answers consult pages from 5:00 p.m. until 8:00 am, Monday-Friday and 8:00 am until 8:00 am Saturday, Sunday and holidays.

During the six week rotation on this service the fellow will be called to evaluate and treat patients with disorders of the liver. There is one fellow on this service at all times who evaluates approximately 2 new consults on inpatients each week. Longitudinal follow-up of consult patients while they are still hospitalized will occur as is appropriate. In addition to the inpatient consults the fellows evaluate, they will also attend the VA liver clinic. The VA liver fellow will attend the Chronic Hepatitis C clinic once a week and

learn the approach and management of patients with chronic Hepatitis C. Clinic attendance is mandatory.

The mix of diseases evaluated and treated during the VA Hospital liver consult service include: acute and chronic liver diseases, e.g., alcoholic liver disease, viral hepatitis, autoimmune hepatitis, metabolic and inherited liver disease, PBC, PSC, and drug induced liver disease; abnormal liver tests; liver masses and other diagnostic imaging abnormalities; neoplastic liver disease; cirrhosis; and complications of acute and chronic liver diseases.

Examples of diseases and clinical problems the fellow will evaluate and treat include, but are not limited to the following:

Learn the pathology, pathophysiology and interpretation of liver tests and their relationship to diagnosis of liver diseases.

Learn the pathology and pathophysiology with indications and interpretation of diagnostic and therapeutic tests in management of acute liver failure.

Learn the pathology and pathophysiology with indications and interpretation of tests in the management of acute viral hepatitis including acute hepatitis A, B and C.

Learn the pathology and pathobiology with indications and interpretation of tests in the management of patients with cirrhosis and its complications.

Learn the management of a patient with cirrhosis and renal failure including hepato-renal failure.

Learn the appropriate work up and listing of a patient for liver transplant evaluation.

Learn the appropriate follow-up and management of a patient post-liver transplantation.

Learn the pre-operative and post-operative evaluation and management of a patient with chronic liver disease.

Learn the pathology, pathophysiology, work up and management of a patient with hepatocellular carcinoma.

Learn the pathology, pathophysiology, interpretation of liver tests and management of patients with cholestatic and metabolic liver diseases.

The fellow will closely interact with physicians from other services, including internal medicine specialties and subspecialties, surgery, ob-gyn, radiology, and pathology.

The fellow will do approximately 10 procedures on this rotation, including liver biopsies and paracenteses.

Acquisition of procedural skills will include the following:

Competency in liver biopsy including indications, contraindications and management of complications and interpretation of results.

Competency in diagnostic and therapeutic abdominal paracentesis, including indications, contraindications and management of complications and interpretation of results.

Competency in interpretation of a hepatic wedge pressure gradient.

Liver biopsies and paracentesis will be performed under the supervision of the VA Hospital attendings, Dr. Guadalupe Garcia-Tsao, Dr. Chuhan Chung, Dr. Joseph Lim.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule), small group attending rounds and teaching during clinics. There is direct mentoring of the fellows by VA liver attending physicians. Liver biopsies are always performed under supervision of a VA attending. Fellows acquire the skills of a hepatology consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. Inpatient attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellows discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients that fellows have evaluated on the consult service and includes radiology viewing, and review of pathologic material.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient and outpatient consultations. Consultation occurs in the emergency room, intensive care units, medical and surgical floors. Longitudinal follow up encounters occur on a daily basis until the consultation is no longer required for the medical management of the patient. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy.

Teaching will occur regularly after each patient evaluated and will be directed at the disease that particular patient has.

Fellows will review their patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system. Fellows should be present in radiology during hepatic wedge pressure measurements and learn the interpretation of these results.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the GI and liver pathologists. Additionally, liver pathology is reviewed regularly at the multi-disciplinary conference which occurs on Friday afternoons at Yale University.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.

- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.

- c. The fellow will be able to demonstrate proper knowledge and technique in performing procedures including informed consent, indications and contraindications, indications for procedures, appropriate administration of conscious sedation, recognize and manage complications. After six weeks, the fellow should have performed approximately 10 procedures including liver biopsies and paracenteses. See also Procedures on page 97.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to hepatology, including appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of normal and abnormal findings.
- c. The fellow will generate procedure reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.
- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.

b. Yamata's Textbook of Gastroenterology

2. Journals (pertinent articles)

a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities

Gastroenterology

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New England Journal of Medicine

Educational Resources

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Uptodate

PubMed

Ovid

VA Connecticut Health Care System - ERCP Consult Service Goals and Objectives

The educational purpose of the VA ERCP rotation is to provide the fellow with an opportunity to evaluate and treat inpatients with a wide spectrum, breadth and depth of gastrointestinal/biliary diseases from patients who are hospitalized and treated at the VA hospital, the mix of diseases and patient characteristics as discussed above under the VA Connecticut Health Care System-General Information.

The fellow is the initial contact person and will be paged for the consult. The consult service takes inpatient consult calls from 8:00 am until 5:00 pm, Monday-Friday. The on-call fellow for the GI service answers consult pages from 5:00 p.m. until 8:00 am, Monday-Friday and 8:00 am until 8:00 am Saturday, Sunday and holidays. When an ERCP consult is called after hours and on the weekends, the GI fellow on-call will do the initial evaluation and then notify the ERCP fellow on-call. The ERCP fellow on-call will be responsible for discussing the consult with the ERCP attending and for arranging the ERCP procedure that needs to be done.

During the three to six month rotation on this service the fellow will be called to evaluate and treat patients with disorders of the pancreato-biliary system. There is one fellow on this service at all times. There will be two (occasionally three) advanced ERCP fellows per year who rotate on the ERCP Consult Service; each fellow will do three to six months per year, generally in the third year of fellowship. The fellow will evaluate approximately 1-2 new ERCP consults each week. Longitudinal follow-up of consult patients while they are still hospitalized will occur as is appropriate.

The mix of diseases evaluated and treated during the VA Hospital ERCP Consult Service rotation include: acute and chronic biliary diseases, e.g., strictures and gallstone disease; acute and chronic pancreatitis; sphincter of Oddi dysfunction; and pancreatic and biliary neoplasms, both benign and malignant.

Examples of diseases and clinical problems the fellow will be called to evaluate include, but are not limited to the following:

Learn the indications, usefulness and interpretations of liver tests as they relate to biliary obstruction.

Learn the management of gallstone disease including biliary colic, acute cholecystitis, and ascending cholangitis.

Learn the approach to acute and chronic pancreatitis, including pancreatic pain, pancreatic strictures and pancreatic pseudocysts.

Learn the pathology and pathophysiology of sphincter of Oddi dysfunction.

Learn the pathology and management of biliary and pancreatic tumors including cholangiocarcinoma and pancreatic cancer.

Learn the approach to management of post-operative biliary complications.

Learn the approach to the management of biliary strictures.

Learn to interpret normal and abnormal radiographic findings.

The fellow will closely interact with physicians from other services, including other internal medicine specialties and subspecialties, surgery, radiology, and pathology. The fellow will be responsible for notifying and arranging radiology time and space, and anesthesia, as needed.

In addition to the inpatient consults, the ERCP fellow will attend the weekly VA GI clinic. Fellows will also attend the weekly VA liver clinic and the weekly VA HCRC/Hepatoma clinic. Additional outpatient clinic responsibilities may be assigned during some rotations. The remainder of time will be spent doing general endoscopy and ongoing research projects. Teaching will be directed at the patient specific problem or disease.

The fellow who chooses to learn to do ERCP procedures will do approximately 15 inpatient and outpatient ERCPs per three months and 30 ERCPs per six months, on this rotation with the VA Hospital ERCP attending Dr. Anil Nagar.

Procedures will be both diagnostic and therapeutic with procedural skills including the following:

Competency in moderate and conscious sedation.

Competency in the indications, contraindications, and management of complications and interpretation of diagnostic ERCP.

Competency in the indications, contraindications, and management and complications of biliary sphincterotomy

Competency in the indications, contraindications, and management and complications of pancreatic sphincterotomy.

Competency in the indications, contraindications, and management and complications of biliary strictures.

Competency in the indications, contraindications, and management of pancreatic strictures.

Competency in the indications, contraindications, and management of biliary and pancreatic calculi.

Competency in the indications, contraindications, and performance of biliary and pancreatic stent placement.

Competency in the management and complications of benign biliary disease.

Competency in advanced endoscopic procedures including pneumatic dilatation of post-op strictures, EMR, APC, and pseudocyst drainage.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule), small group attending rounds and teaching during clinics. There is direct mentoring of the fellows by the ERCP attending. All ERCP and advanced endoscopic procedures are performed under supervision of an attending in the endoscopy room. Fellows acquire the skills of a gastroenterology/ERCP consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. Attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellow discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients the fellow has evaluated on the consult service and includes radiology viewing, and review of pathologic material.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient and outpatient consultations. Consultation occurs in the emergency room, intensive care units, medical and surgical floors and in the endoscopy unit. Longitudinal follow up encounters occur on a daily basis until the consultation is no longer required for the medical management of the patient. Fellows are responsible for arriving early enough to round on ICU patients and seriously ill patients prior to attending other activities such as clinics and endoscopy.

The fellow will review the patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

The fellow will review the patients' biopsies and other pertinent pathologic material on a regular basis at least once per week, with the VA pathologists. Additionally, pathology is

regularly reviewed at the weekly multi-disciplinary conference on Wednesday afternoons at the VA Hospital and on Friday afternoons at Yale University.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a) The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing endoscopic procedures including informed consent, indications and contraindications, indications for screening procedures, appropriate administration of conscious sedation, recognize and manage complications. After performing 100 ERCPs, the fellow should be able to intubate the duct of interest at least 50% of the time. After the fellow has performed at least 200 ERCPs, he/she should be able to intubate the duct of interest 95% of the time, extract biliary stones, place stents as needed and perform dilations as needed. After performing 200 procedures, the fellow will be evaluated for competency. No formal evaluation of procedural competency will occur if this rotation is the first ERCP rotation for the fellow. See also Procedures on page 97 and the American Society for Gastrointestinal Endoscopy (ASGE) guidelines for determining competency.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to gastroenterology and ERCP. This includes appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.

- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of endoscopic findings.
- c. The fellow will generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding any self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.

- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology

2. Journals (pertinent articles)

- a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities.

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Educational Resources

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Digestive Diseases library with textbooks in internal medicine, gastroenterology and hepatology

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Hospital of St. Raphael - General Information

Hospital of St. Raphael (HSR) is a 500 bed, major community, teaching hospital where the fellows are exposed to a broad range of general gastroenterology and hepatology as seen by our community physicians. The patient mix reflects the New Haven County diverse community. Fellows rotate at HSR for three months at a time on two separate services.

HSR Consult Service Goals and Objectives

The educational purpose of the HSR rotation is to provide the fellow with an opportunity to evaluate and treat inpatients with a wide spectrum, breadth and depth of gastrointestinal and liver diseases from patients who are hospitalized and treated at HSR, the mix of diseases and patient characteristics as discussed above under Hospital of St. Raphael-General Information. Fellows are the initial contact person and will be paged for the consult. The consult service takes inpatient consult calls from 8:00 am until 5:00 pm, Monday-Friday. The on-call fellow answers consult pages from 5:00 p.m. until 8:00 am, Monday-Friday and 8:00 am until 8:00 am Saturday, Sunday and holidays.

There are two fellows on this service at all times and each fellow will evaluate approximately 15 new consult patients each week. Each fellow rotates with one of two groups for six weeks and then the fellows switch groups. Longitudinal follow-up of consult patients while they are still hospitalized will occur as is appropriate. ICU or other patients with urgent medical needs should be seen first in the morning prior to attending clinics or other responsibilities or signed out to the other fellow as appropriate.

During the three month rotation on this service the fellow will be called to evaluate and treat patients with disorders of the esophagus, stomach, small intestine, colon, pancreas, liver, and biliary system.

The mix of diseases seen during the HSR inpatient consult service include: diseases of the esophagus including dysphagia, esophageal dysmotility, GERD, Barrett's esophagus and esophageal cancer; diseases of the stomach including peptic ulcer diseases, upper GI bleeding from ulcers and varices, gastric outlet obstruction and gastroparesis, gastric polyps and malignancies; diseases of the biliary tract including acute cholecystitis, cholangitis, hepato-biliary neoplasms; diseases of the pancreas including acute and chronic pancreatitis, pancreatic neoplasms; colonic polyps and malignancies; other gastrointestinal neoplasms; inpatient diseases including diarrhea, GI bleeding in critical care patients, post-operative ileus, nausea and vomiting and post-operative intestinal obstruction; inflammatory disease including Crohn's disease and ulcerative colitis, acute diverticulitis and ischemic bowel; acute and chronic GI bleeding; acute and chronic abdominal pain; acute and chronic liver disease and the management of complications from these diseases.

Examples of diseases and clinical problems the fellow will be called to evaluate include, but are not limited to the following:

Esophagus: learn the pathophysiology of diseases of the esophagus and the ability to use and interpret diagnostic tests with relation to the following diseases including dysphagia, gastro-esophageal reflux disease, achalasia, scleroderma, Barrett's esophagus and esophageal cancer. Learn the approach to treatment of bleeding disorders of the esophagus including ulcers and varices.

Stomach: learn the pathophysiology and pathology and treatment of diseases of the stomach. Learn the indications, usefulness and interpretation of tests used to diagnose and treat stomach diseases including peptic ulcer, H. pylori infection, non-ulcer dyspepsia, gastric malignancies, gastroparesis, nausea and vomiting, stress gastropathy and gastric varices.

Abdominal pain: learn mechanisms of abdominal pain, including visceral and referred pain. Describe and differentiate the etiology and presentation of acute abdominal pain, chronic abdominal pain and a surgical abdomen. Identify the presence of urgent and serious conditions requiring immediate referral to surgery. Describe the diagnostic approach to the evaluation of abdominal pain, including laboratory testing, radiological imaging and referral for urgent endoscopic evaluation.

GI bleeding: learn the indications and contraindications of endoscopy in patients with acute and chronic upper and lower GI bleeding. Understand the pathophysiology, use and interpretation of tests in patients with acute variceal bleeding, peptic ulcer bleeding, small intestinal angiodysplastic bleeding, diverticular bleeding and bleeding from an intestinal malignancy.

Small intestine: learn the pathology and pathophysiology with indications, interpretation, availability and outcome of tests used in diagnosis and treatment of the following disorders: maldigestion including lactose intolerance, malabsorption including celiac sprue and secretory diarrheas, inflammatory diseases including Crohn's disease, radiation injury, small bowel tumors, motility disorders including ileus and pseudo-obstruction, irritable bowel syndrome, and surgical issues including obstruction, perforation and ileus.

Pancreatic diseases: understand the pathology and pathophysiology of acute and chronic pancreatitis. Learn the diagnostic approach and severity staging of patients with acute pancreatitis. Learn to manage the patient with acute pancreatic necrosis including the use of antibiotics and enteral feeding. Learn the etiologies and diagnostic approach to chronic pancreatitis and management of pancreatic pain and malabsorption. Understand the approach to pancreatic cancer staging and management including use of ERCP.

Biliary diseases: learn the pathophysiology and approach to interpretation and usefulness of tests for acute and chronic cholecystitis, biliary colic, cholangitis and cholangiocarcinomas.

Large intestinal diseases: learn the pathology, pathophysiology and understand and interpret tests used in the diagnosis and treatment relevant to the following disorders: diverticulosis and its complications, inflammatory disorders including ulcerative colitis and indeterminate colitis, infectious diseases including C. difficile, shigella and campylobacter, motility disorders including constipation, irritable bowel disease and

pseudo-obstruction, malignancies including adenocarcinoma, lymphoma and carcinoid and FAP, rectal disorders including hemorrhoids and fissures. Abnormal radiologic findings: barium studies, CT scan, ultrasound, MRI/MRCP, nuclear imaging, and interventional radiology.

The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

Procedural Skills and Endoscopy

The fellow will do approximately 80 procedures on this rotation, including upper endoscopies, PEG tube placement, colonoscopies, and flexible sigmoidoscopies. Procedures will be both diagnostic and therapeutic with procedural skills including the following:

- Competence in the indications, contraindication to upper and lower endoscopy and management of complications.
- Competence in the approach to moderate and conscious sedation.
- Competence in the approach and management of anticoagulation, risk assessment and use of antibiotics in endoscopy.
- Competence in the approach to endoscopy in the elderly.
- Competence in upper endoscopy including removal of ingested foreign bodies, routine biopsy, treatment of upper GI bleeding with use of sclerotherapy, variceal banding ligation, BICAP cautery, hemo-clips, dilatation using bougie and balloon, competence in diagnostic sigmoidoscopy and colonoscopy including polypectomy, submucosal resection, dilatation of colonic strictures and use of sclerotherapy and cautery for management of colonic bleeding.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule) and small group attending rounds. There is direct mentoring of the fellows by the GI consult attending and during endoscopy. During endoscopic procedures the fellows are always supervised by an endoscopy attending. Procedures are first demonstrated by the attending, following which the fellow will perform the endoscopy by themselves under supervision of an attending who is in the endoscopy room. Fellows acquire the skills of a gastroenterology consultant through direct patient care, self-directed learning, and through directed discussions with attendings on rounds. Attending rounds usually occur in the latter part of the afternoon and will include a discussion of all new consults and pertinent discussions on longitudinal follow-up patients. Attending rounds function as both work rounds as well as teaching rounds. The attending and fellows discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state. During attending rounds, teaching occurs directed at specific diseases and patients that fellows have evaluated on the consult service, radiology viewing, and review of pathologic material.

Clinical encounters include emergent, urgent and routine detailed and comprehensive inpatient consultation. Consultation occurs in the emergency room, intensive care units, medical, surgical, ob-gyn floors, and endoscopy unit. Longitudinal follow up encounters

occur on a daily basis until the consultation is no longer required for the medical management of the patient.

Teaching will occur regularly for each patient evaluated and will be directed at the disease which that particular patient has.

Fellows will review their patients' radiologic studies daily with an attending radiologist. Radiology studies are also available through the hospital computer system.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis at least once per week. Fellows will attend weekly multi-disciplinary conferences with the surgical service and will alternate presentation of cases at these meetings. Additionally, pathology is regularly reviewed at the weekly multi-disciplinary conference at Yale University which occurs on Friday afternoons.

At the end of this rotation fellows are expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing endoscopic procedures including informed consent, indications and contraindications, indications for screening procedures, appropriate administration of conscious sedation, recognize and manage complications. After three months, the fellow should have performed approximately 80 procedures including upper endoscopy, PEG tube placement, colonoscopy, and flexible sigmoidoscopy. After performing 80 procedures, the fellow should be intubating the esophagus at least 75% of the time and the duodenum at least 50% of the time. The fellow should be reaching the cecum at least 50% of the time. See also Procedures on page 97.
- d. The fellow is able to work within a team.
- e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to gastroenterology and hepatology. This includes appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.

- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.
- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of endoscopic findings.
- c. The fellow will generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.

- g. The fellow will be responsive to patient needs superceding self-interests.
 - h. The fellow will demonstrate accountability to patients, society and our profession.
6. Systems-Based Practice
- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
 - b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
 - c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.
 - d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
 - e. The fellow will work effectively within the health care system.
 - f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
 - g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
 - h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
 - i. The fellow will participate in identifying system errors and implementing potential system solutions.

Evaluations: on a monthly basis the following competencies will be evaluated as discussed above including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation will be discussed with the fellow so as to provide appropriate feedback and identify areas for improvement. Evaluations will also be provided in a written format (e-value online system).

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology
- c. Textbook of Hepatology: From Basic Science to Clinical Practice. Eds Rodes, Benhamou, Blei, Reichen, Rizzetto, 3rd edition, 2007. Blackwell, MA

2. Journals (pertinent articles)

- a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities.

Gastroenterology
Clinical Gastroenterology and Hepatology
Hepatology
American Journal of Gastroenterology
Gastrointestinal Endoscopy
Journal of Clinical Gastroenterology
New England Journal of Medicine

Educational Resources

Medical library resources of the Yale University School of Medicine
Digestive Diseases library with textbooks in internal medicine, gastroenterology and
hepatology
Uptodate
PubMed
Ovid

Clinical Elective Goals and Objectives

Fellows will participate in a three month Clinical Elective, usually during their second or third year of training. The educational purpose of the Clinical Elective is to provide fellows with an opportunity to receive dedicated ambulatory, outpatient training in digestive diseases and to hone their skills in capsule endoscopy, motility and nutrition. Additionally, the fellow will have the opportunity to receive training in the allied subspecialties of radiology and pediatrics. The fellowship program leadership recognizes that these are major independent subspecialties of their own, and have therefore set as the goal for our fellows the acquisition of basic knowledge and clinical skills that would be essential for a practicing gastroenterologist. The fellow should plan to meet with the program director, Anil Nagar 1 to 2 months prior to the beginning of this rotation in order to discuss their schedule for this rotation.

Ambulatory, Outpatient Clinics – Yale University, 40 Temple Street Goals and Objectives

In order to enhance and complement the clinical training the fellow receives during his or her inpatient consult rotations and continuity clinic, during the Clinical Elective the fellow will participate in the outpatient clinics at Yale University, 40 Temple Street. The patient population and disease mix is ethnically and socio-economically diverse and represents the diverse community of New Haven and surrounding communities.

The goals and objectives for the fellow in the outpatient clinic training experience will be for the fellow to initially evaluate the patient, review the available data, formulate a diagnostic and therapeutic plan, and then present the patient to the responsible attending who will be present in clinic. The attending will be responsible for evaluating the patient, ensuring accuracy of the available data and appropriateness of the diagnostic and therapeutic plan and will then write a clinic note to accompany the fellow's note.

Examples of diseases the fellow will evaluate include, but are not limited to the following: GI bleeding- both upper and lower GI bleeding, dysphagia, odonophagia, chest pain, GERD, ulcer disease, abdominal pain, acute and chronic pancreatitis, IBD, IBS, evaluation for benign and malignant neoplasms, malnutrition and malabsorption, diarrhea, constipation, nausea, vomiting, inability to eat, colitis, chronic and acute liver disease, and abnormal laboratory, radiology and pathology findings.

The fellow will closely interact with physicians from other services as needed, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule on page 104) and small group attending discussions during clinic. Fellows acquire the skills of a gastroenterology and hepatology consultant through direct patient care, self-directed learning, and through directed discussions with attendings in clinic.

Fellows will review their patients' radiologic studies through the hospital computer system and with an attending radiologist when necessary.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis with the GI and liver pathologists. Additionally, pathology is regularly reviewed at the weekly multi-disciplinary conference that occurs on Friday afternoons.

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology

2. Journals (pertinent articles)

- a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities.

Gastroenterology

Clinical Gastroenterology and Hepatology

Hepatology

American Journal of Gastroenterology

Gastrointestinal Endoscopy

Journal of Clinical Gastroenterology

New England Journal of Medicine

Educational Resources

Medical library resources of the Yale University School of Medicine

Digestive Diseases library with textbooks in internal medicine, gastroenterology and hepatology

Uptodate

PubMed

Ovid

Clinical Nutrition Goals and Objectives

After 12 months of training the fellow should have experience with assessing and planning the nutritional needs of patients. Didactic lectures on enteral and parenteral nutrition, malnutrition and other aspects of clinical nutrition are given throughout the three year clinical training program. To enhance this knowledge and skill, the fellow will meet in several sessions during the three month rotation with the nutrition specialist, Dr. Martin Floch. Individual inpatient and outpatient cases from Yale-New Haven Hospital and the ambulatory clinics will be discussed, including the presentation of disease, evaluation and assessment for nutritional needs, and treatment options. Enteral and

parenteral nutrition, obesity, assessment of nutritional needs, vitamins, minerals, and micronutrients, and the needs of patients with specific diseases will be discussed.

The fellow will discuss approximately five patients during this elective.

The teaching methods on this rotation will include discussions with attendings and weekly didactic lectures (see Conference schedule). Fellows acquire the advanced consultant skills on this rotation through direct discussions and self-directed learning. The attending and fellow will discuss each patient case, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state.

The goals and objectives for medical knowledge acquisition during the clinical nutrition training include the following:

The fellow will be cognisant of and understand

1. The nutritional assessment of the patient
2. The role of micronutrients
3. Nutritional planning for the individual patient
4. Enteral access and commonly available enteral preparations
5. Indications and contraindications of peripheral parenteral nutrition
6. Total parenteral nutrition: indications, formulations, and complications
7. Vitamins, minerals and fiber
8. The special nutritional needs of the patient with inflammatory bowel disease.
9. Overfeeding syndrome and secondary organ failure
10. Obesity
11. The trainee will gain experience with the short-term needs of the hospitalized acutely ill patient as well as the chronically ill patient who needs long-term nutritional support.

Reading list

Alpers, Stenson and Bier, Manual of Nutrition Therapy, Lippincott

Rombeau and Caldwell, Enteral and Tube Feeding, Saunders

Rombeau and Caldwell, Parenteral Nutrition, Saunders

Schils, et al, Modern Nutrition, Lippincott

Payne-James, Grimble and Silk, Artificial Nutrition Support, Greenwich

Pediatric Gastroenterology Goals and Objectives

After 12 months of clinical training the fellows should be familiar with the clinical presentations, diagnosis and general aspects of therapy in the pediatric population. To enhance the fellow's experience with pediatric GI patients, the fellow will participate in the evaluation of pediatric patients in the clinics at Yale University. The patient population and disease mix is ethnically and socio-economically diverse and represents the diverse community of New Haven and surrounding communities. Direct supervision will be by the Yale University pediatric GI faculty, Dr. Dinesh Pashankar. The fellow will initially evaluate the pediatric patient and then present the patient to the pediatric GI attending. The fellow will formulate a diagnosis and management plan under the direct supervision of the attending.

The fellow will evaluate and be involved in the treatment plan of pediatric patients, ages 10 to 18 years, with GI or liver disease who are being evaluated in the GI pediatric clinic, under the direct supervision of a Yale University faculty GI pediatrician. The fellow will closely interact with physicians from other services, including other pediatric specialists and subspecialists, surgery, radiology, and pathology. The fellow will evaluate approximately five pediatric patients in the GI Pediatric clinic.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule) and discussion with attendings in clinic. Fellows acquire the advanced skills on this rotation through direct patient care, self-directed learning, and through directed discussions with attendings in clinic. The attending and fellow will discuss each patient, review pertinent data, and discuss the literature as it pertains to the patient and/or disease state.

Fellows will review their patients' radiologic studies through the hospital computer system and with an attending radiologist when necessary.

The goals and objectives for medical knowledge acquisition during the pediatric clinical training are the following:

The fellow will be cognizant of and understand

1. Familiarity with the special features of gastrointestinal diseases afflicting adolescents, especially those diseases that are also common to adults such as inflammatory bowel disease and celiac sprue.
2. Differences in the approach to investigating common symptoms such as diarrhea, constipation, abdominal pain and vomiting in children, especially older children, compared to the investigation of the same symptoms in adults.
3. History taking in the adolescent patient.
4. Common liver diseases in children and the evaluation of jaundice in the pediatric patient.
5. Interpretation of pathologic specimens
 - a. Skills are mainly acquired during the gastroenterology and hepatology didactic conferences and extended during the pediatric gastroenterology clinical training and include evaluating slides of gastrointestinal and liver biopsies with the GI pediatrician and pathologist.
6. Diagnostic imaging - the goal is to become familiar with the interpretation of imaging studies in children.
7. Interpersonal relations, professionalism, and ethical conduct
 - a. To become sensitized to the emotional needs of the adolescent patient
 - b. Respecting confidentiality of the adolescent patient
 - c. The indications for seeking help from a pediatric psychiatrist
 - d. The legal role the parent or guardian has in the care of the pediatric patient and obtaining informed consent for procedures

Reading list

Hyams and Wyllie's Pediatric Gastrointestinal Disease: Pathophysiology/Diagnosis and Management

Walker and Durie's Pediatric Gastrointestinal Disease: Pathophysiology/Diagnosis and Management
Suchy's Liver Disease in Children

Gastrointestinal and Liver Diagnostic Imaging Goals and Objectives

After 12 months of training, the fellow should be familiar with the use of and interpretation of radiologic tests for gastrointestinal and hepatic diseases. This should be obtained through direct patient care as well as through attendance at didactic lectures and case conference. To supplement and enhance this clinical knowledge, the fellow will observe and participate in GI radiology procedures one to one-half day per week at Yale-New Haven Hospital during this three month rotation. The patient population and disease mix is ethnically and socio-economically diverse and represents the diverse community of New Haven and surrounding communities. Direct supervision will be provided by a Yale University faculty member, Dr. Gary Israel, who specializes in GI radiology.

The fellow will participate in performing and interpreting radiologic tests as they pertain to the GI tract and liver, including plain x-rays, barium studies, fluoroscopy, CT scans including virtual colonography, ultrasound, magnetic resonance imaging (MRI), angiography and other interventional radiology studies, and nuclear imaging studies.

The teaching methods on this rotation will include interpretation and discussion with attendings in radiology. Fellows acquire the advanced skills on this rotation through self-directed learning, and interpretation of studies and directed discussions with attendings. The attending and fellow will discuss each patient, review pertinent radiologic studies and discuss the literature as it pertains to the patient and/or disease state.

The goals and objectives for medical knowledge acquisition during the diagnostic imaging clinical training are the following:

The fellow will be familiar with and understand

1. The indications and limitations of plain X-rays of the abdomen, barium contrast studies, abdominal ultrasonograms, computed tomograms, magnetic resonance imaging, angiography, gastric emptying studies and other nuclear medicine scans.
2. The interpretation of plain X-rays of the abdomen and upper and lower barium contrast studies, recognize common disease processes such as ulcers and neoplasia, and identify findings indicative of gastrointestinal emergencies such as free air in the peritoneal cavity.
3. To be able in most instances to recognize commonly seen conditions such as gallstones, intrahepatic biliary tract dilatation and liver and abdominal abscesses on abdominal ultrasonography.
4. Attain moderate expertise recognizing commonly seen lesions on abdominal and pelvic computed tomography, such as pancreatic tumors, pancreatic inflammation and its sequelae, in addition to those conditions listed above for ultrasonography.
5. Become proficient in interpreting cholangiograms and pancreatograms and be able to recognize stones, strictures, neoplasms, and the signs of chronic pancreatitis.
6. To have some experience with images generated by ultrasonography, including endoscopic ultrasound (EUS).

7. The limitations for screening and interpretation of CT colonography for colon cancer.

Reading list

1. Eisenberg and Dennis's Comprehensive Radiographic Pathology
2. Haaga and Alfidi's CT text
3. Moss's CT text

Gastrointestinal Motility and Capsule Endoscopy Goals and Objectives

Gastrointestinal Motility

After 12 months of training, the fellow should be familiar with the use of and interpretation of motility tests for gastrointestinal diseases. This should be obtained through direct patient care as well as through attendance at didactic lectures and case conference. To supplement and enhance this clinical knowledge, the fellow will observe and participate in clinic and GI motility procedures at Yale University, 40 Temple Street, during this three month rotation. The fellow should attend clinic 1-2 half-days per week with 2 half day sessions per week of observing manometry procedures (esophageal, pH, smartpill, anorectal/biofeedback) and will spend ½ day per week reading studies with Dr. Sheth. The patient population and disease mix is ethnically and socio-economically diverse and represents the diverse community of New Haven and surrounding communities. Direct supervision will be provided by Yale University faculty who specialize in GI motility, Drs. Henry Binder and Anish Sheth. The fellow will observe and participate in the placement of (under the direct supervision of the GI motility nurse), and interpretation of 24-hour pH probes and motility tests as they pertain to the GI tract, including esophageal motility and ano-rectal manometry.

The teaching methods on this rotation will include interpretation of findings and discussion with the motility attendings. Fellows acquire the advanced skills on this rotation through self-directed learning and interpretation of studies and directed discussions with the attending and motility nurse. The attending and fellow will discuss each patient, review pertinent motility studies and 24-hour pH probes, and discuss the literature as it pertains to the patient and/or disease state.

The fellow will perform and interpret approximately 20 esophageal motility and 24-hour pH probes and 5 ano-rectal manometry examinations on new patients during this elective. In addition, the fellow will be expected to review prior normal and abnormal motility tracings available in the motility lab.

The goals and objectives for medical knowledge acquisition during the motility clinical training are the following:

The fellow will be cognizant of and understand

1. A thorough knowledge of the clinical presentations of commonly seen motility disorders of the gastrointestinal tract, in particular those of the esophagus and anal sphincters, and their characteristic pressure tracings.
2. The ability to manage common motor disorders of the gastrointestinal tract and be familiar with the role of biofeedback in the treatment of disorders of the anal sphincter.
3. Evaluation of motility tracings

- a. Gain familiarity with the technical aspects of motility studies.
- b. Recognize characteristic manometric findings in patients with common esophageal disorders such as achalasia and esophageal spasm. Recognize normal motility tracings.
- c. Recognize characteristic manometric findings in ano-rectal manometry in diseases such as short-segment Hirschsprung's disease, colonic atony, and irritable bowel syndrome.

Reading list

Castell's Esophageal Motility Testing

Capsule Endoscopy

After 12 months of training, the fellow should be familiar with the use of and interpretation of capsule endoscopy for gastrointestinal diseases. This should be obtained through direct patient care as well as through attendance at didactic lectures and case conference. To supplement and enhance this clinical knowledge, the fellow will observe the placement of and interpret capsule endoscopies one-half day per week at Yale University, 40 Temple Street and will review capsule studies from the West Haven VA teaching file during this three month rotation. The patient population and disease mix is ethnically and socio-economically diverse and represents the diverse community of New Haven and surrounding communities. Direct supervision will be provided by Yale University faculty who specialize in capsule endoscopy, Dr. Deborah Proctor, Dr. Martin Floch and Dr. Avlin Imaeda. The fellow will observe and participate in the placement of (under the direct supervision of the GI nurse) the capsule endoscopy and recording equipment.

The teaching methods on this rotation will include interpretation of findings and discussion with the attending. Fellows acquire the advanced skills on this rotation through self-directed learning, and interpretation of studies and directed discussions with the attending and nurse. The attending and fellow will discuss each patient, review the computerized video of the capsule endoscopy and discuss the literature as it pertains to the patient and/or disease state.

The fellow will interpret approximately 10 capsule endoscopy examinations on patients from Temple St or the West Haven VA during this elective and will review approximately 15-20 capsule endoscopy examinations from the teaching file at the West Haven VA.

The goals and objectives for medical knowledge acquisition during the capsule endoscopy clinical training are the following:

The fellow will be cognisant of and understand the following:

1. The indications and contraindications for capsule endoscopy
2. The technical aspects of capsule endoscopy and lead placement
3. Interpretation of esophageal, gastric, small intestinal and colonic images during capsule endoscopy
4. Make appropriate recommendations to the referring physician, based on capsule endoscopy findings.

Evaluation for the Clinical Elective

The fellow will be evaluated mid-way through, and at the end of the Clinical Elective, and will be expected to exhibit competency in the following areas:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the visit and/or consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow will be able to demonstrate proper knowledge and technique in performing 24-hour pH probe and motility studies including informed consent, indications and contraindications, and recognize and manage complications. See Procedures on page 97.
- d. The fellow will be able to demonstrate proper knowledge and technique in performing capsule endoscopy. See Procedures on page 97.
- e. The fellow is able to work within a team.
- f. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

- a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, epidemiological and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4, and apply this knowledge to gastroenterology as discussed in each section above under goals and objectives. This includes appropriate interpretation of radiology and pathologic findings.
- b. The fellow is scholarly and committed to a life of learning.
- c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.
- d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

- a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.
- b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.

- c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.
- d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.
- e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise
- f. The fellow will set learning and improvement goals.

4. Interpersonal and Communication Skills

- a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.
- b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of endoscopic findings.
- c. The fellow will generate endoscopic reports that are grammatically correct, accurate in content, and concise.
- d. The fellow will write legible and effective chart notes.
- e. The fellow will demonstrate the ability to teach effectively.
- f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, attendance at clinics, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system of the GI procedure center and the hospital computer system.

- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.

Continuity Clinic and Outpatient Ambulatory Clinics Goals and Objectives

The educational purpose of the continuity ambulatory clinics is to provide the fellow with an opportunity to evaluate and treat outpatients with a wide spectrum, breadth and depth of gastrointestinal and liver diseases from patients who are consulted and treated in the outpatient clinics. Fellows will be exposed to and treat outpatients from diverse ethnic, educational, socioeconomic and cultural backgrounds with a wide range of clinical problems so that at the end of the fellowship, the fellow will have achieved appropriate medical knowledge in the field of digestive diseases, as well as to have developed the interpersonal and communication skills and professional attitudes necessary to function as highly competent subspecialists in this field. The fellow is the primary digestive diseases consultant under the direct supervision of the faculty. By following their own panel of patients in a longitudinal fashion, the fellow will be able to gain expertise in disease progression, management, and response to therapy of different gastrointestinal and liver diseases.

Outpatient clinics exist in each of the three hospitals. The patient population is representative of that which is evaluated and managed at each location as discussed above in the General Information for each location. Additionally, separate GI and liver clinics exist at Yale-New Haven Medical Center and the Veterans' Administration Connecticut Health Care System Hospital (VA CT HCS).

Each fellow spends one ½ day per week for the duration of their three year fellowship for their longitudinal, continuity of care clinic at one of three locations: 1. Yale-New Haven Medical Center; 2. VA CT Health Care System; and 3. Hospital of St. Raphael. Each fellow will spend at least six consecutive months at any given location and no more than 12 months of their total three year continuity clinic experience at the VA CT Health Care System. In their continuity of care clinic, fellows see 4-8 patients per week under the direct supervision of the Digestive Disease faculty.

In addition to their own weekly continuity of care clinic, fellows attend the VA liver clinic while on VA rotations, YNHH liver consult or Klatskin rotation, Yale ERCP rounder rotation and for 3 consecutive months while on the research training grant. While on the liver and transplant services at Y-NHH, the fellow also attends the Yale liver attendings' clinics and transplant clinics as outlined above. While at the VA CT HCS hospital on the GI and liver services, participation in outpatient clinics occurs. While on the ERCP service or the liver transplant service, the fellow will also spend time in clinics that evaluate and treat patients with these specialized problems. Clinical fellows will also spend time on an outpatient clinic rotation. This rotation will consist of several outpatient clinics in a variety of areas including luminal GI and hepatology and will occur at Yale-New Haven Medical Center and VA CT HCS. The schedule for each fellow will be designed depending on available clinics, the fellow's own continuity clinic and fellow's interests.

The goals and objectives for the fellow in the outpatient clinic training experience will be for the fellow to initially evaluate the patient, review the available data, formulate a diagnostic and therapeutic plan, and then present the patient to the responsible attending

who will be present in clinic. The attending will be responsible for evaluating the patient, ensuring accuracy of the available data and appropriateness of the diagnostic and therapeutic plan and will then write a clinic note to accompany the fellow's note.

Examples of diseases the fellow will be called to evaluate include, but are not limited to the following: GI bleeding- both upper and lower GI bleeding, dysphagia, odonophagia, chest pain, GERD, ulcer disease, abdominal pain, acute and chronic pancreatitis, IBD, IBS, evaluation for benign and malignant neoplasms, malnutrition and malabsorption, diarrhea, constipation, nausea, vomiting, inability to eat, colitis, chronic and acute liver diseases including viral hepatitis, alcoholic liver disease, autoimmune liver disease, metabolic, infiltrative and drug-related liver disease, and abnormal laboratory, radiology and pathology findings. The fellow will closely interact with physicians from other services, including other internal medicine specialists and subspecialists, surgery, ob-gyn, radiology, and pathology.

The teaching methods on this rotation will include direct patient care, weekly didactic lectures (see Conference schedule on page 104) and small group attending discussions during clinic. Fellows acquire the skills of a gastroenterology and hepatology consultant through direct patient care, self-directed learning, and through directed discussions with attendings in clinic.

Fellows will review their patients' radiologic studies through the hospital computer system and with an attending radiologist when necessary.

Fellows will review their patients' biopsies and other pertinent pathologic material on a regular basis with the GI and liver pathologists at the respective institution. Additionally, pathology is regularly reviewed at the weekly multi-disciplinary conference which occurs on Friday afternoons.

The fellow will be evaluated every three months as follows and is expected to exhibit competency in the following areas at the end of the three year fellowship training:

1. Patient Care

- a. The fellow is able to perform an accurate and complete history and physical examination and review all available data within an appropriate time frame, depending upon the urgency of the consult. The fellow is able to formulate a diagnostic and therapeutic decision based on available evidence, sound judgment, and patient preference. The fellow is able to develop and implement management plans and modify plans as new information becomes available. The fellow is able to perform discharge planning including arranging follow up outpatient clinic visits and procedures.
- b. The fellow will have a caring and respectful attitude and behavior towards patients and families.
- c. The fellow knows the indications and contraindications for procedures. The fellows knows appropriate screening methods, including screening for malignancies, e.g., colon cancer, and pre-malignant states, e.g., Barrett's esophagus
- d. The fellow is able to work within a team.

e. The fellow will practice health promotion and disease prevention.

2. Medical Knowledge

a. The fellow is able to demonstrate critical thinking and knowledge of established and evolving biomedical, clinical, and social sciences as discussed under General Medical Knowledge in Digestive Diseases on page 4 and apply this knowledge to gastroenterology, hepatology and nutrition. This includes appropriate interpretation of radiology and pathologic findings.

b. The fellow is scholarly and committed to a life of learning.

c. The fellow is able to demonstrate evidence-based decision making and the scientific method of problem solving.

d. The fellow demonstrates an attitude of caring that is derived from humanistic and professional values.

3. Practice-Based Learning and Improvement

a. The fellow systematically analyzes and evaluates his/her own patient care practices using quality improvement methods and implements change with the goal of practice improvement.

b. The fellow will accept and respond to constructive and formative feedback, incorporate the feedback into improving activities, behavior, or attribute.

c. The fellow will utilize scientific literature and information technology to improve patient care and facilitate life-long learning, e.g., perform medline searches on specific topics related to patient care.

d. The fellow will facilitate, and participate in, the education of others, including patients, families, students, residents and other health care professionals.

e. The fellow will recognize strengths, deficiencies, and limits in his/her own knowledge and expertise

f. The fellow will set learning and improvement goals.

g. The fellow assesses patient compliance to ambulatory regimens and is able to accordingly modify prescribing practices.

4. Interpersonal and Communication Skills

a. The fellow will listen well, show sensitivity to, and communicate effectively with patients and their families across a broad range of socioeconomic and cultural backgrounds.

b. The fellow will provide effective and professional consultation to other physicians and members of the health care team. The fellow will notify members of the health care team, the patient, and/or family members of normal and abnormal findings.

c. The fellow will generate reports that are grammatically correct, accurate in content, and concise.

d. The fellow will write legible and effective consultation notes.

e. The fellow will demonstrate the ability to teach effectively.

f. The fellow will work effectively as a member and leader of the health care team.

5. Professionalism

- a. The fellow is respectful and appropriate to housestaff, medical students, and other members of the health care team.
- b. The fellow will answer consults in a timely fashion.
- c. The fellow will demonstrate respect, integrity, and compassion toward patients, families and all other people.
- d. The fellow will be sensitive to cultural, age, gender, religious, sexual preference, and disability differences and issues, including respect for patient privacy and autonomy.
- e. The fellow is ethical and honest.
- f. The fellow will demonstrate a responsible work ethic with regard to acceptance of responsibility, initiative, attendance at conferences, attendance at clinics, completion of work assignments, personal demeanor, and modification of behavior in response to criticism.
- g. The fellow will be responsive to patient needs superceding self-interests.
- h. The fellow will demonstrate accountability to patients, society and our profession.

6. Systems-Based Practice

- a. The fellow applies evidence-based medicine and utilizes cost-effective health care principles to provide optimal patient care.
- b. The fellow is an advocate for quality patient care and for his or her patient within the health care system.
- c. The fellow will be able to use the data access system and the hospital computer system.
- d. The fellow will be able to make appropriate suggestions for referrals to other subspecialties.
- e. The fellow will work effectively within the health care system.
- f. The fellow will incorporate considerations of cost awareness and risk-benefit analysis into their patient care.
- g. The fellow will coordinate patient care within the health care system relevant to digestive diseases. The fellow is able to effectively use community and clinic resources for successful patient care.
- h. The fellow will work in multi-disciplinary teams to enhance patient safety and to improve patient care quality.
- i. The fellow will participate in identifying system errors and implementing potential system solutions.
- j. The fellow is able to collaborate with payers to ensure that patients receive appropriate care.

Reading List

1. Textbooks

- a. Sleisenger and Fordtran textbook: Eds. Feldman, Friedman, and Sleisenger: Sleisenger & Fordtran's Gastrointestinal and Liver Disease, 8th edition, 2006. Saunders, Philadelphia.
- b. Yamata's Textbook of Gastroenterology
- c. Textbook of Hepatology: From Basic Science to Clinical Practice. Eds Rodes, Benhamou, Blei, Reichen, Rizzetto, 3rd edition, 2007. Blackwell, MA

2. Journals (pertinent articles)

a. The fellow is encouraged to join one of the national organizations, e.g., AGA, ASGE, ACG, and/or AASLD in order to receive a monthly journal and attend national conferences. Most organizations either waive the membership fee or require a minimal fee for trainees to join. The fellow may request payment for this membership fee from the educational fund allotted to each fellow for educational activities

Gastroenterology

Clinical Gastroenterology and Hepatology

Hepatology

American Journal of Gastroenterology

Gastrointestinal Endoscopy

Journal of Clinical Gastroenterology

New England Journal of Medicine

Educational Resources

Medical library resources of the Yale University School of Medicine

Digestive Diseases library with textbooks in internal medicine, gastroenterology and hepatology

Uptodate

PubMed

Ovid

Procedure Goals and Objectives

The educational purpose of performing procedures is designed to enable the fellow to become skilled in the indications, contraindications, administration of moderate and conscious sedation, complications and limitations of all routine diagnostic and therapeutic GI and liver procedures, including, but not limited to the following: upper endoscopies; colonoscopies; flexible sigmoidoscopies; proctoscopies; liver biopsies; diagnostic and therapeutic paracentesis; esophageal dilatation procedures; percutaneous endoscopic gastrostomy tube placement; liver and mucosal biopsies; GI motility studies and 24-hour pH probe testing; banding, cautery, injection and sclerotherapy; capsule endoscopy; gastric, pancreatic and biliary secretory tests; and enteral and parenteral alimentation.

Fellows will participate in inpatient and outpatient GI procedures and liver biopsies during their rotations at each of the three hospitals and during the Clinical Elective. The patient mix and characteristics are representative of that mentioned above under each specific location. Digestive Disease faculty directly supervise all procedures. All technical procedures are documented by attending physicians' signatures and each trainee is required to maintain a procedure log including the patient's name, unit number, indications, procedure, results, complications and name of the attending. Careful record keeping is essential both for the fellowship program as well as for documentation of completion of the minimum number of procedures as recommended by the American Society for Gastrointestinal Endoscopy (ASGE) to receive endoscopy privileges after fellowship training.

The teaching methods for procedural training include use of the simulator and direct one-on-one fellow/faculty directed learning at the bedside for each procedure. There are ASGE teaching tapes available for review and the fellows are encouraged to review these at different times during their training. Additionally, attendance at one of the endoscopy courses offered by the GI societies, e.g., ASGE Clinical Skills Workshop, is encouraged.

The GI procedure experience in this program is designed to at least meet (and usually exceeds) the minimum requirements established by the ASGE guidelines and enumerated in the program requirements in the Graduate Medical Education Directory and the ACGME Program Requirements for Residency Education in Gastroenterology. These include appropriate administration of moderate and conscious sedation, a minimum of 130 esophagogastroduodenoscopies (EGD), 20 esophageal dilations, 30 flexible sigmoidoscopies, 140 colonoscopies and 30 supervised polypectomies, 20 percutaneous liver biopsies, 15 percutaneous endoscopic gastrostomy (PEG) tube placements, experience with biopsy of esophagus, stomach, small bowel and colonic mucosa, enteral intubation and bougienage (including naso-gastric and oro-gastric tube placement), 15 GI motility studies and 24-hour pH monitoring, 25 non-variceal GI bleeders (both upper and lower endoscopies) including 10 active bleeders, and 20 cases of variceal hemostasis of which at least 5 are active bleeders, 20 capsule endoscopy tests. Fellows are responsible for arranging regular endoscopy time during periods of training grant research in order to maintain their skills and achieve adequate numbers of examinations. It is the fellow's responsibility to maintain a current and complete record of all procedures and to provide

the fellowship program director with up to date copies every six months. These records must be co-signed by the attending physician.

The evaluation process for procedures is incorporated into the evaluation form that is written by the faculty every four weeks. Additionally, procedure specific competency-based forms are used for upper endoscopy and colonoscopy. (See Addendum 1.) In order to achieve procedural proficiency, the fellow must demonstrate that he/she has performed the minimum number of procedures AND has met the procedure-specific objective performance criteria for competency as set forth by the clinical faculty.

The goals and objectives for procedural training are for the fellow to acquire the cognitive and motor skills to perform endoscopy of the upper and lower gastrointestinal tract and liver biopsies.

The knowledge that should be gained includes, but is not limited to the following:

1. Appropriateness of procedures

- a. The trainee should understand the indications for endoscopic procedures and liver biopsies and be able to estimate the risks and benefits of interventions performed for diagnostic and therapeutic reasons. Knowledge of co-morbid factors that increase the risk of a procedure should be demonstrated.
- b. The fellow must understand screening and surveillance as they apply to different disease states.

2. Obtaining informed consent

The trainee should communicate the risks and benefits and alternatives of a procedure in a manner that is understood by the patient and address questions raised by the patient. In situations where the patient cannot give informed consent, the trainee should obtain consent from appropriate sources. Elective procedures will not be performed without valid consent.

3. Anesthesia and introducing and manipulating the instrument

- a. Know the pharmacology of medications used for moderate and conscious sedation, contraindications for their use, side effects, and the treatment of side effects.
- b. Develop the skills to make the patient comfortable during an examination, follow the degree of sedation, and recognize and treat complications.
- c. Master manipulation of the endoscope:
 - i. EGD and colonoscopy: by the end of the first year, the endoscopic instrument should enter the proximal small bowel during an upper endoscopy in 95% of cases and at the end of the training, 99% of cases. Likewise, by the end of the first year, the cecum should be reached during a colonoscopy in 90% of cases and at the end of training, 95% of cases, without the direct assistance of the attending physician. (See Addendum 1.)
 - ii. ERCP: by the end of ERCP training, the fellow should be entering the duct of interest 90% of the time, be able to extract stones, perform a sphincterotomy, and insert biliary and pancreatic stents. (See Addendum 1.)

4. Recognize pathology

The trainee should become familiar with the endoscopic appearance of inflammatory, vascular and neoplastic processes and know the characteristics that help to separate benign from malignant disease. The findings suggesting that varices or ulcers have recently bled and are at risk to rebleed should be understood. By the end of the first year, the trainee should be able to identify and describe abnormalities with 95% concordance with the attending and by the end of the training, the concordance should be 99%.

5. Facility with specific endoscopic techniques

- a. Biopsies: knowledge of the site and number of biopsies required to make pathologic diagnosis and ability to manipulate the biopsy forceps should be demonstrated.
- b. Polypectomy: The trainee should be proficient in removing polyps from the colon both with a snare polypectomy as well as with cold and hot biopsy forceps.
- c. Treating bleeding: The trainee should demonstrate skill in treating variceal hemorrhage using banding or sclerosis and in treating other bleeding lesions of the upper and lower gastrointestinal tract using heater probe, electrocautery, APC, clips, and injection with vasoconstrictors or sclerosing agents.
- d. Placement of nasogastric feeding tubes
- e. Percutaneous endoscopic gastrostomy: The trainee must understand the indications/contraindications and complications of the procedure and be able to perform all aspects of the procedure.

6. Capsule endoscopy: Clinical fellows will pursue this training during their 3 month clinical elective. Research fellows must arrange a meeting with Dr. Imaeda or Dr. Floch and develop a program of independent study using available teaching files and through further discussion of cases with Dr. Imaeda or Dr. Floch.

- a. The fellow should know the risks, benefits, and alternatives to capsule endoscopy and be able to appropriately explain this procedure to the patient and families.
- b. The fellow should know how the procedure is performed.
- c. The fellow should know how to use the computer system to read the capsule endoscopy.
- d. The fellow should be able to correctly interpret the capsule endoscopy.

7. Liver biopsy

- a. The trainee should be able to localize the liver and the most appropriate site for liver biopsy using percussion and palpation or, when necessary, by using imaging techniques and carefully instruct the patient on their role in the procedure (e.g. the patterns of breathing).
- b. Local anesthesia should be administered to prevent discomfort from the biopsy.
- c. The trainee should develop a rapid and efficient technique for obtaining a biopsy and be able to judge the adequacy of the sample.
- d. By the end of first year, the fellow should be able to obtain adequate liver tissue 90% of the time and at the end of the training, it should be 99% of the time.
- e. Following the biopsy, the trainee should position the patient to minimize the risk of hemorrhage and should be able to set monitoring parameters as well as identify the possibility of complications and the appropriate course of action.

(See also Reference Manual, Specific Procedures.)

8. Paracentesis

- a. The trainee should be able to diagnose ascites using percussion or when necessary ultrasonography or other diagnostic techniques.
- b. Local anesthesia should be adequate
- c. The trainee should demonstrate proficiency obtaining fluid in both diagnostic paracentesis and large volume paracentesis (LVP)
(See also Reference Manual, Specific Procedures.)

9. Enteral intubation

- a. The fellow should know how to place naso-gastric and oro-gastric tubes.
- b. The fellow should know how to do dilations and bougienage.

10. Motility and 24-hour pH probe studies: Clinical fellows will pursue this training during their 3 month clinical elective. Research fellows must arrange a meeting with Dr. Sheth and develop a program of independent study using available teaching files and through further discussion of cases with Dr. Sheth.

- a. By the end of clinical training, the fellow should have a thorough knowledge of the clinical presentations of commonly seen motility disorders of the gastrointestinal tract, in particular those of the esophagus and anal sphincters, and their characteristic pressure tracings.
- b. The fellow should be able to manage common motor disorders of the gastrointestinal tract and be familiar with the role of biofeedback in the treatment of disorders of the anal sphincter.
- c. Evaluation of motility tracings
 - i. Gain familiarity with the technical aspects of motility studies.
 - ii. Recognize characteristic manometric findings in patients with common esophageal disorders such as achalasia and esophageal spasm. Recognize normal motility tracings.
 - iii. Recognize characteristic manometric findings in ano-rectal manometry in diseases such as short-segment Hirschsprung's disease, colonic atony, and irritable bowel syndrome.
- d. Interpretation of 24-hour pH probes
 - i. The fellow will be able to correctly interpret 24-hour pH probes.
 - ii. The fellow will be able to recommend appropriate therapy based on the 24-hour pH probe findings.

11. Evaluating and treating complications

- a. The trainee should have full knowledge of the complications of the endoscopic procedures, liver biopsy, and paracentesis listed above
- b. The fellow should know the mechanisms for monitoring patients when a complication is suspected, and the treatment of complications.

Research Training Goals and Objectives

All fellows are required to participate in research activities and to present their research prior to graduation. Most fellows should have prepared a written manuscript of their research. Clinical fellows receive research training for approximately three months during their second or third years of fellowship. Research fellows receive at least 18 months of dedicated research training during their second and third years of fellowship.

In addition to excellent clinical training in Gastroenterology and Hepatology, the Section of Digestive Diseases also provides comprehensive research training that is designed to provide the basis for the development of an academic career in a Department of Medicine with emphasis on research, teaching and patient care. Training for research fellows is supported by one of two National Institutes of Health (NIH)-funded Research Training Grants in Investigative Gastroenterology and Hepatology. It is usual for such research trainees to spend four to five years (or more) obtaining both clinical and research training. At the time of the initial application to the fellowship program trainees should indicate their interest in obtaining research training and applicants are accepted specifically to the research training track. Trainees usually do their research training after the first year, but this may vary depending on the other trainees in the program. Trainees who are accepted to the research track cannot decide after beginning their training to switch to the clinical training track. Occasionally, it may be possible for a trainee admitted to the clinical training track to switch to the research training track.

Research training emphasizes laboratory-based research, patient-oriented research or translational research reflecting the many interests of the faculty who are heavily involved with research. The research training program emphasizes didactic studies (see below) and preceptor-directed research. Research preceptors are usually members of the Section of Digestive Diseases. On occasion, a trainee may have more than one preceptor. It is possible that a preceptor may not be a member of the Section of Digestive Diseases especially as there are several preceptors on the two NIH-funded training grants who are in other sections or departments.

Research training at Yale was enhanced in July 2000 by the establishment of the Investigative Medicine program. The Investigative Medicine program established in July 2000 is a Ph.D. training program for physician scientists in clinical departments and is an official graduate program of the Yale Graduate School of Arts and Sciences. Admission to the degree program is competitive, across multiple disciplines (i.e., clinical subspecialties), and with a focus on either patient-oriented research, disease-oriented research or basic "translational" laboratory research.

Trainees who are in the Investigative Medicine program as well as those who are not should take at least three courses: Modern Strategies in Cell and Molecular Biology; Introduction to Biostatistics; and Ethical and Practical Aspects of Clinical Investigation. Those trainees who are focused on patient-oriented research training may audit all or portions of the Robert Wood Johnson Clinical Scholar programs course in Quantitative Clinical Epidemiology. **All fellows participating in clinical research will need to have a mentor and a project decided upon at least 6 months in advance of the assigned**

research block in order to write, submit and get approval through the IRB for any research protocols.

The research interests of the faculty of the Section of Digestive Diseases are broad and include the following: the physiology, cell and molecular biology, and pathophysiology of digestive tract epithelial cells with a focus on the pancreas, large intestine, liver-biliary tract system, and the genetics of inflammatory bowel diseases; mechanisms of liver fibrosis; immunology of the liver; genetic disorders of the liver; and hemodynamics of the liver, portal hypertension and complications of cirrhosis. In addition, clinical trials are ongoing in several areas.

It is anticipated that trainees pursuing research training will have twelve months of dedicated inpatient clinical training plus another three months of clinical electives. During this fifteen month period, the trainee will devote 100% effort to his or her clinical training. The remaining three months of clinical training, for a total of 18 months of clinical training, will represent time devoted to the following: 1. coverage of inpatient rotations in the absence of other fellows, averaging two weeks per year; 2. endoscopy activities, usually one ½ day per week; 3. night-time and weekend on-call responsibilities; 4. Self-directed participation in training in capsule endoscopy and gastrointestinal motility. The trainee participates in endoscopy activities, call and continuity clinic throughout his or her fellowship.

The goals and objectives for the research fellow are to acquire the intellectual and technical skills to compete at the forefront of gastroenterology or hepatology research. To reach this goal the following objectives will be pursued:

1. Development of a strong scientific knowledge base

It is important to attain both a very broad perspective of modern biomedical science as well as those specific questions presently most relevant to gastroenterology and hepatology. A broad exposure is available through the many educational activities of the medical school and departmental lecture and lab courses designed for fellows in all sections. Sectional educational activities focus on research activities relevant to gastroenterology and hepatology.

2. Acquiring a questioning attitude

Human knowledge undergoes continual refinement and occasional revolution. In science asking the right question most often advances this process.

3. Understanding technical skills and their appropriate application

The third objective is to attain a working knowledge of the tools of science and how to appropriately apply them to a given problem.

4. Learning how to obtain support for research studies

Research success requires support for research studies. Competing for support requires knowledge of the variety of funding source and how and when to apply. The Digestive

Diseases faculty are highly successful in obtaining support and all are ready at any time to help fellows understand this seemingly complicated process.

Evaluation Process – Research Fellows

Each fellow doing independent research is responsible for organizing a committee composed of a mentor, common investigators within the Section of Digestive Diseases or other sections as relevant to his or her research, and a basic scientist (for those interested in bench research) or clinician (in the case of fellows interested in a career as clinical investigators). The committee is responsible for assessing the trainee's progress, providing guidance for their investigative activities and career, and aiding in obtaining grant support. The trainee is expected to arrange meetings with the committee at least twice per year. Trainees are required to present their work both in sectional research conferences as well as regional and national meetings.

Conferences

The scheduled conferences include the following (MA=mandatory attendance required):

1. Weekly multi-disciplinary clinical conference, Fridays, 2-3:30 in Fitkin Amphitheater, attended by Digestive Disease faculty, GI surgeons, pathologists, radiologists and GI pediatricians.

Different fellows prepare and present three cases for general discussion. Fellows are responsible for presenting a case via a slide presentation at this conference approximately once per month throughout the first year of fellowship and there afterwards approximately 2-4 times per year. Fellows are responsible for notifying pathology and radiology physicians and surgeons about the cases they are presenting so that the appropriate additional material, e.g., x-rays and pathology slides, are available to be discussed at the conference. (MA)

2. Dr. Binder at YNH and Drs Gorelick and Garcia-Tsao at the VA CT HCS run 'Professor's Rounds' monthly primarily with the fellows (and students, etc) on the Yale GI team or VA CT HCS rotations respectively though all others are always welcome. Emphasis is discussion of pathophysiology based on current patients in an informal setting. Time/day is determined monthly based on fellows' various clinic obligations.

3. Weekly multi-disciplinary clinical conference also takes place at VA CT HCS and St. Raphael's Hospital (1 hour) where fellows are required to prepare and present case material. All pertinent endoscopy, radiology, laboratory and pathologic material are reviewed and discussed at these conferences. (MA while at the institution)

4. A weekly pathophysiology and core curriculum conference is held at Yale-New Haven Hospital, on Fridays at 1:00 pm. Didactic lectures by faculty are provided in the topics listed in the General Medical Knowledge Section.

During the latter six months of the academic year, each fellow will prepare and present one assigned topic in depth to his/her fellows once per year during this time period. The fellow will have a faculty mentor to review the slide presentation and guide him or her in the presentation. (MA)

5. Monthly GI and monthly Liver Journal Clubs occur where fellows present and discuss significant clinical papers where they learn to critically assess the literature under the guidance of the faculty. Fellows present approximately twice per year during GI Journal Club and twice per year at Liver Journal Club. (MA)

6. Weekly basic and clinical research conference at Yale University on Tuesdays, 5-6:00 pm. (MA)

7. Three times per year conferences on biomedical ethics. (MA)

8. The Department of Pathology at Yale University provides a weekly liver biopsy conference and a weekly GI biopsy conference where faculty and fellows review current cases on a multi-headed microscope with video monitoring. It is the fellow's responsibility to attend these conferences and to develop appropriate skills in biopsy evaluation under the supervision of trained faculty in the Department of Pathology and Digestive Disease Section. The Klatskin Library has one of the most complete collections of liver biopsies in the world. Over 6,000 cases are catalogued according to the history and pathologic findings and are available for review. Weekly pathology conferences are also held at HSR.

9. Morbidity and Mortality (M&M) conferences are held at YNHH several times per year; at the VA CT HCS every six months; and quarterly at HSR. In addition, surgical complications that occur at the VA CT HCS are discussed at the weekly GI-Surgery-Pathology Conference at the VA CT HCS. (MA)

10. Biweekly didactic teaching attending rounds, times vary at HSR (MA while at the institution)

11. In addition to those listed above, there are other conferences that offer a broad spectrum of basic science and clinical research and clinical educational opportunities, i.e., Medical Grand Rounds, and participation is encouraged as time allows.

Fellows attend and participate in all of these conferences throughout the three year program. Attendance sheets are available at all of the conferences and the fellows are expected to sign in when they attend.

Vacation and Leave Time:

Fellows may take 2 weeks of scheduled vacation per year. Vacations should be approved by the associate fellowship director, Avlin Imaeda at least 3 months in advance. Therefore, 1st year fellows should not take vacation in the first 2 months of the fellowship. Once approved, site directors or clinic attendings should be notified immediately (3 months in advance) so that clinic patients can be moved in a timely fashion. If a 3 month notice is not possible than the fellow should find coverage for his or her clinic. A research fellow will be assigned by the associate fellowship director to cover the clinical rotation of any fellows taking vacation while on a clinical rotation.

Leave time for maternity leave, sick leave, or family care should be discussed and approved by the Fellowship director, Anil Nagar and discussed with Dr. Rosemarie Fisher, Associate Dean of Graduate Medical Education. Federal and State law allows for job protection (not paid time) for up to 12 weeks in 12 months for qualified reasons. In order to complete fellowship requirements necessary to sit for USMLE Board Certification any leave time greater than 4 weeks in a given year must be made up.

